

November 1, 2004
10077.003

Oregon Department of Environmental Quality
Northwest Region
2020 SW Fourth Avenue
Suite 400
Portland, Oregon 97201-4987

VIA Email/Hand Delivery

**Subject: Technical Memorandum
 Phase 2 Soil Characterization
 Remedial Investigation/Feasibility Study
 Astoria Area-Wide Petroleum Site
 Astoria, Oregon
 DEQ ECSI File #2277**

Dear Ms. Coates:

Enclosed are four copies of the above-referenced document. This report is being submitted to you on behalf of the Astoria Area-Wide Cooperating Parties. This report is intended to comply with the terms of DEQ Order No. ECSR-NWR-01-11.

Please call me at (503)768-5121 if you have any questions or comments.

Sincerely,
EnviroLogic Resources, Inc.

Thomas J. Calabrese, RG, CWRE
Principal/Hydrogeologist
Project Manager

cc: Distribution list attached

Ms. Anna Coates
November 1, 2004
Page 2

**ASTORIA AREA-WIDE PETROLEUM SITE
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TECHNICAL MEMORANDUM

**PHASE 2
SOIL CHARACTERIZATION**

**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon
DEQ ECSI File #2277**

November 1, 2004

Prepared by:

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TECHNICAL MEMORANDUM

**PHASE 2
SOIL CHARACTERIZATION**

**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
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November 1, 2004

**Prepared for:
Astoria Area-Wide PRP Group**

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**TECHNICAL MEMORANDUM
PHASE 2 SOIL CHARACTERIZATION**

**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon
DEQ ECSI File #2277**

November 1, 2004

This report has been prepared by *EnviroLogic Resources, Inc.*, of Portland, Oregon.

EnviroLogic Resources, Inc. Project No. 10077.003

By

Melanie N. Bocianowski
Project Geologist

Thomas J. Calabrese, RG, CWRE
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**TECHNICAL MEMORANDUM
PHASE 2 SOIL CHARACTERIZATION**

**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon
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1.0 INTRODUCTION

This Technical Memorandum presents the results of field and laboratory analytical work completed in August/September 2003 and March/April 2004 for the Remedial Investigation/Feasibility Study (RI/FS) at the Astoria Area-Wide Petroleum Site, Astoria, Oregon. The purpose of this technical memorandum is to present data collected as part of the Phase 2 soil characterization program for the RI. Compilations of data gathered, including boring logs and chemical analytical results, are included as appendices.

1.1 BACKGROUND

The Astoria Area-Wide site comprises properties located at and near the Port of Astoria in Astoria, Oregon. The location of the site is shown on Figure 1. The Regional Study Area (RSA) includes the Astoria Area-Wide site and the surrounding areas. The RSA is located in Section 7, Township 8 North, Range 9 West, and Section 12, Township 8 North, Range 10 West, Willamette Base and Meridian. The Astoria Area-Wide site includes that property bounded by the Burlington Northern Railroad tracks to the southeast, Portway to the northeast, the Columbia River to the northwest, and Hamburg Street (including the former McCall bulk plant); and the property bounded by the Burlington Northern Railroad tracks to the northwest, Hamburg Street to the southwest, Marine Drive to the southeast, and Portway to the northeast.

A topographic high to the east forms a prominent hill overlooking the RSA. West Marine Drive (US Highways 26, 30, and 101) is located on a topographic bench, at the base of the prominent hill, approximately 15 feet above the level of the Port facilities. The Columbia River flows to the west on the north side of the RSA. Youngs Bay lies to the south.

The area around the Port has been used for petroleum storage and distribution since the 1920s. Aboveground storage tanks (AST), underground storage tanks (UST), and pipelines are present on several of the facilities subject to this investigation. Historically, the area was home to at least four bulk petroleum storage facilities and five vehicle fueling or service stations between West Marine Drive and the Columbia River in the RSA. Pipelines from at least three of the bulk fuel storage facilities extend onto piers at the Port. The area is currently zoned for industrial and commercial uses and the zoning is expected to remain unchanged. Figure 2 shows the RSA and the locations of each of the properties subject to the Unilateral Order issued by the Oregon Department of Environmental Quality directing investigation at the Astoria Area-Wide site. Remedial actions have been conducted at several facilities in the RSA.

1.2 SUMMARY OF WORK COMPLETED

The scope of the second phase of soil characterization at the Astoria Area-Wide site is presented in RI/FS Work Plan Addendum, Phase 2 Soil Characterization (*EnviroLogic Resources, Inc.*, 2003b). This work plan (Phase 2 Work Plan) was developed based on data collected from the Phase 1 Remedial Investigation/Feasibility Study (RI/FS) field activities and historical information documented in the RI/FS and Interim Remedial Action Measures (IRAM) Work Plan, Phase 1 (RI/FS Work Plan) (*EnviroLogic Resources*, July 2002). The Phase 1 field activities were completed at the site in August and September 2002. The soil analytical results for the Phase 1 RI/FS field activities are presented in the Technical Memorandum, Phase 1 Source/Soil Characterization (Phase 1 Soil TM) dated January 30, 2003 (*EnviroLogic Resources*, January 2003a).

For Phase 2, eighty-eight (88) soil samples were collected on August 26 through 28, 2003; September 3 through 10, 2003; and March 31, 2004. Soil sampling and analytical procedures were performed as outlined in the Field Sampling Plan (Appendix A of the RI/FS Work Plan) and the Quality Assurance Project Plan (Appendix B of the RI/FS Work Plan). The boring locations are shown on Figure 2. Most of the soil samples were collected from soil borings drilled during monitoring well installation in August and September 2003. The remaining soil samples were collected from soil borings advanced in March 2004. Five other soil samples were collected from the excavations around the historical petroleum pipelines.

In March 2004, an investigation of the historical Shell/Mobil/Niemi petroleum pipelines located at the Port of Astoria was conducted. The purpose of the investigation was to further assess soil conditions adjacent to the historical pipelines, evaluate the current condition of the remaining sections of the pipelines, and decommission the pipelines if warranted. The activities included soil sampling and analyses, exposing and accessing the pipelines at several locations, inspecting the pipelines, removing product from the pipelines, decommissioning in place the pipelines. This work was conducted based on the scope of work included in RI/FS Work Plan Addendum, Historical Shell/Niemi/Mobil Petroleum Pipelines Investigation and Decommissioning Work Plan, dated December 18, 2003 (Pipeline Work Plan).

1.3 MODIFICATIONS TO THE WORK PLANS

The proposed test pit southeast of the Port shop, EX-5, was not excavated. This proposed excavation was labeled as EX-4 in the Pipeline Work Plan; and EX-4 was labeled as EX-5. Test pit EX-2 was extended in order to investigate along the pipeline observed at this location.

2.0 METHODS AND PROCEDURES

Standardized methods and procedures were developed prior to commencement of field activities. This protocol helped to control the quality of samples collected, provided a consistent framework for description of geologic materials, and helped to protect the health and safety of all site personnel. Quality-assurance protocols utilized are discussed in detail in the Quality Assurance Project Plan (QAPP) in Appendix B of the RI/FS Work Plan. Technical Specifications for Drilling Operations are in Appendix E of the RI/FS Work Plan. The fieldwork was performed at the site from August 26 through September 11, 2003; and March 29 through April 1, 2004.

2.1 DRILLING PROGRAM

Geo-Tech Explorations, Inc. (Geo-Tech), of Tualatin, Oregon, installed 36 ground-water monitoring wells using hollow-stem auger drilling rigs at the Astoria Area-Wide Petroleum Site in August and September 2003. The Technical Memorandum, Phase 1 Monitoring Well Installation (*EnviroLogic Resources*, 2004) contains the results of the monitoring well installation fieldwork. In March of 2004, 14 soil borings were drilled by Geo-Tech using a Geoprobe[®] rig.

Standardized protocols were employed during the soil-sampling operation. Soil samples were collected during hollow stem auger drilling by driving a 1.5-foot long, 2-inch I.D., split-spoon sampler with a 140-pound hammer. Brass sleeves were inserted into the sampler when samples were collected for laboratory analysis. End caps were fitted over Teflon sheeting at the ends of the brass sleeve and stored in resealable bags in a cooler with ice. Where samples were not necessary, the soil was collected in the split spoon sampler without sleeves. Soil samples were generally obtained and logged at 5-foot intervals (5, 10, 15, etc. feet) as specified in the RI/FS Work Plan.

A portion of each soil sample was also collected into resealable bags to measure organic vapors with a photoionization detector (PID). When drilling soil borings using the Geoprobe®, soil samples were collected from the 2-inch diameter cellulose acetate butylate (CAB) sleeves. With the plastic sleeve in place inside the sampler, the sampler was advanced into the ground, thereby coring the soil inside the sampler's disposable, single-use CAB liner. After each drive, the sleeve was cut length-wise to expose the recovered soil. Samples were collected by transferring the recovered soil into sample jars. A new plastic sleeve was placed inside the core sampler, and the core sampler was advanced to the next sample depth. The samples were stored in coolers with ice until delivered to the laboratory.

Samples from the pipeline investigation were collected from the walls and from beneath the pipelines inside the excavations. The soil was collected into glass sample jars and stored in a cooler with ice until delivered to the laboratory.

Laboratory analyses were conducted at North Creek Analytical, Inc., (NCA) and focused on petroleum products and their constituents. Samples were collected from areas and depths where data gaps existed, and/or where potential contamination was noticeable by sight, odor, or PID. Soil samples collected from the unsaturated zone were examined for lithology as well as for visual evidence of petroleum hydrocarbon impacts. Many soil samples were field screened with a PID. The field representative logged the lithology of each boring as it was drilled. These logs are presented in Appendix A.

Upon completion of each temporary boring, the boring was abandoned using bentonite, completely filling each hole to the ground surface. Boring locations were marked with a nail and flag for survey. Asphalt patches covered the boring locations where appropriate.

2.3 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

Samples were collected from known or suspected areas of contamination and from areas located to provide information where data gaps existed. Sampling procedures and protocols for each sampling activity were developed to meet the project data quality objectives and were based on proven and acceptable sampling methods as established by EPA guidance documents, Oregon state regulations, and professional judgment.

Laboratory method blanks were analyzed to evaluate whether the analytical results are representative of the sampled material and not influenced by non-site related contamination. Laboratory QC samples included laboratory matrix or method spikes, laboratory matrix spike duplicates, laboratory duplicates, and laboratory method blanks. Analytical reports from NCA were accompanied by QC results, and other necessary analytical information for evaluation of the quality of the data. A review of these data is included in Appendix B.

3.0 SOIL CHARACTERIZATION PROGRAM

A total of 50 borings were drilled at the Astoria Area-Wide site during August and September 2003; and March 2004. Borings used for later installation of ground-water monitoring wells, as well as Geoprobe[®] borings were designed to fill identified data gaps remaining after completion of Phase 1. Figure 2 shows the locations of these soil borings. A lithologic log was created for each boring (Appendix A) and soil samples were collected for laboratory analysis (Appendix B). The depth of each boring is included on the lithologic log.

Two soil borings were drilled at/near the Youngs Bay Texaco site [SB-105(C) and SB-004(A)] and 4 borings were drilled on the former Chevron/McCall bulk plant site [SB-253(C), SB-254(C), SB-255(C), and SB-256(C)]. A total of 14 soil borings were drilled either at the Delphia Oil Bulk Facility [SB-320(D) through SB-322(D), SB-330(D), SB-003(A), and SB-016(A)], Val's Texaco [SB-323(D) through SB-329(D) and SB-331(D)] or on adjoining streets. Soil boring SB-331(D) was added due to refusal in SB-326(D).

Two soil borings [SB-410(F) and SB-017(A)] were drilled below the Harris/Van West property. Soil boring SB-410(F), was drilled on the driveway adjacent to and below the west side of the Harris/Van West property. Soil boring SB-017(A) was drilled below the property towards the Niemi Cardlock, which is approximately 15 feet lower in elevation than the Harris/Van West site. To the west of the Niemi Cardlock two borings [SB-834(Q) and SB-835(Q)] were drilled at the Qwest site (Figure 2). To the north of the Qwest site, on the north side of Industry Street, one boring was drilled [SB-005(A)].

Three borings were drilled at the Niemi Cardlock Facility [SB-630(N) through SB-632 (N)] and boring SB-015(A) was drilled on Industry Street northwest of the Facility. Five borings were drilled at and adjacent to the former Mobil/Niemi Oil Bulk Plant [SB-627(N) through SB-629(N), SB-018(A), and SB-019(A)].

Seven soil borings [SB-001(A), SB-002(A), and SB-006(A) through 010(A)] were drilled in the area surrounding the Port offices and the McCall Oil pipeline and diesel release area. SB-001(A) was drilled north of the offices at the base of Pier 2 and SB-721(A) was drilled at the end of Pier 3. Southeast of the Port offices in the vicinity of the former furniture manufacturing and steelworks buildings five soil borings [SB-001(A) through SB-SB-014(A) and SB-020(A)] were drilled. Further to the east, at the former Shell bulk facility, three soil borings [SB-912(S) to SB-914(S)] were completed.

Soil samples were collected in each of the borings and analyzed for COIs in accordance with the Phase 2 Work Plan. After soil samples were collected, the soil borings or Geoprobess[®] were backfilled with bentonite or completed as monitoring wells. Monitoring well construction details are included on the lithologic logs in Appendix A.

Based on a review of all the boring logs most of the Astoria Area-Wide site is underlain by gray and light brown sand fill. Lenses of silt and clay are present in the fill as well as gravel, wood, and other organics. In addition, two native materials were encountered beneath the site; native river deposits and the Astoria Formation. The native materials were not encountered near the site surface but at depth. This is consistent with the conceptual hydrogeologic model presented in the Work Plan.

Native river deposits consisting of dark greenish-gray silty sandy clay with cobbles were encountered beneath the Qwest site as in SB-802(Q). The deposit was encountered at a depth of 9 feet. During the second phase of drilling, very hard dark brownish gray dry clay was encountered beneath the Qwest site [SB-834(Q)], the western edge of the Niemi Cardlock [SB-632(N)] site and the Harris/Van West site [SB-017(A)]. Mudstone and yellowish-red and yellowish-brown silts were encountered in soil borings located at the Harris/Van West [SB-404 (F)] site and the Youngs Bay Texaco [SB-101(C), SB-004(A) and SB-103(C)] site, respectively. The mudstone and silts were encountered near the base of the borings from depths of 14 to 18 feet. In soil boring SB-004(A) the mudstone was underlain by a light gray silty clay. The mudstone, silty clay and silt is interpreted to be part of the Astoria Formation.

Ground water was generally encountered between depths of 6 and 9 feet at the site, except along West Marine Drive. The three sites along West Marine Drive have a surface elevation approximately 15 feet above the remainder of the site and the depth to ground-water was generally 22 feet. Boring logs for each site are presented in Appendix A.

4.0 OCCURRENCE OF COIs IN SOIL

Most borings at the Astoria Area-Wide site were sampled and analyzed for petroleum hydrocarbons, including VOCs in soil. Analyses for gasoline; diesel; RBDM VOCs; SVOCS; and metals were conducted as part of the Phase 2 RI. Table 1 presents a listing of chemicals detected in soil during the Phase 2 soil characterization of the RI.

4.1 OVERVIEW OF STATISTICAL DATA ANALYSIS

Statistical analyses of the soil chemistry data collected at the Astoria Area-Wide site were conducted and are presented in Table 1. These statistical analyses were performed to help describe the analytical data, and are not intended to be used for purposes of assessing human health or ecological risk.

Table 1 presents the number of samples analyzed and the number of samples with detections. From this the frequency of detection is calculated:

$$\text{Number of samples with detections/Total number of samples} = \text{Frequency of Detection (\%)}$$

The maximum value detected for each constituent is also shown on Table 1.

4.2 DISCUSSION OF RESULTS

The soil analytical results from all Phase 2 soil borings are summarized in Table 3 through Table 6. Figures 3 through 7 show the occurrence of petroleum hydrocarbons and representative COIs based on the Phase 2 soil analytical data. These figures show the locations of borings and the analytical results for borings where soil samples were collected and analyzed. Not all borings were sampled during the Phase 2 soil investigation.

Gasoline and diesel, presented on Figures 3 and 4, were detected in approximately 40% and 60% respectively of the samples analyzed for these hydrocarbons. Eighty-four samples were analyzed for gasoline and diesel. The highest concentration of diesel during the Phase 2 sampling event was 14,000 mg/kg. Gasoline ranged from nondetect to 5,960 mg/kg.

Figures 5 and 6 show the occurrence of BTEX (benzene, toluene, ethylbenzene, and xylenes) and benzene, respectively. BTEX is a common group of chemicals used to describe gasoline releases. Of these, benzene is considered the most hazardous but it also degrades rapidly. The occurrence of BTEX is similar to the occurrence of gasoline at the Astoria Area-Wide site. Benzene, however, was detected in only 22% of 77 analyses for this constituent and its distribution is not as widespread as gasoline or the other aromatic constituents. The maximum concentration of benzene detected during the Phase 2 sampling was 4.39 mg/kg.

Naphthalene was detected in 43% of the analyses conducted for naphthalene. 143 analyses were performed for naphthalene. The constituent was often analyzed twice in each sample; once during the RBDM VOCs analysis, and again during the SVOCs analysis. The maximum concentration of naphthalene detected was 85.3 mg/kg. Its distribution with analytical results is shown on Figure 7. There are similarities among the occurrence of naphthalene, gasoline, and diesel, where all of these analyses were conducted.

5.0 REFERENCES

- EnviroLogic Resources, Inc.*, 2002a, RI/FS and IRAM Development Proposal, Remedial Investigation/Feasibility Study, Astoria Area-Wide Petroleum Site, Astoria, Oregon: consultant report dated January 21, 2002.
- EnviroLogic Resources, Inc.*, 2002b, RI/FS and IRAM Development Work Plan, Phase 1, Remedial Investigation/Feasibility Study, Astoria Area-Wide Petroleum Site, Astoria, Oregon: consultant report dated July 15, 2002.
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US EPA, 1986a, Test methods for evaluating solid waste, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, SW-846, September (update 1, July 1992; update 2a, August 1993; update 2, September 1994; update 2b, January 1995).

TABLES

TABLE 1
CHEMICALS DETECTED IN SOIL AND SUMMARY STATISTICS

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Chemical	Total Number of Analyses	Number of Analyses with a Detection	Frequency of Detection (Percent)	Maximum Value (mg/kg)
Diesel Range Organics	84	30	36	14,000
Gasoline Range Organics	84	49	58	5,960
Heavy Oil Range Organics	84	25	30	19,200
1,2,4-Trimethylbenzene	73	33	45	288
1,2-Dibromoethane	73	0	0	na
1,2-Dichloroethane	73	0	0	na
1,3,5-Trimethylbenzene	73	23	32	58
Benzene	77	17	22	4.39
Ethylbenzene	77	22	29	73.8
Isopropylbenzene	73	18	25	8.76
Methyl-t-butyl ether	73	0	0	na
n-Propylbenzene	73	21	29	38.3
Toluene	77	16	21	7.4
Xylenes	77	19	25	134
Acenaphthene	51	9	18	7.4
Acenaphthylene	51	1	2	0.953
Anthracene	51	11	22	3.72
Benzo(a)anthracene	51	9	18	4.43
Benzo(a)pyrene	51	10	20	5.84
Benzo(b)fluoranthene	51	8	16	3.54
Benzo(g,h,i)perylene	51	10	20	6.39
Benzo(k)fluoranthene	51	8	16	3.54
Chrysene	51	13	25	5.39
Dibenzo(a,h)anthracene	51	6	12	0.694
Fluoranthene	51	12	24	24.5
Fluorene	51	10	20	8.15
Indeno(1,2,3-cd)pyrene	51	10	20	4.23
Naphthalene	124	53	43	85.3
Phenanthrene	51	16	31	35.8
Pyrene	51	17	33	24.4
Arsenic, Total	1	1	100	2.19
Barium	1	1	100	37.5
Cadmium	1	0	0	na
Chromium	4	4	100	16.3
Lead	36	36	100	107
Mercury	1	0	0	na
Selenium	1	0	0	na
Silver	1	0	0	na

TABLE 2
DATA QUALIFIER DEFINITIONS

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

J+ The analyte was positively identified; the associated numerical value appears to be bias high.

J- The analyte was positively identified; the associated numerical value appears to be bias low.

UJ- The analyte was not detected above the reporting limit. However, the reporting limit appears to be bias low and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

C Common laboratory contaminant

B The analyte was also identified in a field or laboratory blank associated with this sample or sample group.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

TABLE 3

PETROLEUM HYDROCARBONS IN SOIL

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	Diesel Range Organics	Gasoline Range Organics	Residual Range Organics
				mg/kg	mg/kg	mg/kg
EX-1(S)	Ex-1/S-1	3/30/2004		26.5	1.26 J	34 J
EX-2(S)	Ex-2/S-1	3/30/2004		16.1 J	3.18 J	110
EX-2(S)	Ex-2/S-2	4/1/2004		25 U	2.09 J	35.6 J
EX-3(S)	Ex-3/S-1	3/31/2004		770	1.08 J	760
EX-4(S)	Ex-4/S-1	3/29/2004		ND	ND	ND
SB-001(A)	SB-001(A)-7.5	8/27/2003	7.5	25 U	4.64	50 U
SB-002(A)	SB-002(A)-2.5	8/27/2003	2.5	25 U	8.4	50 U
SB-002(A)	SB-002(A)-7.5	8/27/2003	7.5	25 U	3.18 J	50 U
SB-005(A)	SB-005(A)-2.5	9/5/2003	2.5	25 U	4 U	50 U
SB-005(A)	SB-005(A)-7	9/5/2003	7	25 U	4 U	50 U
SB-006(A)	SB-006(A)-7'	3/31/2004	7	14000	2190	2000 U
SB-007(A)	SB-007(A)-7.5	8/26/2003	7.5	6840	2520	1000 U
SB-008(A)	SB-008(A)-2	8/26/2003	2	16.6 J	4.93	59
SB-008(A)	SB-008(A)-7.5	8/26/2003	7.5	25 U	4 U	50 U
SB-009(A)	SB-009(A)-2	8/27/2003	2	25 U	7.84	50 U
SB-009(A)	SB-009(A)-7.5	8/27/2003	7.5	12200	1670	2000 U
SB-010(A)	SB-010(A)-2	8/27/2003	2	25 U	6.39	50 U
SB-010(A)	SB-010(A)-7.5	8/27/2003	7.5	25 U	2.76 J	50 U
SB-011(A)	SB-011(A)-7.5	9/3/2003	7.5	25 U	4 U	50 U
SB-013(A)	SB-013(A)-7.5	9/3/2003	7.5	25 U	4 U	50 U
SB-015(A)	SB-015(A)-7	9/10/2003	7	25 U	695	50 U
SB-017(A)	SB-017(A)-7.5	9/8/2003	7.5	25 U	4 U	50 U
SB-019(A)	SB-019(A)-2.5	8/27/2003	2.5	25 U	7.46	50 U
SB-019(A)	SB-019(A)-7.5	8/27/2003	7.5	2370	5960	67.8
SB-020(A)	SB-020(A)-4'	3/31/2004	4	25 U	4 U B	50 U

TABLE 3

PETROLEUM HYDROCARBONS IN SOIL

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	Diesel Range Organics	Gasoline Range Organics	Residual Range Organics
				mg/kg	mg/kg	mg/kg
SB-020(A)	SB-020(A)-9'	3/31/2004	9	25 U	4 U B	50 U
SB-253(C)	SB-253(C)-2	9/4/2003	2	25 U	4 U	50 U
SB-253(C)	SB-253(C)-7.5	9/4/2003	7.5	25 U	4 U	50 U
SB-254(C)	SB-254(C)-2	9/4/2003	2	250 U	4 U	1010
SB-254(C)	SB-254(C)-7	9/4/2003	7	25 U	4 U	50 U
SB-255(C)	SB-255(C)-2.5	9/4/2003	2.5	77.5	4 U	325
SB-255(C)	SB-255(C)-7	9/4/2003	7	196	10	301
SB256(C)	SB256 (c) 6	3/31/2004	6	25 U	6.23 J	50 U
SB-320(D)	SB-320(D)-2	9/10/2003	2	25 U	4 U	50 U
SB-320(D)	SB-320(D)-5	9/10/2003	5	25 U	4 U	50 U
SB-321(D)	SB-321(D)-2	9/9/2003	2	1780	392	3560
SB-321(D)	SB-321(D)-5	9/9/2003	5	6370	1530	19200
SB-322(D)	SB-322(D)-2	9/10/2003	2	25 U	4.31	27.8 J
SB-322(D)	SB-322(D)-5	9/10/2003	5	25 U	4.61	50 U
SB-323(D)	SB-323(D)-7	9/10/2003	7	25 U	2.61 J	50 U
SB-324(D)	SB-324(D)-10	9/10/2003	10	4630	586	50 U
SB-324(D)	SB-324(D)-15	9/10/2003	15	433	162	250 U
SB-324(D)	SB-324(D)-2	9/10/2003	2	25 U	2.75 J	50 U
SB-324(D)	SB-324(D)-5	9/10/2003	5	25 U	2.63 J	50 U
SB-324(D)	SB-324(D)-DUP	9/10/2003	15	592	366	1500
SB-325(D)	SB-325(D)-10	9/10/2003	10	25 U	4 U	50 U
SB-325(D)	SB-325(D)-15	9/10/2003	15	25 U	6.05	50 U
SB-325(D)	SB-325(D)-2	9/10/2003	2	25 U	5.53	50 U
SB-325(D)	SB-325(D)-5	9/10/2003	5	25 U	4 U	50 U

TABLE 3

PETROLEUM HYDROCARBONS IN SOIL

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	Diesel Range Organics	Gasoline Range Organics	Residual Range Organics
				mg/kg	mg/kg	mg/kg
SB-325(D)	SB-325(D)-DUP	9/10/2003	2	25 U	3.17 J	50 U
SB-326(D)	SB-326(D)-10	9/9/2003	10	202	1920	50 U
SB-326(D)	SB-326(D)-2	9/9/2003	2	25 U	31.6	50 U
SB-326(D)	SB-326(D)-5	9/9/2003	5	25 U	870	47.2 J
SB-327(D)	SB-327(D)-10	9/10/2003	10	9640	758	1000 U
SB-327(D)	SB-327(D)-15	9/10/2003	15	22 J	390	50 U
SB-327(D)	SB-327(D)-2	9/10/2003	2	25 U	2.78 J	50 U
SB-327(D)	SB-327(D)-5	9/10/2003	5	25 U	6.22	50 U
SB-328(D)	SB-328(D)-10	9/10/2003	10	3580	1360	50 U
SB-328(D)	SB-328(D)-15	9/10/2003	15	22.8 J	11.4	50 U
SB-328(D)	SB-328(D)-2	9/10/2003	2	25 U	4 U	48.1 J
SB-328(D)	SB-328(D)-5	9/10/2003	5	21.3 J	67.9	104
SB-410(F)	SB-410(F)-2'	3/31/2004	2	48.2	4.45 J,B	179
SB-410(F)	SB-410(F)-4'	3/31/2004	4	25 U	4 U B	50 U
SB-410(F)	SB-410(F)-9'	3/31/2004	9	25 U	4 U B	50 U
SB-627(N)	SB-627(N)-2	8/28/2003	2	132	31.4	239
SB-629(N)	SB-629(N)-7.5	8/28/2003	7.5	10800	1650	1000 U
SB-632(N)	SB-632(N)-7.5	9/8/2003	7.5	282	1690	36.5 J
SB-721(P)	SB-721(P)-7'	3/31/2004	7	25 U	4 U B	50 U
SB-834(Q)	SB-834(Q)-2	9/5/2003	2	25 U	4 U	50 U
SB-834(Q)	SB-834(Q)-7.5	9/5/2003	7.5	25 U	4 U	50 U
SB-835(Q)	SB-835(Q)-2	9/5/2003	2	25 U	4 U	107

TABLE 3

PETROLEUM HYDROCARBONS IN SOIL

Remedial Investigation/Feasibility Study
 Astoria Area-Wide Petroleum Site
 Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	Diesel Range Organics	Gasoline Range Organics	Residual Range Organics
				mg/kg	mg/kg	mg/kg
SB-835(Q)	SB-835(Q)-7	9/5/2003	7	25 U	4 U	50 U
SB-912(S)	SB-912(S)-2	9/3/2003	2	27.8	4 U	130
SB-912(S)	SB-912(S)-7	9/3/2003	7	25 U	4 U	50 U
SB-913(S)	SB-913(S)-2	9/3/2003	2	2440	2.58 J	6390
SB-913(S)	SB-913(S)-7	9/3/2003	7	2050	4.64	1250
SB-914(S)	SB-914(S)-2	9/3/2003	2	25 U	4 U	50 U
SB-914(S)	SB-914(S)-7.5	9/3/2003	7.5	25 U	4 U	50 U
SB-915(S)	SB-915(s)-5.0	3/31/2004	5	25 U	ND	294
SB-915(S)	SB-915(s)-5.0	3/31/2004	5	Present J		Present
SB-916(S)	SB-916(s)-5.0	3/31/2004	5	ND	ND	ND
SB-917(S)	SB-917(s)-5.0	3/31/2004	5	ND	ND	ND
SB-918(S)	SB-918(s)-5.0	3/31/2004	5	Present J	Present J	ND
SB-919(S)	SB-919(s)-5.0	3/31/2004	5	ND	ND	ND

TABLE 4

RBDM VOCs IN SOIL

Remedial Investigation/Feasibility Study

Astoria Area-Wide Petroleum Site

Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	1,2,4- Trimethylb enzene	1,2- Dibromoethane	1,2- Dichloroethane	1,3,5- Trimethylb enzene	Benzene
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EX-1(S)	Ex-1/S-1	3/30/2004						0.05 U
EX-2(S)	Ex-2/S-1	3/30/2004						0.0493
EX-3(S)	Ex-3/S-1	3/31/2004						0.05 U
EX-4(S)	Ex-4/S-1	3/29/2004						0.05 U
SB-001(A)	SB-001(A)-7.5	8/27/2003	7.5	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-002(A)	SB-002(A)-2.5	8/27/2003	2.5	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-002(A)	SB-002(A)-7.5	8/27/2003	7.5	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-005(A)	SB-005(A)-2.5	9/5/2003	2.5	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-005(A)	SB-005(A)-7	9/5/2003	7	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-006(A)	SB-006(A)-7'	3/31/2004	7	186	0.5 U	0.5 U	31.1	4.39
SB-007(A)	SB-007(A)-7.5	8/26/2003	7.5	247	2.5 U	2.5 U	58	1.19 J
SB-008(A)	SB-008(A)-2	8/26/2003	2	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-008(A)	SB-008(A)-7.5	8/26/2003	7.5	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-009(A)	SB-009(A)-2	8/27/2003	2	0.0438 J	0.05 U	0.05 U	0.0109 J	0.05 U
SB-009(A)	SB-009(A)-7.5	8/27/2003	7.5	2.47	0.5 U	0.5 U	2.62	0.309 J
SB-010(A)	SB-010(A)-2	8/27/2003	2	0.0105 J	0.05 U	0.05 U	0.05 U	0.05 U
SB-010(A)	SB-010(A)-7.5	8/27/2003	7.5	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-011(A)	SB-011(A)-7.5	9/3/2003	7.5	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-013(A)	SB-013(A)-7.5	9/3/2003	7.5	0.0151 J	0.05 U	0.05 U	0.05 U	0.05 U
SB-015(A)	SB-015(A)-7	9/10/2003	7	44.1	0.25 U	0.25 U	11.6	0.116
SB-017(A)	SB-017(A)-7.5	9/8/2003	7.5	0.0503 J	0.05 U	0.05 U	0.05 U	0.05 U
SB-019(A)	SB-019(A)-2.5	8/27/2003	2.5	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-019(A)	SB-019(A)-7.5	8/27/2003	7.5	288	2.5 U	2.5 U	46.3	2.5 U
SB-020(A)	SB-020(A)-4'	3/31/2004	4	0.1 U	0.05 U	0.05 U	0.05 U	0.04 U
SB-020(A)	SB-020(A)-9'	3/31/2004	9	0.1 U	0.05 U	0.05 U	0.05 U	0.04 U
SB-253(C)	SB-253(C)-2	9/4/2003	2	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-253(C)	SB-253(C)-7.5	9/4/2003	7.5	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U

TABLE 4

RBDM VOCs IN SOIL

Remedial Investigation/Feasibility Study

Astoria Area-Wide Petroleum Site

Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	1,2,4- Trimethylb enzene	1,2- Dibromoethane	1,2- Dichloroethane	1,3,5- Trimethylb enzene	Benzene
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SB-254(C)	SB-254(C)-2	9/4/2003	2	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-254(C)	SB-254(C)-7	9/4/2003	7	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-255(C)	SB-255(C)-2.5	9/4/2003	2.5	0.0136 J	0.05 U	0.05 U	0.05 U	0.05 U
SB-255(C)	SB-255(C)-7	9/4/2003	7	0.0355 J	0.05 U	0.05 U	0.02 J	0.0122 J
SB-256(C)	SB-256 (c) 6	3/31/2004	6	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
SB-320(D)	SB-320(D)-2	9/10/2003	2	0.0334	0.05 U	0.05 U	0.05 U	0.05 U
SB-320(D)	SB-320(D)-5	9/10/2003	5	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-321(D)	SB-321(D)-2	9/9/2003	2	10.3	0.05 U	0.05 U	0.187	0.0456 J
SB-321(D)	SB-321(D)-5	9/9/2003	5	39.5	0.25 U	0.25 U	22.2	0.563
SB-322(D)	SB-322(D)-2	9/10/2003	2	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-322(D)	SB-322(D)-5	9/10/2003	5	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-323(D)	SB-323(D)-7	9/10/2003	7	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-324(D)	SB-324(D)-10	9/10/2003	10	18.2	0.1 U	0.1 U	0.41	0.141
SB-324(D)	SB-324(D)-15	9/10/2003	15	0.824	0.05 U	0.05 U	0.146	0.0328
SB-324(D)	SB-324(D)-2	9/10/2003	2	0.0526	0.05 U	0.05 U	0.05 U	0.05 U
SB-324(D)	SB-324(D)-5	9/10/2003	5	0.0187	0.05 U	0.05 U	0.05 U	0.05 U
SB-324(D)	SB-324(D)-DUP	9/10/2003	15	7.29	0.05 U	0.05 U	0.86	0.156
SB-325(D)	SB-325(D)-10	9/10/2003	10	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-325(D)	SB-325(D)-15	9/10/2003	15	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-325(D)	SB-325(D)-2	9/10/2003	2	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-325(D)	SB-325(D)-5	9/10/2003	5	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-325(D)	SB-325(D)-DUP	9/10/2003	2	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-326(D)	SB-326(D)-10	9/9/2003	10	26.6	0.25 U	0.25 U	9.67	0.639
SB-326(D)	SB-326(D)-2	9/9/2003	2	0.123	0.05 U	0.05 U	0.0537	0.0689
SB-326(D)	SB-326(D)-5	9/9/2003	5	22.5	0.25 U	0.25 U	8.02	0.599
SB-327(D)	SB-327(D)-10	9/10/2003	10	8.15	0.1 U	0.1 U	1.19	0.1 U
SB-327(D)	SB-327(D)-15	9/10/2003	15	40.8	0.25 U	0.25 U	5.59	0.25 U
SB-327(D)	SB-327(D)-2	9/10/2003	2	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-327(D)	SB-327(D)-5	9/10/2003	5	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U

TABLE 4

RBDM VOCs IN SOIL

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	1,2,4- Trimethylb enzene	1,2- Dibromoethane	1,2- Dichloroethane	1,3,5- Trimethylb enzene	Benzene
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SB-328(D)	SB-328(D)-10	9/10/2003	10	77	0.5 U	0.5 U	13.1	0.472 J
SB-328(D)	SB-328(D)-15	9/10/2003	15	0.313	0.05 U	0.05 U	0.109	0.0414
SB-328(D)	SB-328(D)-2	9/10/2003	2	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-328(D)	SB-328(D)-5	9/10/2003	5	0.0888 J	0.05 U	0.05 U	0.0407 J	0.05 U
SB-410(F)	SB-410(F)-2'	3/31/2004	2	0.0186 J	0.05 U	0.05 U	0.05 U	0.04 U
SB-410(F)	SB-410(F)-4'	3/31/2004	4	0.1 U	0.05 U	0.05 U	0.05 U	0.04 U
SB-410(F)	SB-410(F)-9'	3/31/2004	9	0.1 U	0.05 U	0.05 U	0.05 U	0.04 U
SB-627(N)	SB-627(N)-2	8/28/2003	2	0.0194 J	0.05 U	0.05 U	0.05 U	0.05 U
SB-629(N)	SB-629(N)-7.5	8/28/2003	7.5	36.2	0.5 U	0.5 U	11.6	0.131 J
SB-632(N)	SB-632(N)-7.5	9/8/2003	7.5	152	0.5 U	0.5 U	36.8	0.5 U
SB-721(P)	SB-721(P)-7'	3/31/2004	7	0.1 U	0.05 U	0.05 U	0.05 U	0.04 U
SB-834(Q)	SB-834(Q)-2	9/5/2003	2	0.0334 J	0.05 U	0.05 U	0.0108 J	0.05 U
SB-834(Q)	SB-834(Q)-7.5	9/5/2003	7.5	0.0166 J	0.05 U	0.05 U	0.05 U	0.05 U
SB-835(Q)	SB-835(Q)-2	9/5/2003	2	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-835(Q)	SB-835(Q)-7	9/5/2003	7	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-912(S)	SB-912(S)-2	9/3/2003	2	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-912(S)	SB-912(S)-7	9/3/2003	7	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-913(S)	SB-913(S)-2	9/3/2003	2	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-913(S)	SB-913(S)-7	9/3/2003	7	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-914(S)	SB-914(S)-2	9/3/2003	2	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U
SB-914(S)	SB-914(S)-7.5	9/3/2003	7.5	0.1 U	0.05 U	0.05 U	0.05 U	0.05 U

TABLE 4

RBDM VOCs IN SOIL

Remedial Investigation/Feasibility Study

Astoria Area-Wide Petroleum Site

Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	Ethylbenzene	Isopropylbenzene	Methyl-t-butyl ether	n-Propylbenzene	Toluene	Xylenes
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EX-1(S)	Ex-1/S-1	3/30/2004		0.05 U				0.05 U	0.05 U
EX-2(S)	Ex-2/S-1	3/30/2004		0.0778				0.053	0.129
EX-3(S)	Ex-3/S-1	3/31/2004		0.05 U				0.05 U	0.05 U
EX-4(S)	Ex-4/S-1	3/29/2004		0.05 U				0.05 U	0.05 U
SB-001(A)	SB-001(A)-7.5	8/27/2003	7.5	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-002(A)	SB-002(A)-2.5	8/27/2003	2.5	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-002(A)	SB-002(A)-7.5	8/27/2003	7.5	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-005(A)	SB-005(A)-2.5	9/5/2003	2.5	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-005(A)	SB-005(A)-7	9/5/2003	7	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-006(A)	SB-006(A)-7'	3/31/2004	7	73.8	7.68	2 U	34.7	0.832	86.9
SB-007(A)	SB-007(A)-7.5	8/26/2003	7.5	68.8	7.3 J	10 U	38.2	1.24 J	120
SB-008(A)	SB-008(A)-2	8/26/2003	2	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-008(A)	SB-008(A)-7.5	8/26/2003	7.5	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-009(A)	SB-009(A)-2	8/27/2003	2	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-009(A)	SB-009(A)-7.5	8/27/2003	7.5	4.72	1.6 J	2 U	3.9	0.245 J	1.32
SB-010(A)	SB-010(A)-2	8/27/2003	2	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-010(A)	SB-010(A)-7.5	8/27/2003	7.5	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-011(A)	SB-011(A)-7.5	9/3/2003	7.5	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-013(A)	SB-013(A)-7.5	9/3/2003	7.5	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-015(A)	SB-015(A)-7	9/10/2003	7	11.7	1.41	1 U	5.61	7.4	64.6
SB-017(A)	SB-017(A)-7.5	9/8/2003	7.5	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-019(A)	SB-019(A)-2.5	8/27/2003	2.5	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-019(A)	SB-019(A)-7.5	8/27/2003	7.5	53.3	8.76 J	10 U	38.3	2.38 J	134
SB-020(A)	SB-020(A)-4'	3/31/2004	4	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-020(A)	SB-020(A)-9'	3/31/2004	9	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-253(C)	SB-253(C)-2	9/4/2003	2	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-253(C)	SB-253(C)-7.5	9/4/2003	7.5	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U

TABLE 4

RBDM VOCs IN SOIL

Remedial Investigation/Feasibility Study

Astoria Area-Wide Petroleum Site

Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	Ethylbenzene	Isopropylbenzene	Methyl-t-butyl ether	n-Propylbenzene	Toluene	Xylenes
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SB-254(C)	SB-254(C)-2	9/4/2003	2	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-254(C)	SB-254(C)-7	9/4/2003	7	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-255(C)	SB-255(C)-2.5	9/4/2003	2.5	0.05 U	0.2 U	0.2 U	0.05 U	0.0237 J	0.1 U
SB-255(C)	SB-255(C)-7	9/4/2003	7	0.05 U	0.2 U	0.2 U	0.05 U	0.0189 J	0.1 U
SB-256(C)	SB-256 (c) 6	3/31/2004	6	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	
SB-320(D)	SB-320(D)-2	9/10/2003	2	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-320(D)	SB-320(D)-5	9/10/2003	5	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-321(D)	SB-321(D)-2	9/9/2003	2	1.9	0.313	0.2 U	1.14	0.0933	4.15
SB-321(D)	SB-321(D)-5	9/9/2003	5	3.52	3.76	1 U	14.1	1.45	31.6
SB-322(D)	SB-322(D)-2	9/10/2003	2	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-322(D)	SB-322(D)-5	9/10/2003	5	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-323(D)	SB-323(D)-7	9/10/2003	7	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-324(D)	SB-324(D)-10	9/10/2003	10	0.381	1.38	0.4 U	3.43	0.1 U	1.32
SB-324(D)	SB-324(D)-15	9/10/2003	15	0.298	0.0644	0.2 U	0.191	0.05 U	0.179
SB-324(D)	SB-324(D)-2	9/10/2003	2	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-324(D)	SB-324(D)-5	9/10/2003	5	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-324(D)	SB-324(D)-DUP	9/10/2003	15	0.972	0.485	0.2 U	1.43	0.0457 J	1.39
SB-325(D)	SB-325(D)-10	9/10/2003	10	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-325(D)	SB-325(D)-15	9/10/2003	15	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-325(D)	SB-325(D)-2	9/10/2003	2	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-325(D)	SB-325(D)-5	9/10/2003	5	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-325(D)	SB-325(D)-DUP	9/10/2003	2	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-326(D)	SB-326(D)-10	9/9/2003	10	9.62	1.28	1 U	5.19	0.0752	23.3
SB-326(D)	SB-326(D)-2	9/9/2003	2	0.0234	0.2 U	0.2 U	0.0289	0.0744	0.1 U
SB-326(D)	SB-326(D)-5	9/9/2003	5	7.91	1.06	1 U	4.21	0.25 U	19.4
SB-327(D)	SB-327(D)-10	9/10/2003	10	0.158	0.655	0.4 U	1.22	0.1 U	0.652
SB-327(D)	SB-327(D)-15	9/10/2003	15	10.1	1.81	1 U	7.49	0.0932 J	7.42
SB-327(D)	SB-327(D)-2	9/10/2003	2	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-327(D)	SB-327(D)-5	9/10/2003	5	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U

TABLE 4

RBDM VOCs IN SOIL

Remedial Investigation/Feasibility Study

Astoria Area-Wide Petroleum Site

Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	Ethylbenzene	Isopropylbenzene	Methyl-t-butyl ether	n-Propylbenzene	Toluene	Xylenes
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SB-328(D)	SB-328(D)-10	9/10/2003	10	0.695	3.18	2 U	12.4	0.211 J	0.385 J
SB-328(D)	SB-328(D)-15	9/10/2003	15	0.0515	0.0364	0.2 U	0.153	0.05 U	0.1 U
SB-328(D)	SB-328(D)-2	9/10/2003	2	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-328(D)	SB-328(D)-5	9/10/2003	5	0.0493 J	0.2 U	0.2 U	0.037 J	0.05 U	0.037 J
SB-410(F)	SB-410(F)-2'	3/31/2004	2	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-410(F)	SB-410(F)-4'	3/31/2004	4	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-410(F)	SB-410(F)-9'	3/31/2004	9	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-627(N)	SB-627(N)-2	8/28/2003	2	0.05 U	0.2 U	0.2 U	0.05 U	0.0302 J	0.1 U
SB-629(N)	SB-629(N)-7.5	8/28/2003	7.5	6.1	3.19	2 U	7.18	0.5 U	37.9
SB-632(N)	SB-632(N)-7.5	9/8/2003	7.5	12.4	4.18	2 U	16.6	0.5 U	63.8
SB-721(P)	SB-721(P)-7'	3/31/2004	7	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-834(Q)	SB-834(Q)-2	9/5/2003	2	0.0119 J	0.2 U	0.2 U	0.0129 J	0.05 U	0.1 U
SB-834(Q)	SB-834(Q)-7.5	9/5/2003	7.5	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-835(Q)	SB-835(Q)-2	9/5/2003	2	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-835(Q)	SB-835(Q)-7	9/5/2003	7	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-912(S)	SB-912(S)-2	9/3/2003	2	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-912(S)	SB-912(S)-7	9/3/2003	7	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-913(S)	SB-913(S)-2	9/3/2003	2	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-913(S)	SB-913(S)-7	9/3/2003	7	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-914(S)	SB-914(S)-2	9/3/2003	2	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U
SB-914(S)	SB-914(S)-7.5	9/3/2003	7.5	0.05 U	0.2 U	0.2 U	0.05 U	0.05 U	0.1 U

TABLE 5

SVOCs IN SOIL

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EX-1(S)	Ex-1/S-1	3/30/2004		0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
EX-2(S)	Ex-2/S-1	3/30/2004		0.0134 U	0.0134 U	0.0134 U	0.0076 J	0.00973 J
EX-3(S)	Ex-3/S-1	3/31/2004		0.067 U	0.067 U	0.0202 J	0.0967	0.102
EX-4(S)	Ex-4/S-1	3/29/2004		0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-001(A)	SB-001(A)-7.5	8/27/2003	7.5	0.0134 U	0.0134 U	0.00516 J	0.0134 U	0.0134 U
SB-001(A)	SB-001(A)-7.5	8/27/2003	7.5					
SB-002(A)	SB-002(A)-2.5	8/27/2003	2.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-002(A)	SB-002(A)-2.5	8/27/2003	2.5					
SB-002(A)	SB-002(A)-7.5	8/27/2003	7.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-002(A)	SB-002(A)-7.5	8/27/2003	7.5					
SB-003(A)	SB-003(A)-5	9/4/2003	5	0.0268 U	0.0268 U	0.0268 U	0.0105 J	0.0145 J
SB-005(A)	SB-005(A)-2.5	9/5/2003	2.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-005(A)	SB-005(A)-2.5	9/5/2003	2.5					
SB-005(A)	SB-005(A)-7	9/5/2003	7	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.00469 J
SB-005(A)	SB-005(A)-7	9/5/2003	7					
SB-006(A)	SB-006(A)-7'	3/31/2004	7	2.47	1 U	6.7 U	0.67 U	0.67 U
SB-006(A)	SB-006(A)-7'	3/31/2004	7					
SB-007(A)	SB-007(A)-7.5	8/26/2003	7.5	1.46 J	2.68 U	0.526	0.268 U	0.268 U
SB-007(A)	SB-007(A)-7.5	8/26/2003	7.5					
SB-008(A)	SB-008(A)-2	8/26/2003	2	0.0987 J	0.268 U	0.207 J	2.53	2.59
SB-008(A)	SB-008(A)-2	8/26/2003	2					
SB-008(A)	SB-008(A)-7.5	8/26/2003	7.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-008(A)	SB-008(A)-7.5	8/26/2003	7.5					
SB-009(A)	SB-009(A)-2	8/27/2003	2	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-009(A)	SB-009(A)-2	8/27/2003	2					
SB-009(A)	SB-009(A)-7.5	8/27/2003	7.5	2.68 U	2.68 U	2.17 J	0.268 U	0.268 U
SB-009(A)	SB-009(A)-7.5	8/27/2003	7.5					
SB-010(A)	SB-010(A)-2	8/27/2003	2	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-010(A)	SB-010(A)-2	8/27/2003	2					
SB-010(A)	SB-010(A)-7.5	8/27/2003	7.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-010(A)	SB-010(A)-7.5	8/27/2003	7.5					

TABLE 5

SVOCs IN SOIL

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	Acenaphthene mg/kg	Acenaphthylene mg/kg	Anthracene mg/kg	Benzo(a) anthracene mg/kg	Benzo(a) pyrene mg/kg
SB-011(A)	SB-011(A)-7.5	9/3/2003	7.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-011(A)	SB-011(A)-7.5	9/3/2003	7.5					
SB-013(A)	SB-013(A)-7.5	9/3/2003	7.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-013(A)	SB-013(A)-7.5	9/3/2003	7.5					
SB-015(A)	SB-015(A)-7	9/10/2003	7	0.134 U	0.134 U	0.134 U	0.134 U	0.134 U
SB-015(A)	SB-015(A)-7	9/10/2003	7					
SB-016(A)	SB-016(A)-7	9/4/2003	7	0.0649 J	0.067 U	0.0466 J	0.067 U	0.067 U
SB-017(A)	SB-017(A)-7.5	9/8/2003	7.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-017(A)	SB-017(A)-7.5	9/8/2003	7.5					
SB-019(A)	SB-019(A)-2.5	8/27/2003	2.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-019(A)	SB-019(A)-2.5	8/27/2003	2.5					
SB-019(A)	SB-019(A)-7.5	8/27/2003	7.5	0.449 J	0.67 U	0.22 J	0.67 U	0.67 U
SB-019(A)	SB-019(A)-7.5	8/27/2003	7.5					
SB-020(A)	SB-020(A)-4'	3/31/2004	4	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-020(A)	SB-020(A)-4'	3/31/2004	4					
SB-020(A)	SB-020(A)-9'	3/31/2004	9	0.00651 J	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-020(A)	SB-020(A)-9'	3/31/2004	9					
SB-253(C)	SB-253(C)-2	9/4/2003	2	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-253(C)	SB-253(C)-2	9/4/2003	2					
SB-253(C)	SB-253(C)-7.5	9/4/2003	7.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-253(C)	SB-253(C)-7.5	9/4/2003	7.5					
SB-254(C)	SB-254(C)-2	9/4/2003	2	0.02 J	0.067 U	0.0598 J	0.117	0.167
SB-254(C)	SB-254(C)-2	9/4/2003	2					
SB-254(C)	SB-254(C)-7	9/4/2003	7	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-254(C)	SB-254(C)-7	9/4/2003	7					
SB-255(C)	SB-255(C)-2.5	9/4/2003	2.5	0.357	0.168 U	1.79	0.27	0.118 J
SB-255(C)	SB-255(C)-2.5	9/4/2003	2.5					
SB-255(C)	SB-255(C)-7	9/4/2003	7	7.4	0.953	3.72	4.43	5.84
SB-255(C)	SB-255(C)-7	9/4/2003	7					
SB256(C)	SB256 (c) 6	3/31/2004	6	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB256(C)	SB256 (c) 6	3/31/2004	6					
SB-320(D)	SB-320(D)-2	9/10/2003	2					
SB-320(D)	SB-320(D)-5	9/10/2003	5					
SB-321(D)	SB-321(D)-2	9/9/2003	2					

TABLE 5

SVOCs IN SOIL

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SB-321(D)	SB-321(D)-5	9/9/2003	5					
SB-322(D)	SB-322(D)-2	9/10/2003	2					
SB-322(D)	SB-322(D)-5	9/10/2003	5					
SB-323(D)	SB-323(D)-7	9/10/2003	7	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-323(D)	SB-323(D)-7	9/10/2003	7					
SB-324(D)	SB-324(D)-10	9/10/2003	10					
SB-324(D)	SB-324(D)-15	9/10/2003	15					
SB-324(D)	SB-324(D)-2	9/10/2003	2					
SB-324(D)	SB-324(D)-5	9/10/2003	5					
SB-324(D)	SB-324(D)-DUP	9/10/2003	15					
SB-325(D)	SB-325(D)-10	9/10/2003	10					
SB-325(D)	SB-325(D)-15	9/10/2003	15					
SB-325(D)	SB-325(D)-2	9/10/2003	2					
SB-325(D)	SB-325(D)-5	9/10/2003	5					
SB-325(D)	SB-325(D)-DUP	9/10/2003	2					
SB-326(D)	SB-326(D)-10	9/9/2003	10					
SB-326(D)	SB-326(D)-2	9/9/2003	2					
SB-326(D)	SB-326(D)-5	9/9/2003	5					
SB-327(D)	SB-327(D)-10	9/10/2003	10					
SB-327(D)	SB-327(D)-15	9/10/2003	15					
SB-327(D)	SB-327(D)-2	9/10/2003	2					
SB-327(D)	SB-327(D)-5	9/10/2003	5					
SB-328(D)	SB-328(D)-10	9/10/2003	10					
SB-328(D)	SB-328(D)-15	9/10/2003	15					
SB-328(D)	SB-328(D)-2	9/10/2003	2					
SB-328(D)	SB-328(D)-5	9/10/2003	5					
SB-410(F)	SB-410(F)-2'	3/31/2004	2					
SB-410(F)	SB-410(F)-4'	3/31/2004	4	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-410(F)	SB-410(F)-4'	3/31/2004	4					
SB-410(F)	SB-410(F)-9'	3/31/2004	9					
SB-627(N)	SB-627(N)-2	8/28/2003	2	0.067 U	0.067 U	0.067 U	0.0387 J	0.0577 J
SB-627(N)	SB-627(N)-2	8/28/2003	2					
SB-629(N)	SB-629(N)-7.5	8/28/2003	7.5	3.02 U	1.34 U	1.35	0.67 U	0.67 U
SB-629(N)	SB-629(N)-7.5	8/28/2003	7.5					

TABLE 5

SVOCs IN SOIL

Remedial Investigation/Feasibility Study
 Astoria Area-Wide Petroleum Site
 Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	Acenaphthene mg/kg	Acenaphthylene mg/kg	Anthracene mg/kg	Benzo(a) anthracene mg/kg	Benzo(a) pyrene mg/kg
SB-632(N)	SB-632(N)-7.5	9/8/2003	7.5	0.134 U	0.134 U	0.134 U	0.134 U	0.134 U
SB-632(N)	SB-632(N)-7.5	9/8/2003	7.5					
SB-721(P)	SB-721(P)-7'	3/31/2004	7	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-721(P)	SB-721(P)-7'	3/31/2004	7					
SB-834(Q)	SB-834(Q)-2	9/5/2003	2	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-834(Q)	SB-834(Q)-2	9/5/2003	2					
SB-834(Q)	SB-834(Q)-7.5	9/5/2003	7.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-834(Q)	SB-834(Q)-7.5	9/5/2003	7.5					
SB-835(Q)	SB-835(Q)-2	9/5/2003	2	0.0134 U	0.0134 U	0.0134 U	0.0108 J	0.0169
SB-835(Q)	SB-835(Q)-2	9/5/2003	2					
SB-835(Q)	SB-835(Q)-7	9/5/2003	7	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-835(Q)	SB-835(Q)-7	9/5/2003	7					
SB-912(S)	SB-912(S)-2	9/3/2003	2	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-912(S)	SB-912(S)-2	9/3/2003	2					
SB-912(S)	SB-912(S)-7	9/3/2003	7	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-912(S)	SB-912(S)-7	9/3/2003	7					
SB-913(S)	SB-913(S)-2	9/3/2003	2	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U
SB-913(S)	SB-913(S)-2	9/3/2003	2					
SB-913(S)	SB-913(S)-7	9/3/2003	7	0.335 U	0.335 U	0.335 U	0.335 U	0.335 U
SB-913(S)	SB-913(S)-7	9/3/2003	7					
SB-914(S)	SB-914(S)-2	9/3/2003	2	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-914(S)	SB-914(S)-2	9/3/2003	2					
SB-914(S)	SB-914(S)-7.5	9/3/2003	7.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-914(S)	SB-914(S)-7.5	9/3/2003	7.5					
SB-915(S)	SB-915(s)-5.0	3/31/2004	5	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U

TABLE 5

SVOCs IN SOIL

Remedial Investigation/Feasibility Study
 Astoria Area-Wide Petroleum Site
 Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenzo(a,h) anthracene	Fluoranthene
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EX-1(S)	Ex-1/S-1	3/30/2004		0.0134 U	0.0111	0.0134 U	0.00424	0.0134 U	0.0134 U
EX-2(S)	Ex-2/S-1	3/30/2004		0.00986 J	0.0184	0.00631 J	0.0114 J	0.0134 U	0.00865 J
EX-3(S)	Ex-3/S-1	3/31/2004		0.0941	0.089	0.0592 J	0.106	0.0233 J	0.152
EX-4(S)	Ex-4/S-1	3/29/2004		0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-001(A)	SB-001(A)-7.5	8/27/2003	7.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-001(A)	SB-001(A)-7.5	8/27/2003	7.5						
SB-002(A)	SB-002(A)-2.5	8/27/2003	2.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-002(A)	SB-002(A)-2.5	8/27/2003	2.5						
SB-002(A)	SB-002(A)-7.5	8/27/2003	7.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-002(A)	SB-002(A)-7.5	8/27/2003	7.5						
SB-003(A)	SB-003(A)-5	9/4/2003	5	0.0124 J	0.0299	0.0135 J	0.016 J	0.0268 U	0.0244 J
SB-005(A)	SB-005(A)-2.5	9/5/2003	2.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-005(A)	SB-005(A)-2.5	9/5/2003	2.5						
SB-005(A)	SB-005(A)-7	9/5/2003	7	0.0134 U	0.00558 J	0.0134 U	0.0049 J	0.0134 U	0.00753 J
SB-005(A)	SB-005(A)-7	9/5/2003	7						
SB-006(A)	SB-006(A)-7'	3/31/2004	7	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.273 J
SB-006(A)	SB-006(A)-7'	3/31/2004	7						
SB-007(A)	SB-007(A)-7.5	8/26/2003	7.5	0.268 U	0.268 U	0.268 U	0.0797 J	0.268 U	0.128 J
SB-007(A)	SB-007(A)-7.5	8/26/2003	7.5						
SB-008(A)	SB-008(A)-2	8/26/2003	2	3.14	1.78	1.67	3.05	0.661	3.92
SB-008(A)	SB-008(A)-2	8/26/2003	2						
SB-008(A)	SB-008(A)-7.5	8/26/2003	7.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-008(A)	SB-008(A)-7.5	8/26/2003	7.5						
SB-009(A)	SB-009(A)-2	8/27/2003	2	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-009(A)	SB-009(A)-2	8/27/2003	2						
SB-009(A)	SB-009(A)-7.5	8/27/2003	7.5	0.268 U	0.268 U	0.268 U	0.0798 J	0.268 U	2.68 U
SB-009(A)	SB-009(A)-7.5	8/27/2003	7.5						
SB-010(A)	SB-010(A)-2	8/27/2003	2	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-010(A)	SB-010(A)-2	8/27/2003	2						
SB-010(A)	SB-010(A)-7.5	8/27/2003	7.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-010(A)	SB-010(A)-7.5	8/27/2003	7.5						

TABLE 5

SVOCs IN SOIL

Remedial Investigation/Feasibility Study
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Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenzo(a,h) anthracene	Fluoranthene
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SB-011(A)	SB-011(A)-7.5	9/3/2003	7.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-011(A)	SB-011(A)-7.5	9/3/2003	7.5						
SB-013(A)	SB-013(A)-7.5	9/3/2003	7.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-013(A)	SB-013(A)-7.5	9/3/2003	7.5						
SB-015(A)	SB-015(A)-7	9/10/2003	7	0.134 U	0.134 U	0.134 U	0.134 U	0.134 U	0.134 U
SB-015(A)	SB-015(A)-7	9/10/2003	7						
SB-016(A)	SB-016(A)-7	9/4/2003	7	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U
SB-017(A)	SB-017(A)-7.5	9/8/2003	7.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-017(A)	SB-017(A)-7.5	9/8/2003	7.5						
SB-019(A)	SB-019(A)-2.5	8/27/2003	2.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-019(A)	SB-019(A)-2.5	8/27/2003	2.5						
SB-019(A)	SB-019(A)-7.5	8/27/2003	7.5	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U
SB-019(A)	SB-019(A)-7.5	8/27/2003	7.5						
SB-020(A)	SB-020(A)-4'	3/31/2004	4	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-020(A)	SB-020(A)-4'	3/31/2004	4						
SB-020(A)	SB-020(A)-9'	3/31/2004	9	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0201 U
SB-020(A)	SB-020(A)-9'	3/31/2004	9						
SB-253(C)	SB-253(C)-2	9/4/2003	2	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-253(C)	SB-253(C)-2	9/4/2003	2						
SB-253(C)	SB-253(C)-7.5	9/4/2003	7.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-253(C)	SB-253(C)-7.5	9/4/2003	7.5						
SB-254(C)	SB-254(C)-2	9/4/2003	2	0.249	0.158	0.067 U	0.199	0.0439 J	0.215
SB-254(C)	SB-254(C)-2	9/4/2003	2						
SB-254(C)	SB-254(C)-7	9/4/2003	7	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-254(C)	SB-254(C)-7	9/4/2003	7						
SB-255(C)	SB-255(C)-2.5	9/4/2003	2.5	0.151 J	0.0893 J	0.151 J	0.434	0.168 U	0.843
SB-255(C)	SB-255(C)-2.5	9/4/2003	2.5						
SB-255(C)	SB-255(C)-7	9/4/2003	7	3.48	6.39	3.54	5.39	0.694	24.5
SB-255(C)	SB-255(C)-7	9/4/2003	7						
SB256(C)	SB256 (c) 6	3/31/2004	6	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB256(C)	SB256 (c) 6	3/31/2004	6						
SB-320(D)	SB-320(D)-2	9/10/2003	2						
SB-320(D)	SB-320(D)-5	9/10/2003	5						
SB-321(D)	SB-321(D)-2	9/9/2003	2						

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Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenzo(a,h) anthracene	Fluoranthene
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SB-321(D)	SB-321(D)-5	9/9/2003	5						
SB-322(D)	SB-322(D)-2	9/10/2003	2						
SB-322(D)	SB-322(D)-5	9/10/2003	5						
SB-323(D)	SB-323(D)-7	9/10/2003	7	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-323(D)	SB-323(D)-7	9/10/2003	7						
SB-324(D)	SB-324(D)-10	9/10/2003	10						
SB-324(D)	SB-324(D)-15	9/10/2003	15						
SB-324(D)	SB-324(D)-2	9/10/2003	2						
SB-324(D)	SB-324(D)-5	9/10/2003	5						
SB-324(D)	SB-324(D)-DUP	9/10/2003	15						
SB-325(D)	SB-325(D)-10	9/10/2003	10						
SB-325(D)	SB-325(D)-15	9/10/2003	15						
SB-325(D)	SB-325(D)-2	9/10/2003	2						
SB-325(D)	SB-325(D)-5	9/10/2003	5						
SB-325(D)	SB-325(D)-DUP	9/10/2003	2						
SB-326(D)	SB-326(D)-10	9/9/2003	10						
SB-326(D)	SB-326(D)-2	9/9/2003	2						
SB-326(D)	SB-326(D)-5	9/9/2003	5						
SB-327(D)	SB-327(D)-10	9/10/2003	10						
SB-327(D)	SB-327(D)-15	9/10/2003	15						
SB-327(D)	SB-327(D)-2	9/10/2003	2						
SB-327(D)	SB-327(D)-5	9/10/2003	5						
SB-328(D)	SB-328(D)-10	9/10/2003	10						
SB-328(D)	SB-328(D)-15	9/10/2003	15						
SB-328(D)	SB-328(D)-2	9/10/2003	2						
SB-328(D)	SB-328(D)-5	9/10/2003	5						
SB-410(F)	SB-410(F)-2'	3/31/2004	2						
SB-410(F)	SB-410(F)-4'	3/31/2004	4	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-410(F)	SB-410(F)-4'	3/31/2004	4						
SB-410(F)	SB-410(F)-9'	3/31/2004	9						
SB-627(N)	SB-627(N)-2	8/28/2003	2	0.0759	0.119	0.0433 J	0.0629 J	0.0227 J	0.0526 J
SB-627(N)	SB-627(N)-2	8/28/2003	2						
SB-629(N)	SB-629(N)-7.5	8/28/2003	7.5	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U
SB-629(N)	SB-629(N)-7.5	8/28/2003	7.5						

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Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenzo(a,h) anthracene	Fluoranthene
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SB-632(N)	SB-632(N)-7.5	9/8/2003	7.5	0.134 U	0.134 U	0.134 U	0.134 U	0.134 U	0.134 U
SB-632(N)	SB-632(N)-7.5	9/8/2003	7.5						
SB-721(P)	SB-721(P)-7'	3/31/2004	7	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-721(P)	SB-721(P)-7'	3/31/2004	7						
SB-834(Q)	SB-834(Q)-2	9/5/2003	2	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-834(Q)	SB-834(Q)-2	9/5/2003	2						
SB-834(Q)	SB-834(Q)-7.5	9/5/2003	7.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-834(Q)	SB-834(Q)-7.5	9/5/2003	7.5						
SB-835(Q)	SB-835(Q)-2	9/5/2003	2	0.0205	0.0232	0.0162	0.0244	0.00498 J	0.0229
SB-835(Q)	SB-835(Q)-2	9/5/2003	2						
SB-835(Q)	SB-835(Q)-7	9/5/2003	7	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-835(Q)	SB-835(Q)-7	9/5/2003	7						
SB-912(S)	SB-912(S)-2	9/3/2003	2	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-912(S)	SB-912(S)-2	9/3/2003	2						
SB-912(S)	SB-912(S)-7	9/3/2003	7	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-912(S)	SB-912(S)-7	9/3/2003	7						
SB-913(S)	SB-913(S)-2	9/3/2003	2	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U	0.67 U
SB-913(S)	SB-913(S)-2	9/3/2003	2						
SB-913(S)	SB-913(S)-7	9/3/2003	7	0.335 U	0.335 U	0.335 U	0.335 U	0.335 U	0.335 U
SB-913(S)	SB-913(S)-7	9/3/2003	7						
SB-914(S)	SB-914(S)-2	9/3/2003	2	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-914(S)	SB-914(S)-2	9/3/2003	2						
SB-914(S)	SB-914(S)-7.5	9/3/2003	7.5	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-914(S)	SB-914(S)-7.5	9/3/2003	7.5						
SB-915(S)	SB-915(s)-5.0	3/31/2004	5	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U

TABLE 5

SVOCs IN SOIL

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	Fluorene mg/kg	Indeno(1,2,3- cd)pyrene mg/kg	Naphthalene mg/kg	Phenanthrene mg/kg	Pyrene mg/kg
EX-1(S)	Ex-1/S-1	3/30/2004		0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.00563 J
EX-2(S)	Ex-2/S-1	3/30/2004		0.0134 U	0.0083 J	0.0352	0.0134 U	0.0162
EX-3(S)	Ex-3/S-1	3/31/2004		0.067 U	0.0629 J	0.067 U	0.0862	0.194
EX-4(S)	Ex-4/S-1	3/29/2004		0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-001(A)	SB-001(A)-7.5	8/27/2003	7.5	0.0134 U	0.0134 U	0.2 U	0.0134 U	0.0134 U
SB-001(A)	SB-001(A)-7.5	8/27/2003	7.5			0.0134 U		
SB-002(A)	SB-002(A)-2.5	8/27/2003	2.5	0.0134 U	0.0134 U	0.2 U	0.0134 U	0.0134 U
SB-002(A)	SB-002(A)-2.5	8/27/2003	2.5			0.0134 U		
SB-002(A)	SB-002(A)-7.5	8/27/2003	7.5	0.0134 U	0.0134 U	0.0287 J	0.0134 U	0.0134 U
SB-002(A)	SB-002(A)-7.5	8/27/2003	7.5			0.0134 U		
SB-003(A)	SB-003(A)-5	9/4/2003	5	0.0268 U	0.0182 J	0.00983 J	0.0175 J	0.031
SB-005(A)	SB-005(A)-2.5	9/5/2003	2.5	0.0134 U	0.0134 U	0.2 U	0.0134 U	0.0134 U
SB-005(A)	SB-005(A)-2.5	9/5/2003	2.5			0.0134 U		
SB-005(A)	SB-005(A)-7	9/5/2003	7	0.0134 U	0.00376 J	0.0167 J	0.0134 U	0.00871 J
SB-005(A)	SB-005(A)-7	9/5/2003	7			0.0134 U		
SB-006(A)	SB-006(A)-7'	3/31/2004	7	6.7	0.67 U	38	12.5	1.09
SB-006(A)	SB-006(A)-7'	3/31/2004	7			61.2		
SB-007(A)	SB-007(A)-7.5	8/26/2003	7.5	3.22	0.268 U	53.4	5.25	0.388
SB-007(A)	SB-007(A)-7.5	8/26/2003	7.5			44.9		
SB-008(A)	SB-008(A)-2	8/26/2003	2	0.268 U	1.64	0.2 U	1.05	3.58
SB-008(A)	SB-008(A)-2	8/26/2003	2			0.268 U		
SB-008(A)	SB-008(A)-7.5	8/26/2003	7.5	0.0134 U	0.0134 U	0.2 U	0.0134 U	0.0134 U
SB-008(A)	SB-008(A)-7.5	8/26/2003	7.5			0.0134 U		
SB-009(A)	SB-009(A)-2	8/27/2003	2	0.0134 U	0.0134 U	0.208	0.0134 U	0.0134 U
SB-009(A)	SB-009(A)-2	8/27/2003	2			0.0134 U		
SB-009(A)	SB-009(A)-7.5	8/27/2003	7.5	7.8	0.268 U	11.3	16.4	0.969
SB-009(A)	SB-009(A)-7.5	8/27/2003	7.5			10.5		
SB-010(A)	SB-010(A)-2	8/27/2003	2	0.0134 U	0.0134 U	0.262	0.0134 U	0.0134 U
SB-010(A)	SB-010(A)-2	8/27/2003	2			0.0134 U		
SB-010(A)	SB-010(A)-7.5	8/27/2003	7.5	0.0134 U	0.0134 U	0.0438 J	0.0134 U	0.0134 U
SB-010(A)	SB-010(A)-7.5	8/27/2003	7.5			0.0134 U		

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Remedial Investigation/Feasibility Study
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Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	Fluorene mg/kg	Indeno(1,2,3- cd)pyrene mg/kg	Naphthalene mg/kg	Phenanthrene mg/kg	Pyrene mg/kg
SB-011(A)	SB-011(A)-7.5	9/3/2003	7.5	0.0134 U	0.0134 U	0.2 U	0.0134 U	0.0134 U
SB-011(A)	SB-011(A)-7.5	9/3/2003	7.5			0.0134 U		
SB-013(A)	SB-013(A)-7.5	9/3/2003	7.5	0.0134 U	0.0134 U	0.2 U	0.0134 U	0.0134 U
SB-013(A)	SB-013(A)-7.5	9/3/2003	7.5			0.0134 U		
SB-015(A)	SB-015(A)-7	9/10/2003	7	0.134 U	0.134 U	7.06	0.134 U	0.134 U
SB-015(A)	SB-015(A)-7	9/10/2003	7			15.7		
SB-016(A)	SB-016(A)-7	9/4/2003	7	0.151	0.067 U	0.552	0.346	0.067 U
SB-017(A)	SB-017(A)-7.5	9/8/2003	7.5	0.0134 U	0.0134 U	0.2 U	0.0134 U	0.0134 U
SB-017(A)	SB-017(A)-7.5	9/8/2003	7.5			0.00659 J		
SB-019(A)	SB-019(A)-2.5	8/27/2003	2.5	0.0134 U	0.0134 U	0.2 U	0.0134 U	0.0134 U
SB-019(A)	SB-019(A)-2.5	8/27/2003	2.5			0.0134 U		
SB-019(A)	SB-019(A)-7.5	8/27/2003	7.5	0.823	0.67 U	85.3	2.33	0.336 J
SB-019(A)	SB-019(A)-7.5	8/27/2003	7.5			35.6		
SB-020(A)	SB-020(A)-4'	3/31/2004	4	0.0134 U	0.0134 U	0.2 U	0.0134 U	0.0134 U
SB-020(A)	SB-020(A)-4'	3/31/2004	4			0.0134 U		
SB-020(A)	SB-020(A)-9'	3/31/2004	9	0.0134 U	0.0134 U	0.2 U	0.0343	0.00823 J
SB-020(A)	SB-020(A)-9'	3/31/2004	9			0.00541 J		
SB-253(C)	SB-253(C)-2	9/4/2003	2	0.0134 U	0.0134 U	0.2 U	0.0134 U	0.0134 U
SB-253(C)	SB-253(C)-2	9/4/2003	2			0.0134 U		
SB-253(C)	SB-253(C)-7.5	9/4/2003	7.5	0.0134 U	0.0134 U	0.2 U	0.0134 U	0.0134 U
SB-253(C)	SB-253(C)-7.5	9/4/2003	7.5			0.0134 U		
SB-254(C)	SB-254(C)-2	9/4/2003	2	0.0267 J	0.1	0.0255 J	0.172	0.263
SB-254(C)	SB-254(C)-2	9/4/2003	2			0.067 U		
SB-254(C)	SB-254(C)-7	9/4/2003	7	0.0134 U	0.0134 U	0.2 U	0.0134 U	0.0134 U
SB-254(C)	SB-254(C)-7	9/4/2003	7			0.0134 U		
SB-255(C)	SB-255(C)-2.5	9/4/2003	2.5	0.52	0.0623 J	0.0621 J	0.996	0.776
SB-255(C)	SB-255(C)-2.5	9/4/2003	2.5			0.0147 J		
SB-255(C)	SB-255(C)-7	9/4/2003	7	8.15	4.23	4.23	35.8	24.4
SB-255(C)	SB-255(C)-7	9/4/2003	7			10.2		
SB256(C)	SB256 (c) 6	3/31/2004	6	0.0134 U	0.0134 U	0.2 U	0.0134 U	0.0134 U
SB256(C)	SB256 (c) 6	3/31/2004	6			0.0134 U		
SB-320(D)	SB-320(D)-2	9/10/2003	2			0.0204		
SB-320(D)	SB-320(D)-5	9/10/2003	5			0.2 U		
SB-321(D)	SB-321(D)-2	9/9/2003	2			0.2 U		

TABLE 5

SVOCs IN SOIL

Remedial Investigation/Feasibility Study
 Astoria Area-Wide Petroleum Site
 Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	Fluorene mg/kg	Indeno(1,2,3- cd)pyrene mg/kg	Naphthalene mg/kg	Phenanthrene mg/kg	Pyrene mg/kg
SB-321(D)	SB-321(D)-5	9/9/2003	5			0.285		
SB-322(D)	SB-322(D)-2	9/10/2003	2			0.2 U		
SB-322(D)	SB-322(D)-5	9/10/2003	5			0.0273		
SB-323(D)	SB-323(D)-7	9/10/2003	7	0.0134 U	0.0134 U	0.0134 U	0.0134 U	0.0134 U
SB-323(D)	SB-323(D)-7	9/10/2003	7			0.2 U		
SB-324(D)	SB-324(D)-10	9/10/2003	10			0.791		
SB-324(D)	SB-324(D)-15	9/10/2003	15			0.413		
SB-324(D)	SB-324(D)-2	9/10/2003	2			0.218		
SB-324(D)	SB-324(D)-5	9/10/2003	5			0.0299		
SB-324(D)	SB-324(D)-DUP	9/10/2003	15			2.59		
SB-325(D)	SB-325(D)-10	9/10/2003	10			0.0141		
SB-325(D)	SB-325(D)-15	9/10/2003	15			0.2 U		
SB-325(D)	SB-325(D)-2	9/10/2003	2			0.2 U		
SB-325(D)	SB-325(D)-5	9/10/2003	5			0.2 U		
SB-325(D)	SB-325(D)-DUP	9/10/2003	2			0.2 U		
SB-326(D)	SB-326(D)-10	9/9/2003	10			1.32		
SB-326(D)	SB-326(D)-2	9/9/2003	2			0.0344		
SB-326(D)	SB-326(D)-5	9/9/2003	5			1.24		
SB-327(D)	SB-327(D)-10	9/10/2003	10			2.85		
SB-327(D)	SB-327(D)-15	9/10/2003	15			4.19		
SB-327(D)	SB-327(D)-2	9/10/2003	2			0.0329 J		
SB-327(D)	SB-327(D)-5	9/10/2003	5			0.2 U		
SB-328(D)	SB-328(D)-10	9/10/2003	10			9.58		
SB-328(D)	SB-328(D)-15	9/10/2003	15			0.11		
SB-328(D)	SB-328(D)-2	9/10/2003	2			0.031 J		
SB-328(D)	SB-328(D)-5	9/10/2003	5			0.0234 J		
SB-410(F)	SB-410(F)-2'	3/31/2004	2			0.023 J		
SB-410(F)	SB-410(F)-4'	3/31/2004	4	0.0134 U	0.0134 U	0.2 U	0.0134 U	0.0134 U
SB-410(F)	SB-410(F)-4'	3/31/2004	4			0.0134 U		
SB-410(F)	SB-410(F)-9'	3/31/2004	9			0.2 U		
SB-627(N)	SB-627(N)-2	8/28/2003	2	0.067 U	0.0743	0.0335 J	0.0385 J	0.074
SB-627(N)	SB-627(N)-2	8/28/2003	2			0.0291 J		
SB-629(N)	SB-629(N)-7.5	8/28/2003	7.5	7.06	0.67 U	25.5	13	0.671
SB-629(N)	SB-629(N)-7.5	8/28/2003	7.5			25.5		

TABLE 5

SVOCs IN SOIL

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	Fluorene mg/kg	Indeno(1,2,3- cd)pyrene mg/kg	Naphthalene mg/kg	Phenanthrene mg/kg	Pyrene mg/kg
SB-632(N)	SB-632(N)-7.5	9/8/2003	7.5	0.0589 J	0.134 U	38.9	0.0714 J	0.134 U
SB-632(N)	SB-632(N)-7.5	9/8/2003	7.5			36.6		
SB-721(P)	SB-721(P)-7'	3/31/2004	7	0.0134 U	0.0134 U	0.2 U	0.0134 U	0.0134 U
SB-721(P)	SB-721(P)-7'	3/31/2004	7			0.0134 U		
SB-834(Q)	SB-834(Q)-2	9/5/2003	2	0.0134 U	0.0134 U	0.0808 J	0.0134 U	0.0134 U
SB-834(Q)	SB-834(Q)-2	9/5/2003	2			0.0134 U		
SB-834(Q)	SB-834(Q)-7.5	9/5/2003	7.5	0.0134 U	0.0134 U	0.127 J	0.0134 U	0.0134 U
SB-834(Q)	SB-834(Q)-7.5	9/5/2003	7.5			0.0134 U		
SB-835(Q)	SB-835(Q)-2	9/5/2003	2	0.0134 U	0.0149	0.0134 U	0.0117 J	0.0244
SB-835(Q)	SB-835(Q)-2	9/5/2003	2			0.2 U		
SB-835(Q)	SB-835(Q)-7	9/5/2003	7	0.0134 U	0.0134 U	0.2 U	0.0134 U	0.0134 U
SB-835(Q)	SB-835(Q)-7	9/5/2003	7			0.0134 U		
SB-912(S)	SB-912(S)-2	9/3/2003	2	0.0134 U	0.0134 U	0.2 U	0.0134 U	0.0134 U
SB-912(S)	SB-912(S)-2	9/3/2003	2			0.0134 U		
SB-912(S)	SB-912(S)-7	9/3/2003	7	0.0134 U	0.0134 U	0.2 U	0.0134 U	0.0134 U
SB-912(S)	SB-912(S)-7	9/3/2003	7			0.0134 U		
SB-913(S)	SB-913(S)-2	9/3/2003	2	0.67 U	0.67 U	0.2 U	0.67 U	0.67 U
SB-913(S)	SB-913(S)-2	9/3/2003	2			0.67 U		
SB-913(S)	SB-913(S)-7	9/3/2003	7	0.335 U	0.335 U	0.2 U	0.335 U	0.335 U
SB-913(S)	SB-913(S)-7	9/3/2003	7			0.335 U		
SB-914(S)	SB-914(S)-2	9/3/2003	2	0.0134 U	0.0134 U	0.2 U	0.0134 U	0.0134 U
SB-914(S)	SB-914(S)-2	9/3/2003	2			0.0134 U		
SB-914(S)	SB-914(S)-7.5	9/3/2003	7.5	0.0134 U	0.0134 U	0.2 U	0.0134 U	0.0134 U
SB-914(S)	SB-914(S)-7.5	9/3/2003	7.5			0.0134 U		
SB-915(S)	SB-915(s)-5.0	3/31/2004	5	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U

TABLE 6

METALS IN SOIL

Remedial Investigation/Feasibility Study
 Astoria Area-Wide Petroleum Site
 Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	Arsenic, Total mg/kg	Barium mg/kg	Cadmium mg/kg	Chromium mg/kg	Lead mg/kg
SB-001(A)	SB-001(A)-7.5	8/27/2003	7.5					8.43
SB-002(A)	SB-002(A)-2.5	8/27/2003	2.5					2.51
SB-002(A)	SB-002(A)-7.5	8/27/2003	7.5					2.72
SB-005(A)	SB-005(A)-2.5	9/5/2003	2.5					6.56
SB-005(A)	SB-005(A)-7	9/5/2003	7					3.24
SB-006(A)	SB-006(A)-7'	3/31/2004	7					2.34
SB-007(A)	SB-007(A)-7.5	8/26/2003	7.5					4.51
SB-008(A)	SB-008(A)-2	8/26/2003	2					7.09
SB-008(A)	SB-008(A)-7.5	8/26/2003	7.5					4.24
SB-009(A)	SB-009(A)-2	8/27/2003	2					4.66
SB-009(A)	SB-009(A)-7.5	8/27/2003	7.5					3.27
SB-010(A)	SB-010(A)-2	8/27/2003	2					2.76
SB-010(A)	SB-010(A)-7.5	8/27/2003	7.5					2.86
SB-011(A)	SB-011(A)-7.5	9/3/2003	7.5					3.31
SB-019(A)	SB-019(A)-2.5	8/27/2003	2.5					2.62
SB-019(A)	SB-019(A)-7.5	8/27/2003	7.5					7.44
SB-020(A)	SB-020(A)-4'	3/31/2004	4					4.59
SB-020(A)	SB-020(A)-9'	3/31/2004	9					2.48
SB-253(C)	SB-253(C)-2	9/4/2003	2					2.55
SB-253(C)	SB-253(C)-7.5	9/4/2003	7.5					3.73
SB-254(C)	SB-254(C)-2	9/4/2003	2					34.1
SB-254(C)	SB-254(C)-7	9/4/2003	7					31.5
SB-255(C)	SB-255(C)-2.5	9/4/2003	2.5					38.8
SB-255(C)	SB-255(C)-7	9/4/2003	7					107
SB256(C)	SB256 (c) 6	3/31/2004	6	2.19	37.5	0.403 U	6.81	2.68
SB257(C)	SB257 (c) 8	3/31/2004	8				3.48	
SB258(C)	SB258 (c) 8.5	3/31/2004	8.5				16.3	

TABLE 6**METALS IN SOIL**

Remedial Investigation/Feasibility Study
 Astoria Area-Wide Petroleum Site
 Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	Arsenic, Total mg/kg	Barium mg/kg	Cadmium mg/kg	Chromium mg/kg	Lead mg/kg
SB259(C)	SB259 (c) 8.5	3/31/2004	8.5				12.9	
SB-410(F)	SB-410(F)-4'	3/31/2004	4					1.66
SB-410(F)	SB-410(F)-9'	3/31/2004	9					5.42
SB-627(N)	SB-627(N)-2	8/28/2003	2					31.4
SB-629(N)	SB-629(N)-7.5	8/28/2003	7.5					2.49
SB-632(N)	SB-632(N)-7.5	9/8/2003	7.5					27.7
SB-721(P)	SB-721(P)-3'	3/31/2004	3					13
SB-721(P)	SB-721(P)-7'	3/31/2004	7					5.36
SB-834(Q)	SB-834(Q)-2	9/5/2003	2					3.21
SB-834(Q)	SB-834(Q)-7.5	9/5/2003	7.5					3.63
SB-835(Q)	SB-835(Q)-2	9/5/2003	2					17.9
SB-835(Q)	SB-835(Q)-7	9/5/2003	7					2.49

TABLE 6**METALS IN SOIL**

Remedial Investigation/Feasibility Study
 Astoria Area-Wide Petroleum Site
 Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	Mercury	Selenium	Silver
				mg/kg	mg/kg	mg/kg
SB-001(A)	SB-001(A)-7.5	8/27/2003	7.5			
SB-002(A)	SB-002(A)-2.5	8/27/2003	2.5			
SB-002(A)	SB-002(A)-7.5	8/27/2003	7.5			
SB-005(A)	SB-005(A)-2.5	9/5/2003	2.5			
SB-005(A)	SB-005(A)-7	9/5/2003	7			
SB-006(A)	SB-006(A)-7'	3/31/2004	7			
SB-007(A)	SB-007(A)-7.5	8/26/2003	7.5			
SB-008(A)	SB-008(A)-2	8/26/2003	2			
SB-008(A)	SB-008(A)-7.5	8/26/2003	7.5			
SB-009(A)	SB-009(A)-2	8/27/2003	2			
SB-009(A)	SB-009(A)-7.5	8/27/2003	7.5			
SB-010(A)	SB-010(A)-2	8/27/2003	2			
SB-010(A)	SB-010(A)-7.5	8/27/2003	7.5			
SB-011(A)	SB-011(A)-7.5	9/3/2003	7.5			
SB-019(A)	SB-019(A)-2.5	8/27/2003	2.5			
SB-019(A)	SB-019(A)-7.5	8/27/2003	7.5			
SB-020(A)	SB-020(A)-4'	3/31/2004	4			
SB-020(A)	SB-020(A)-9'	3/31/2004	9			
SB-253(C)	SB-253(C)-2	9/4/2003	2			
SB-253(C)	SB-253(C)-7.5	9/4/2003	7.5			
SB-254(C)	SB-254(C)-2	9/4/2003	2			
SB-254(C)	SB-254(C)-7	9/4/2003	7			
SB-255(C)	SB-255(C)-2.5	9/4/2003	2.5			
SB-255(C)	SB-255(C)-7	9/4/2003	7			
SB256(C)	SB256 (c) 6	3/31/2004	6	0.0714 U	0.403 U	0.403 U
SB257(C)	SB257 (c) 8	3/31/2004	8			
SB258(C)	SB258 (c) 8.5	3/31/2004	8.5			

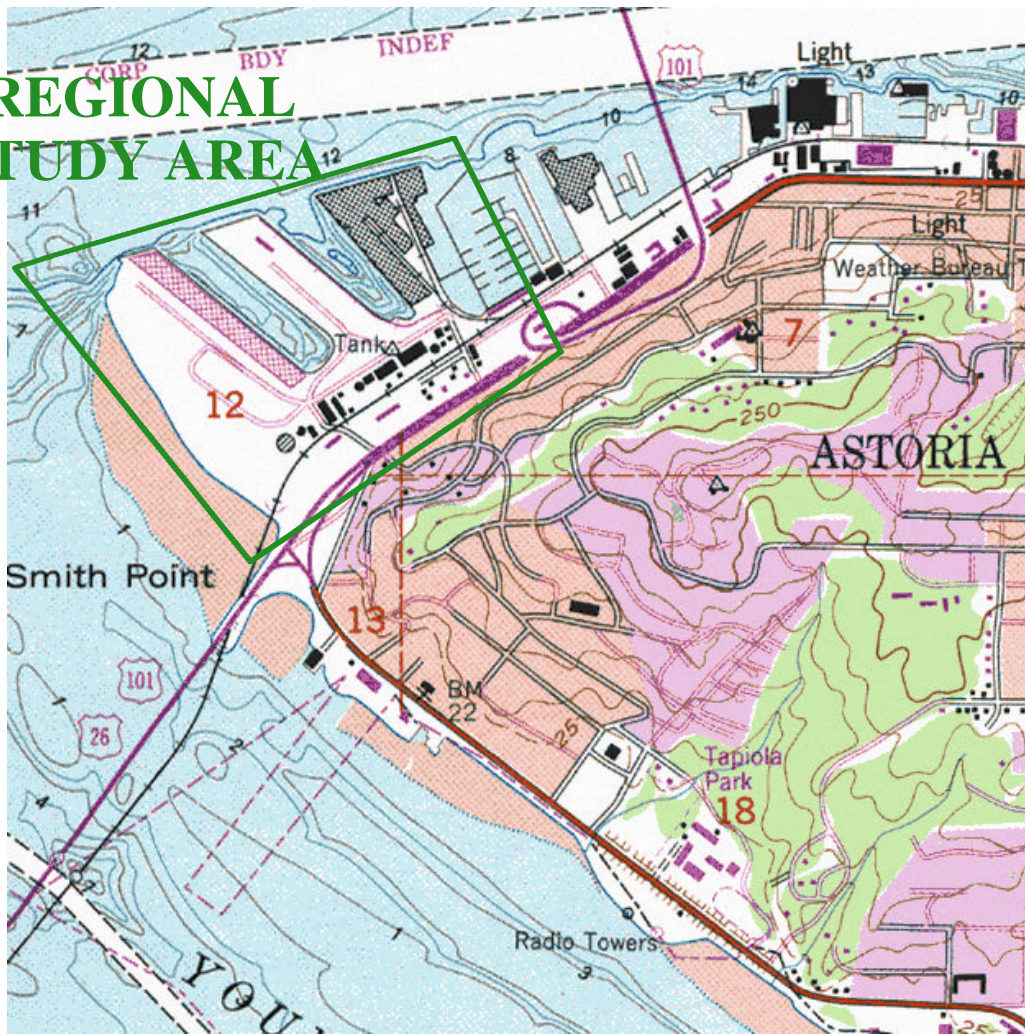
TABLE 6**METALS IN SOIL**

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

Locator ID	Sample ID	Sample Date	Depth	Mercury	Selenium	Silver
				mg/kg	mg/kg	mg/kg
SB259(C)	SB259 (c) 8.5	3/31/2004	8.5			
SB-410(F)	SB-410(F)-4'	3/31/2004	4			
SB-410(F)	SB-410(F)-9'	3/31/2004	9			
SB-627(N)	SB-627(N)-2	8/28/2003	2			
SB-629(N)	SB-629(N)-7.5	8/28/2003	7.5			
SB-632(N)	SB-632(N)-7.5	9/8/2003	7.5			
SB-721(P)	SB-721(P)-3'	3/31/2004	3			
SB-721(P)	SB-721(P)-7'	3/31/2004	7			
SB-834(Q)	SB-834(Q)-2	9/5/2003	2			
SB-834(Q)	SB-834(Q)-7.5	9/5/2003	7.5			
SB-835(Q)	SB-835(Q)-2	9/5/2003	2			
SB-835(Q)	SB-835(Q)-7	9/5/2003	7			

FIGURES

REGIONAL STUDY AREA



(from USGS, Astoria {1984}, OR 7.5' Quadrangles)

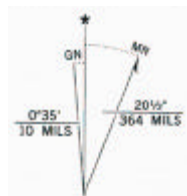
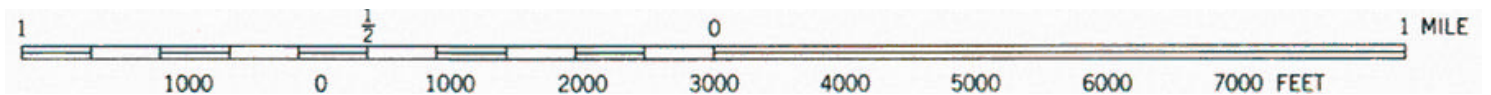


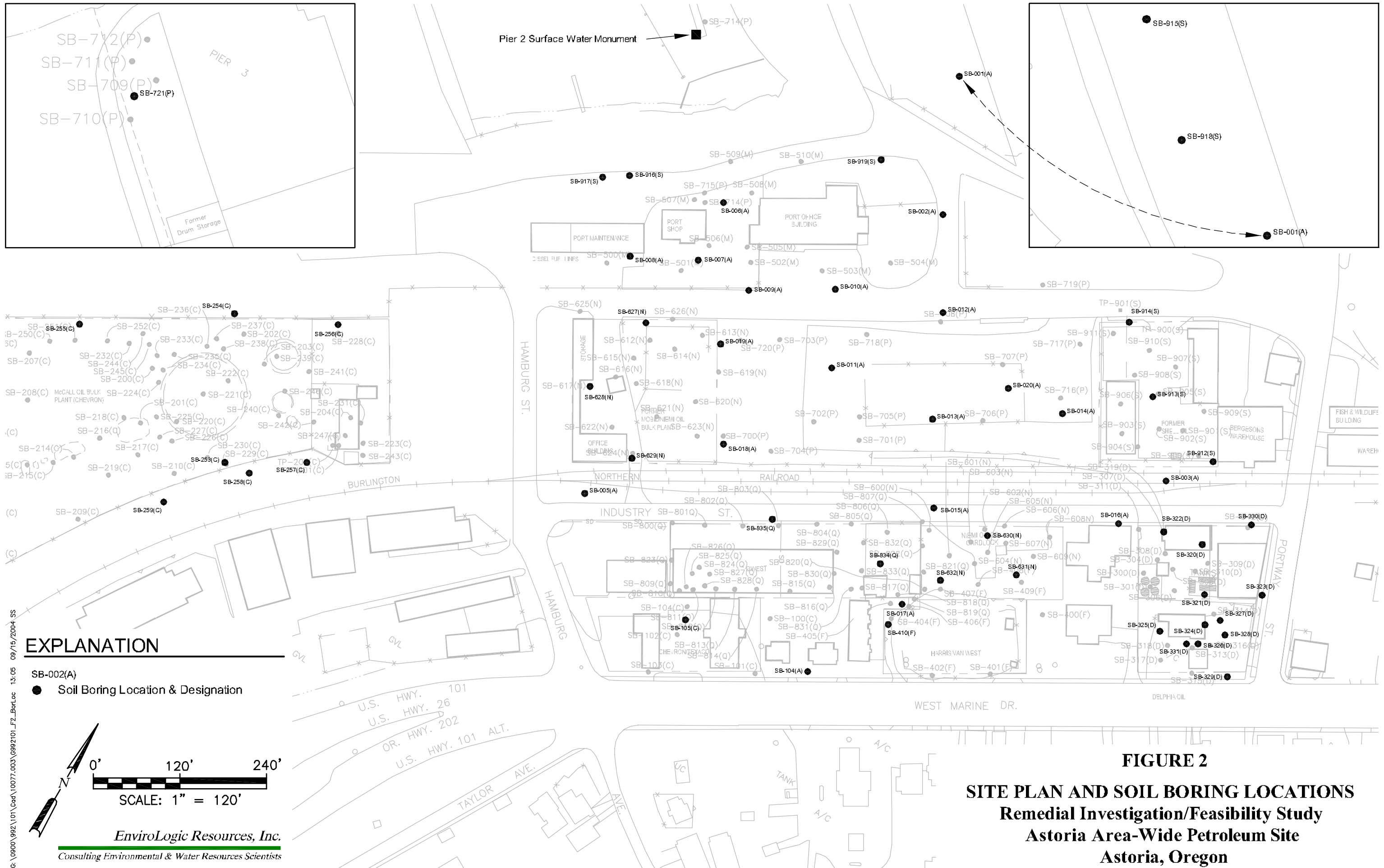
FIGURE 1

SITE LOCATION

**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

EnviroLogic Resources, Inc.

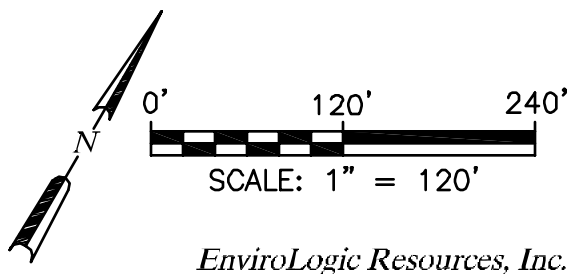
Consulting Environmental & Water Resources Scientists



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EXPLANATION

- SB-002(A)
- Soil Boring Location & Designation



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FIGURE 2
SITE PLAN AND SOIL BORING LOCATIONS
Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon



FIGURE 3
TPH-GX IN SOIL (mg/kg) - PHASE 2
Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

EXPLANATION

- SB-002(A) Soil Boring Location & Designation
- ← 6.23 @ 6' Gas (TPH-GX) (ND = Not Detected)

U.S. HWY. 101
 U.S. HWY. 26
 OR. HWY. 202
 U.S. HWY. 101 ALT.

TAYLOR AVE.

0' 120' 240'
 SCALE: 1" = 120'

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G:\0900\992\101\Gad\10077.003\6992101_LF3_Gas 10/21/2004 SS

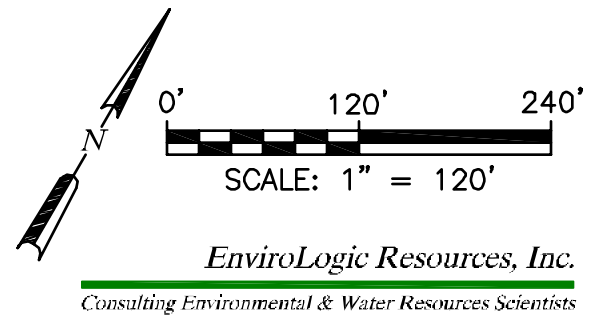


FIGURE 4
TPH-DX IN SOIL (mg/kg) - PHASE 2
Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

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EXPLANATION

- SB-002(A) Soil Boring Location & Designation
- 48.2 @ 2' ← Diesel (TPH-DX) (ND = Not Detected)



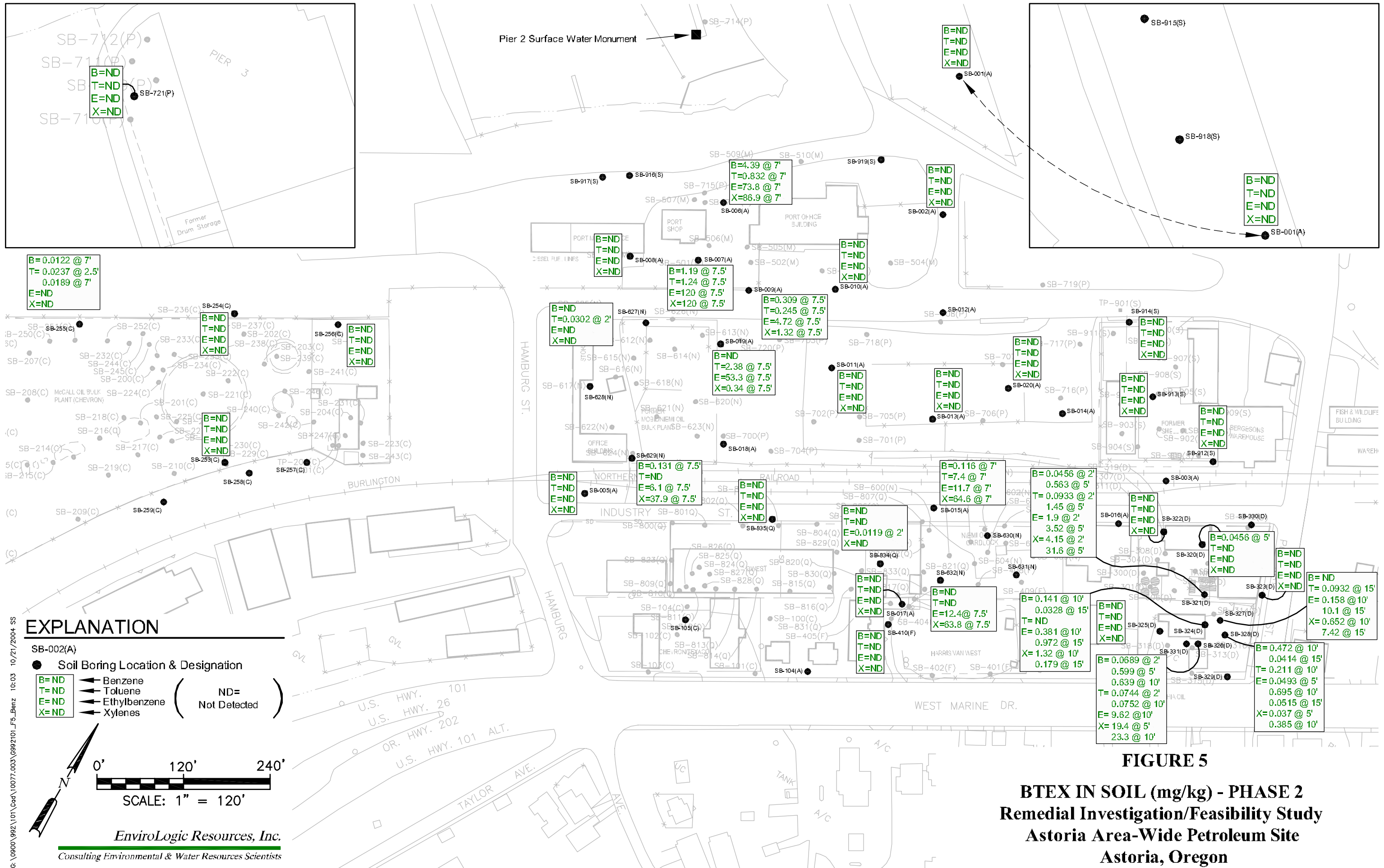


FIGURE 5
BTEX IN SOIL (mg/kg) - PHASE 2
Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

EXPLANATION

- SB-002(A) Soil Boring Location & Designation
- | | | |
|------|----------------|----------------------|
| B=ND | ← Benzene | (ND= Not Detected) |
| T=ND | ← Toluene | |
| E=ND | ← Ethylbenzene | |
| X=ND | ← Xylenes | |

0' 120' 240'
 SCALE: 1" = 120'

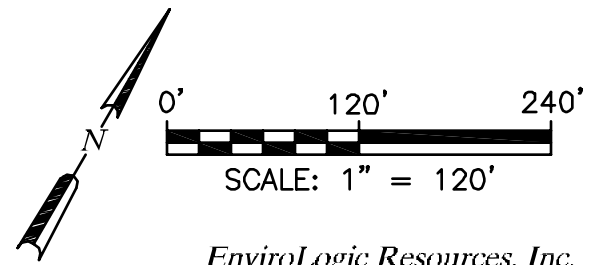
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EXPLANATION

- Soil Boring Location & Designation
- 6.23 @ 6' ← Naphthalene (ND = Not Detected)



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FIGURE 6

**NAPHTHALENE IN SOIL (mg/kg) - PHASE 2
 Remedial Investigation/Feasibility Study
 Astoria Area-Wide Petroleum Site
 Astoria, Oregon**

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APPENDIX A

BORING LOGS

PROJECT	Astoria Area-Wide Petroleum Site	TOTAL DEPTH	10 feet
LOCATION	Astoria, Oregon	SURFACE ELEVATION	
JOB NUMBER	10077.003	REFERENCE POINT ELEVATION	
LOGGED BY	Melanie Bocianowski	REFERENCE POINT DESCRIPTION	
DRILLING METHOD	Geoprobe	DATUM	
DRILLING COMPANY	Geo-Tech Explorations, Inc.	DATE STARTED	03/31/2004

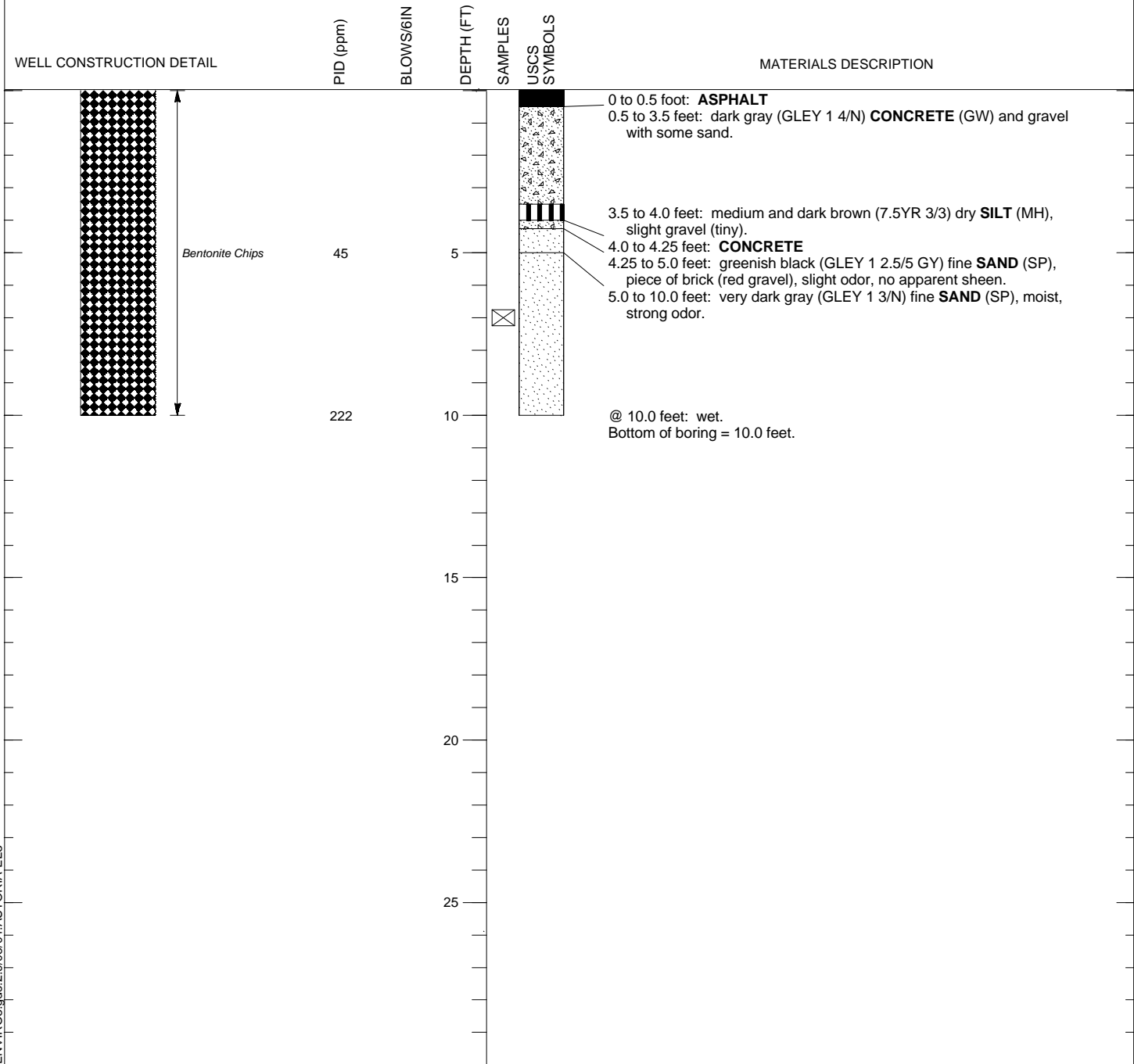
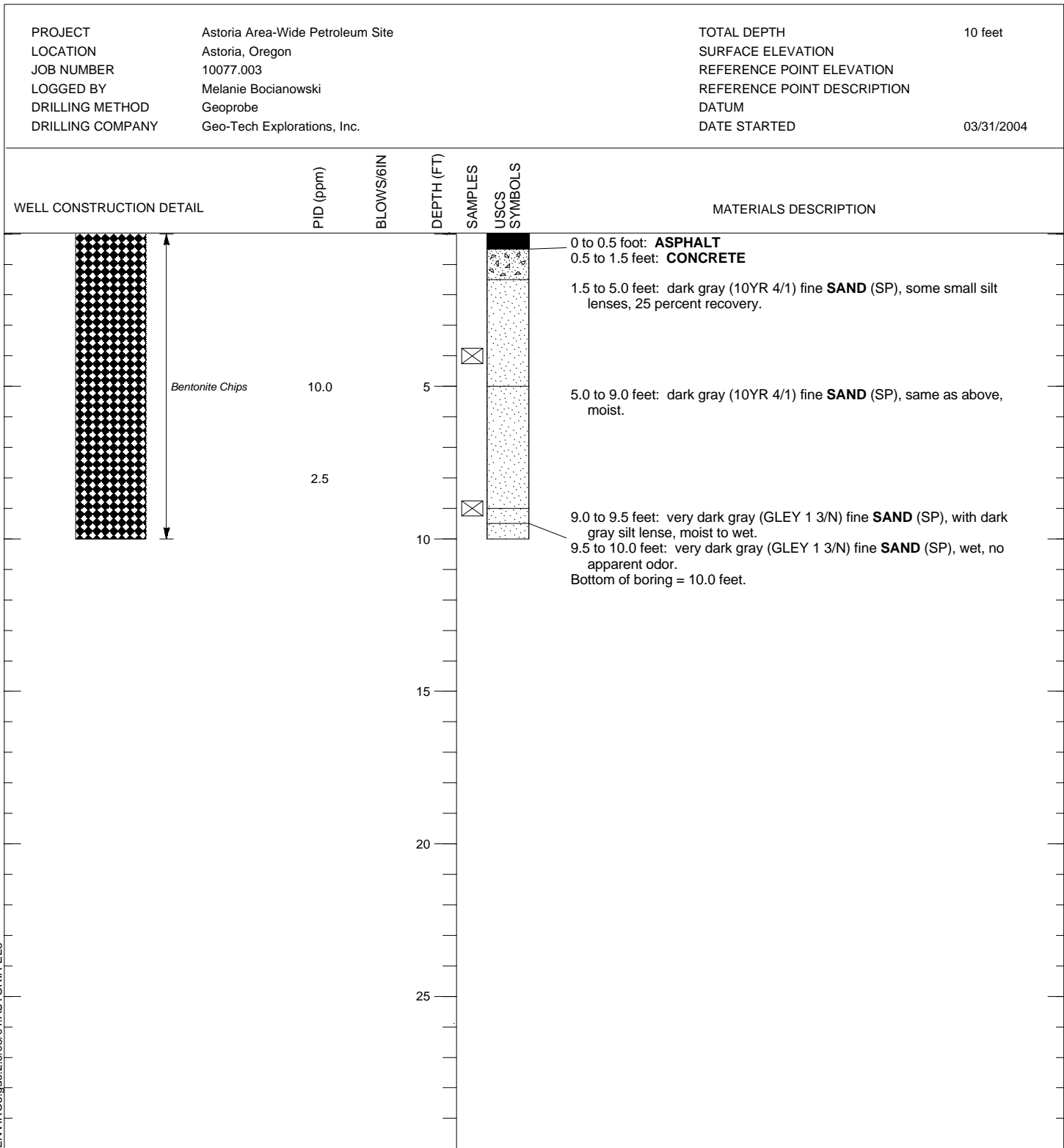


FIGURE A-1
LOG OF
SOIL BORING SB-006(A)

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon



ENVIRO3.gds:2.9/03/04.ASTORIA-EL3

FIGURE A-2
LOG OF
SOIL BORING SB-020(A)

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

PROJECT	Astoria Area-Wide Petroleum Site	TOTAL DEPTH	10 feet
LOCATION	Astoria, Oregon	SURFACE ELEVATION	
JOB NUMBER	10077.003	REFERENCE POINT ELEVATION	
LOGGED BY	Melanie Bocianowski	REFERENCE POINT DESCRIPTION	
DRILLING METHOD	Geoprobe	DATUM	
DRILLING COMPANY	Geo-Tech Explorations, Inc.	DATE STARTED	03/31/2004

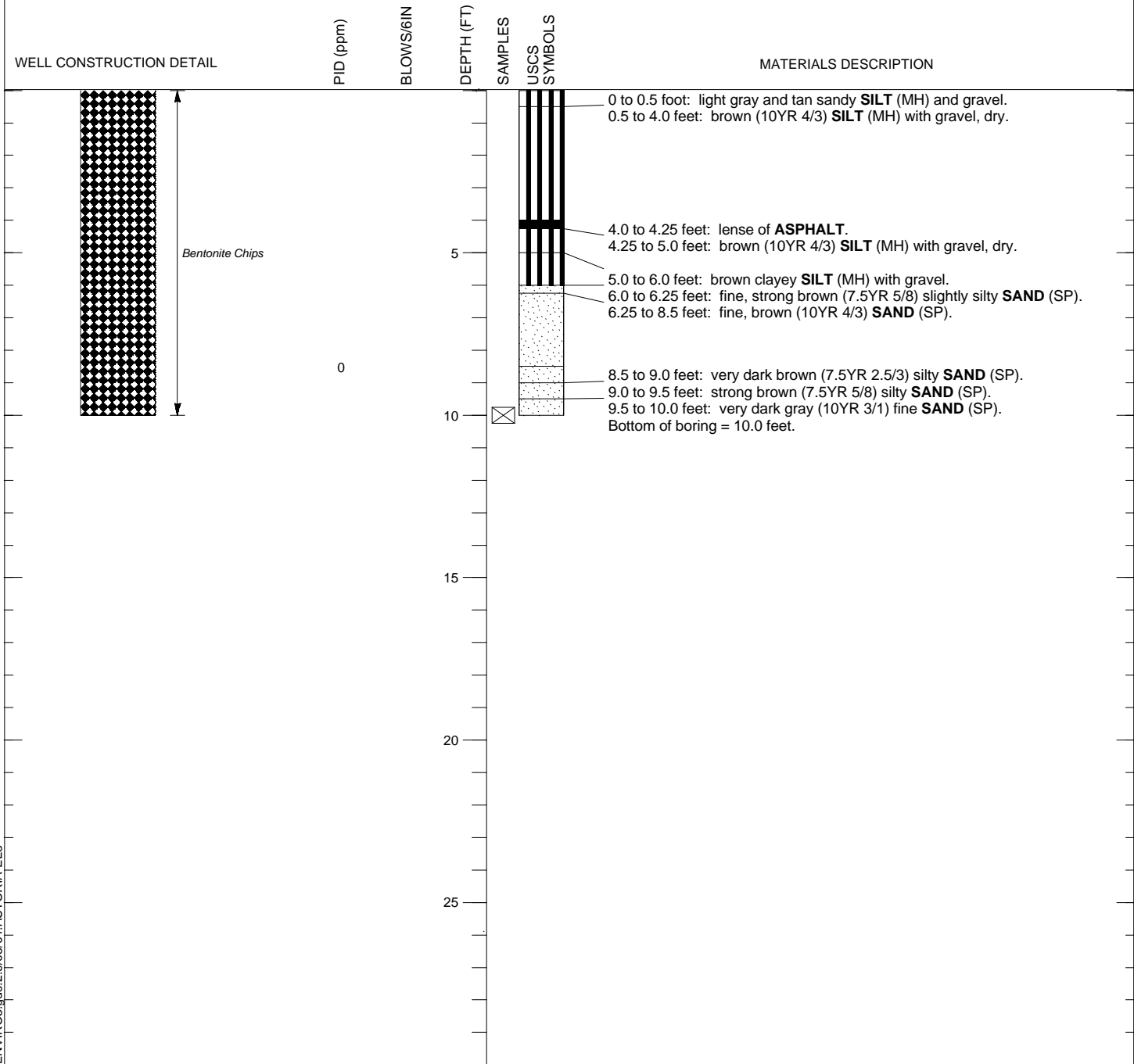


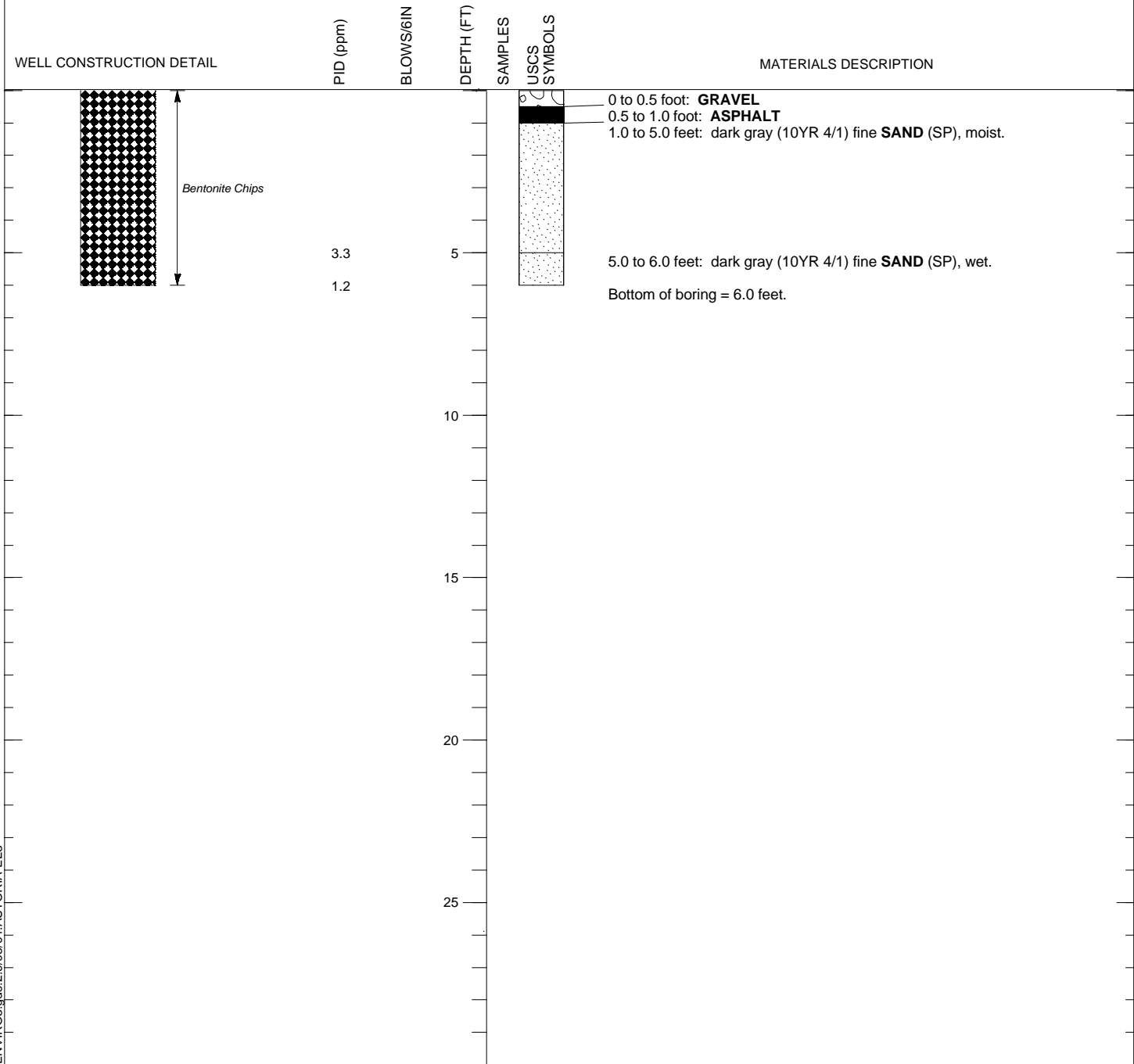
FIGURE A-3
LOG OF
SOIL BORING SB-105(C)

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

EnviroLogic Resources, Inc.

Consulting Environmental & Water Resources Scientists

PROJECT	Astoria Area-Wide Petroleum Site	TOTAL DEPTH	6 feet
LOCATION	Astoria, Oregon	SURFACE ELEVATION	
JOB NUMBER	10077.003	REFERENCE POINT ELEVATION	
LOGGED BY	Melanie Bocianowski	REFERENCE POINT DESCRIPTION	
DRILLING METHOD	Geoprobe	DATUM	
DRILLING COMPANY	Geo-Tech Explorations, Inc.	DATE STARTED	03/31/2004



ENVIRO3.gds:2.9/03/04.ASTORIA-EL3

FIGURE A-4
LOG OF
SOIL BORING SB-256(C)

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

PROJECT	Astoria Area-Wide Petroleum Site	TOTAL DEPTH	15 feet
LOCATION	Astoria, Oregon	SURFACE ELEVATION	
JOB NUMBER	10077.003	REFERENCE POINT ELEVATION	
LOGGED BY	Melanie Bocianowski	REFERENCE POINT DESCRIPTION	
DRILLING METHOD	Geoprobe	DATUM	
DRILLING COMPANY	Geo-Tech Explorations, Inc.	DATE STARTED	03/31/2004

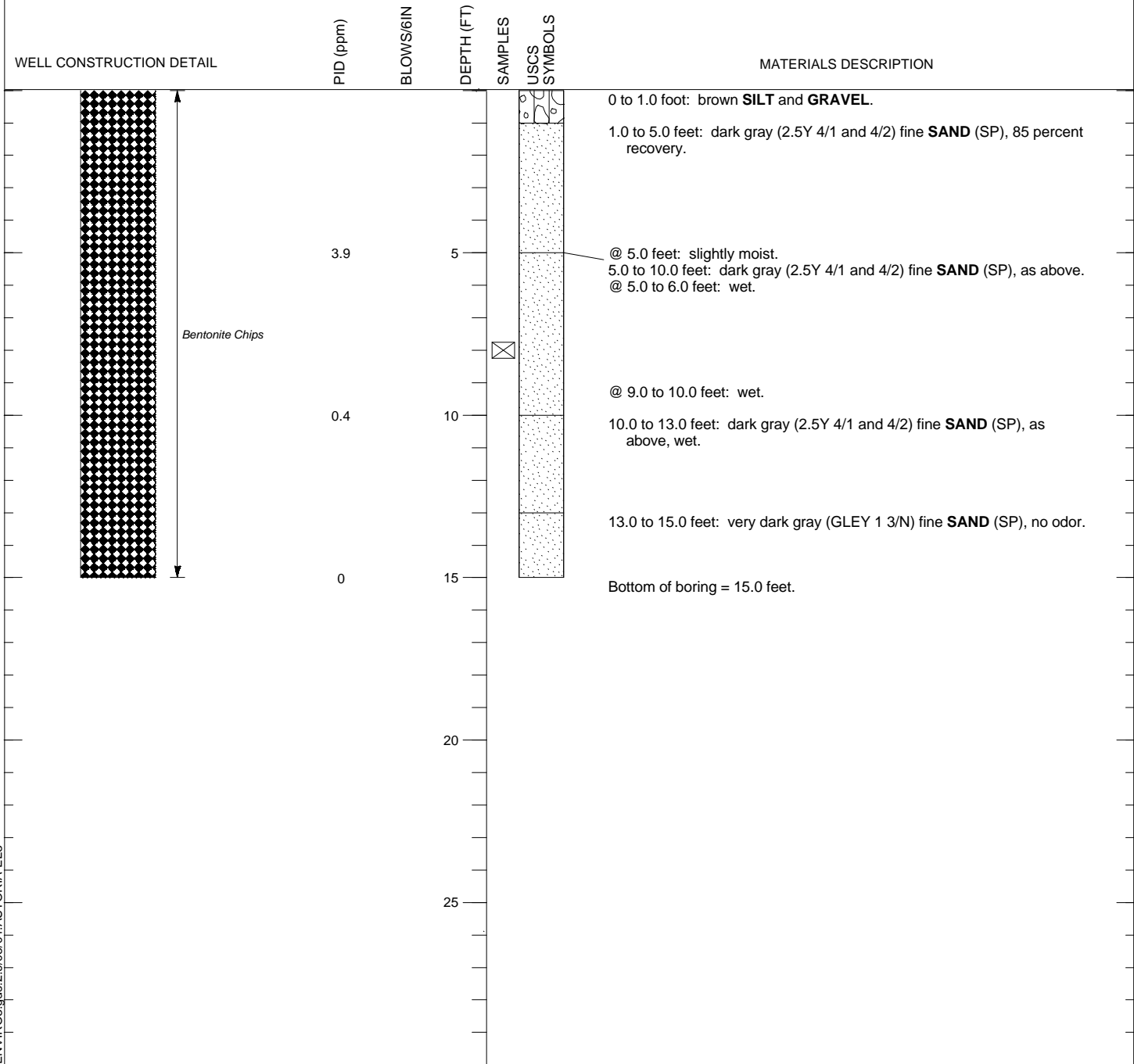
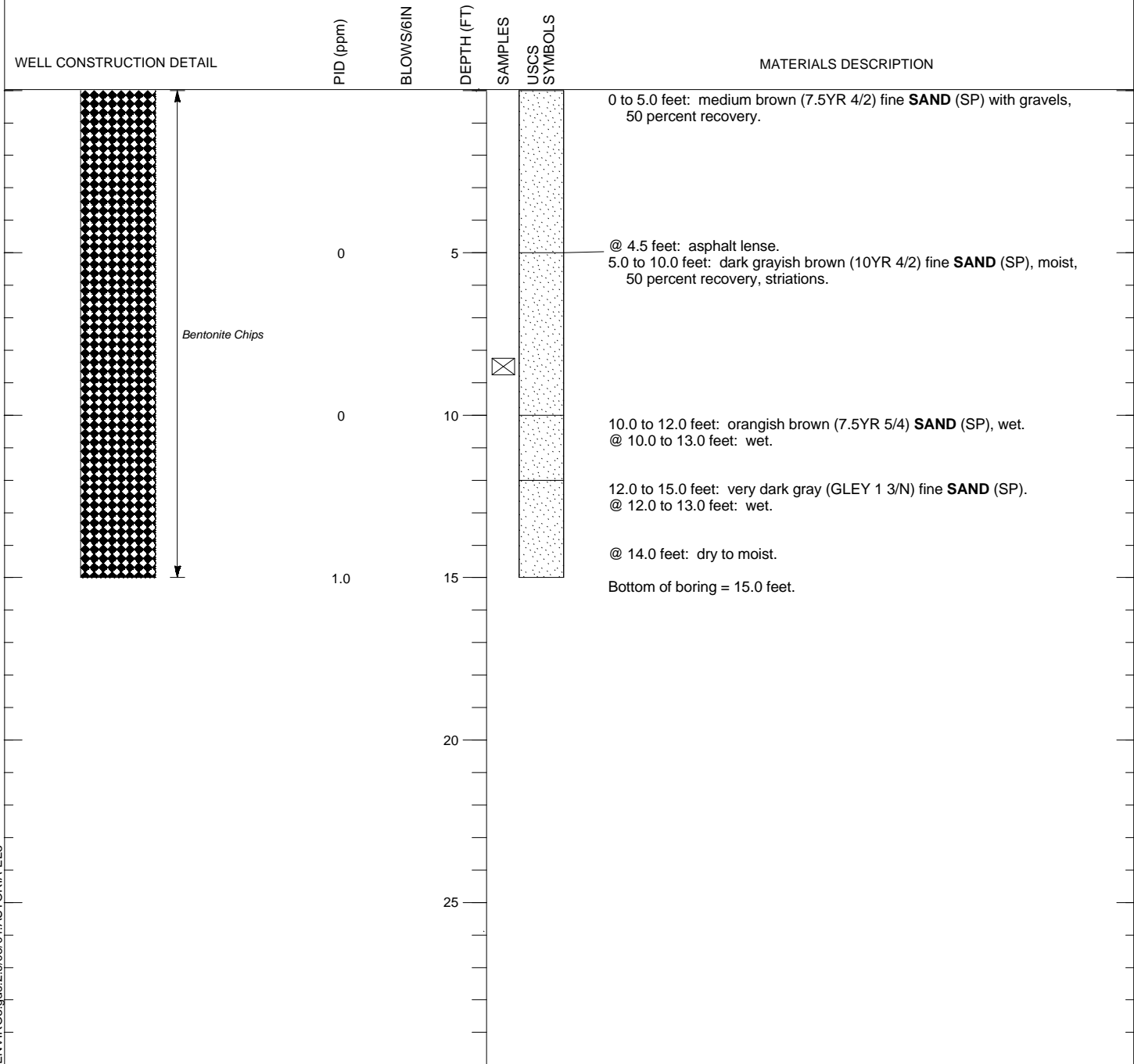


FIGURE A-5
LOG OF
SOIL BORING SB-257(C)

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

PROJECT	Astoria Area-Wide Petroleum Site	TOTAL DEPTH	15 feet
LOCATION	Astoria, Oregon	SURFACE ELEVATION	
JOB NUMBER	10077.003	REFERENCE POINT ELEVATION	
LOGGED BY	Melanie Bocianowski	REFERENCE POINT DESCRIPTION	
DRILLING METHOD	Geoprobe	DATUM	
DRILLING COMPANY	Geo-Tech Explorations, Inc.	DATE STARTED	03/31/2004

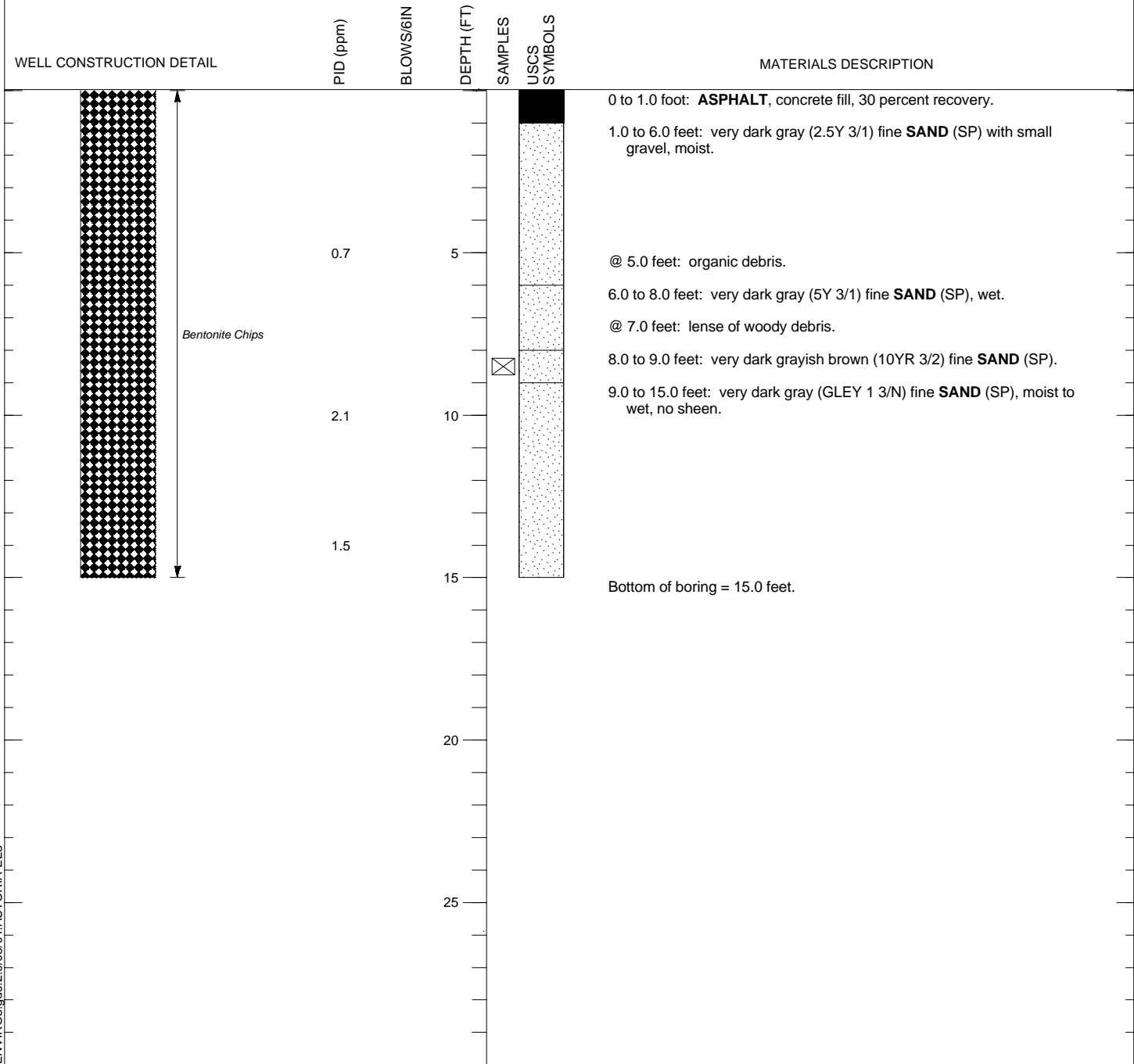


ENVIRO3.gds:2.9/03/04.ASTORIA-EL3

FIGURE A-6
LOG OF
SOIL BORING SB-258(C)

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

PROJECT	Astoria Area-Wide Petroleum Site	TOTAL DEPTH	15 feet
LOCATION	Astoria, Oregon	SURFACE ELEVATION	
JOB NUMBER	10077.003	REFERENCE POINT ELEVATION	
LOGGED BY	Melanie Bocianowski	REFERENCE POINT DESCRIPTION	
DRILLING METHOD	Geoprobe	DATUM	
DRILLING COMPANY	Geo-Tech Explorations, Inc.	DATE STARTED	03/31/2004

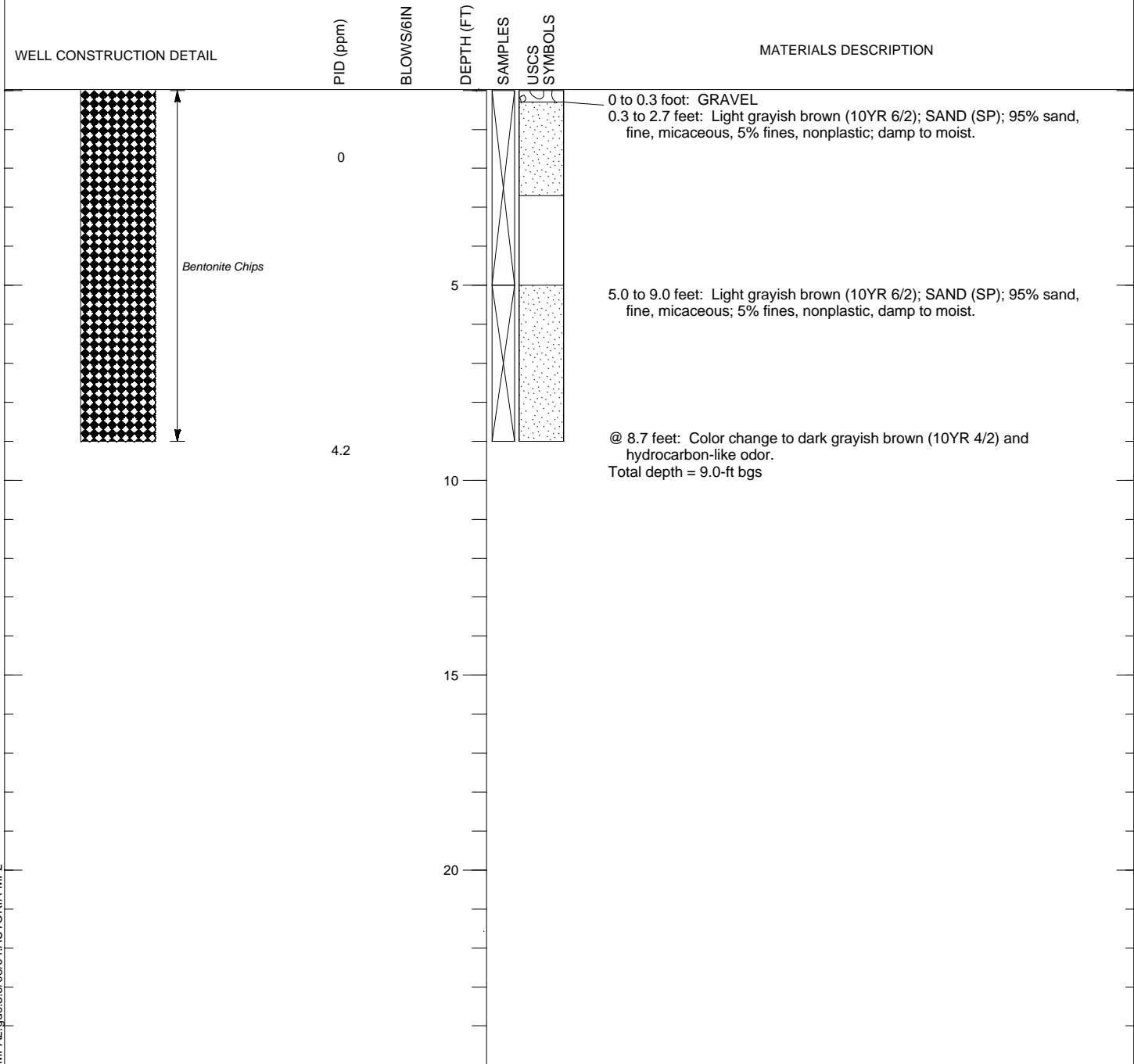


ENVIRO3.gds:2.9/03/04.ASTORIA-EL3

FIGURE A-7
LOG OF
SOIL BORING SB-259(C)

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

PROJECT	Astoria Area-Wide Petroleum Site	TOTAL DEPTH	9 feet
LOCATION	Delphia Oil	SURFACE ELEVATION	
JOB NUMBER	0019.01.01	REFERENCE POINT ELEVATION	
LOGGED BY	A. Bharwada	REFERENCE POINT DESCRIPTION	
DRILLING METHOD	GeoProbe	DATUM	
DRILLING COMPANY	Geo-Tech Explorations, Inc.	DATE STARTED	9/10/03



MF\2.gds:3:9/03/04.ASTORIA-MF2

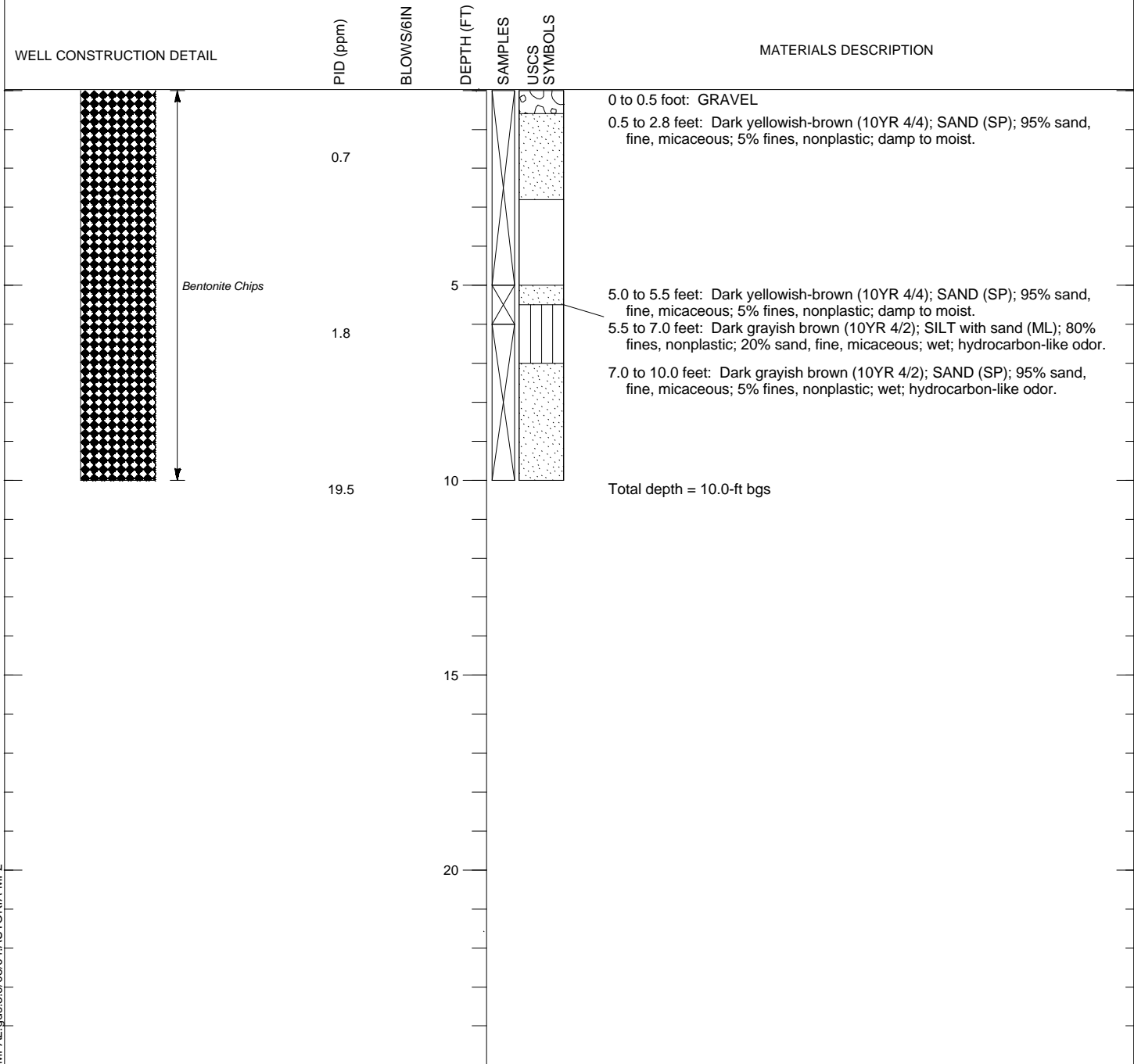
FIGURE A-8

**LOG OF
SB-320(D)**

**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**



PROJECT	Astoria Area-Wide Petroleum Site	TOTAL DEPTH	10 feet
LOCATION	Delphia Oil	SURFACE ELEVATION	
JOB NUMBER	0019.01.01	REFERENCE POINT ELEVATION	
LOGGED BY	A. Bharwada	REFERENCE POINT DESCRIPTION	
DRILLING METHOD	GeoProbe	DATUM	
DRILLING COMPANY	Geo-Tech Explorations, Inc.	DATE STARTED	9/10/03



MF2.gds:3/03/04.ASTORIA-MF2

FIGURE A-9

**LOG OF
SB-322(D)**

**Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**



PROJECT	Astoria Area-Wide Petroleum Site	TOTAL DEPTH	18 feet
LOCATION	Delphia Oil	SURFACE ELEVATION	
JOB NUMBER	0019.01.01	REFERENCE POINT ELEVATION	
LOGGED BY	A. Bharwada	REFERENCE POINT DESCRIPTION	
DRILLING METHOD	GeoProbe	DATUM	
DRILLING COMPANY	Geo-Tech Explorations, Inc.	DATE STARTED	9/10/03

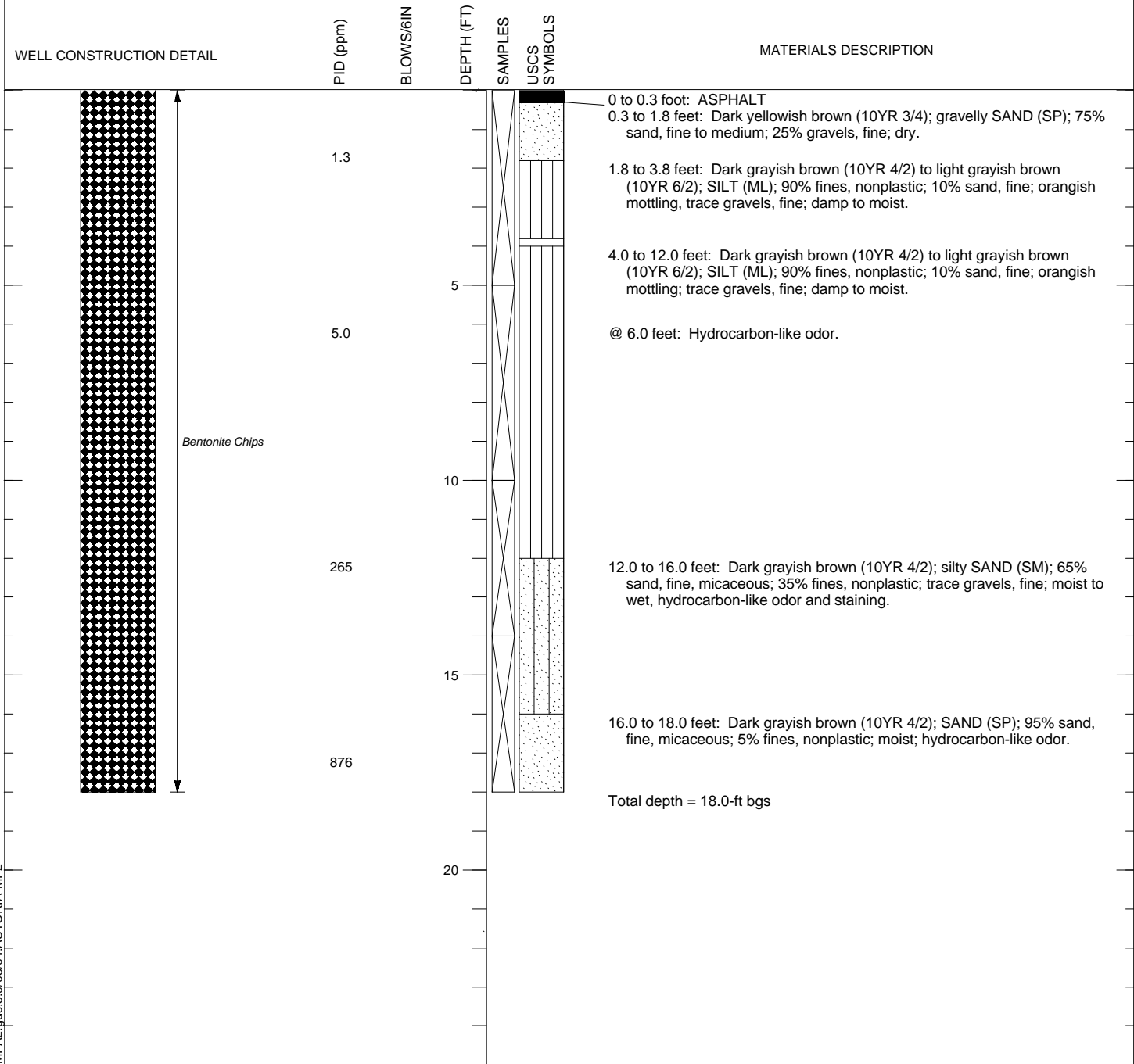


FIGURE A-10

LOG OF
SB-324(D)

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon



PROJECT	Astoria Area-Wide Petroleum Site	TOTAL DEPTH	24 feet
LOCATION	Delphia Oil	SURFACE ELEVATION	
JOB NUMBER	0019.01.01	REFERENCE POINT ELEVATION	
LOGGED BY	A. Bharwada	REFERENCE POINT DESCRIPTION	
DRILLING METHOD	GeoProbe	DATUM	
DRILLING COMPANY	Geo-Tech Explorations, Inc.	DATE STARTED	9/10/03

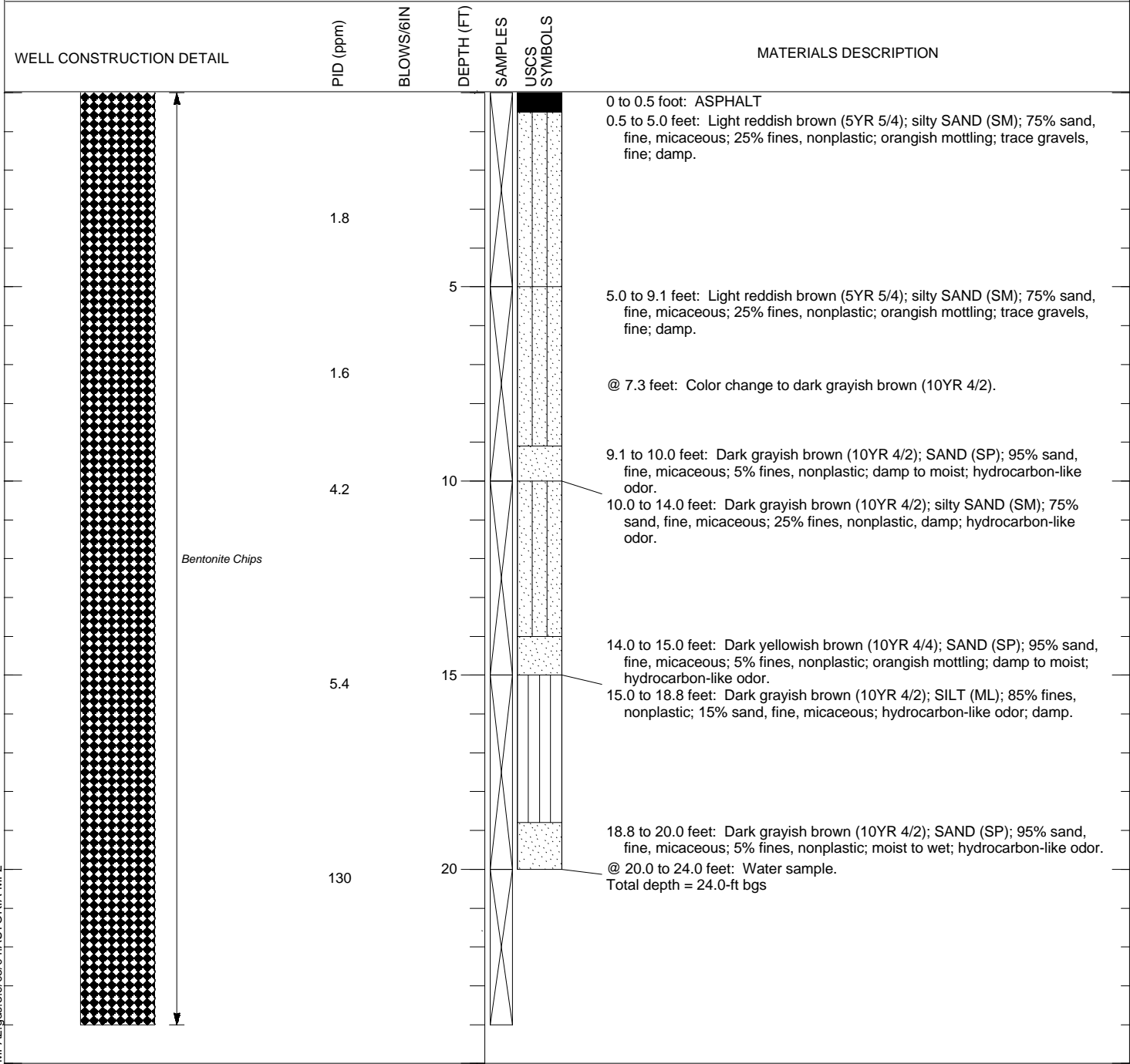


FIGURE A-11

LOG OF
SB-325(D)

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon



PROJECT	Astoria Area-Wide Petroleum Site	TOTAL DEPTH	16 feet
LOCATION	Delphia Oil	SURFACE ELEVATION	
JOB NUMBER	0019.01.01	REFERENCE POINT ELEVATION	
LOGGED BY	A. Bharwada	REFERENCE POINT DESCRIPTION	
DRILLING METHOD	GeoProbe	DATUM	
DRILLING COMPANY	Geo-Tech Explorations, Inc.	DATE STARTED	9/10/03

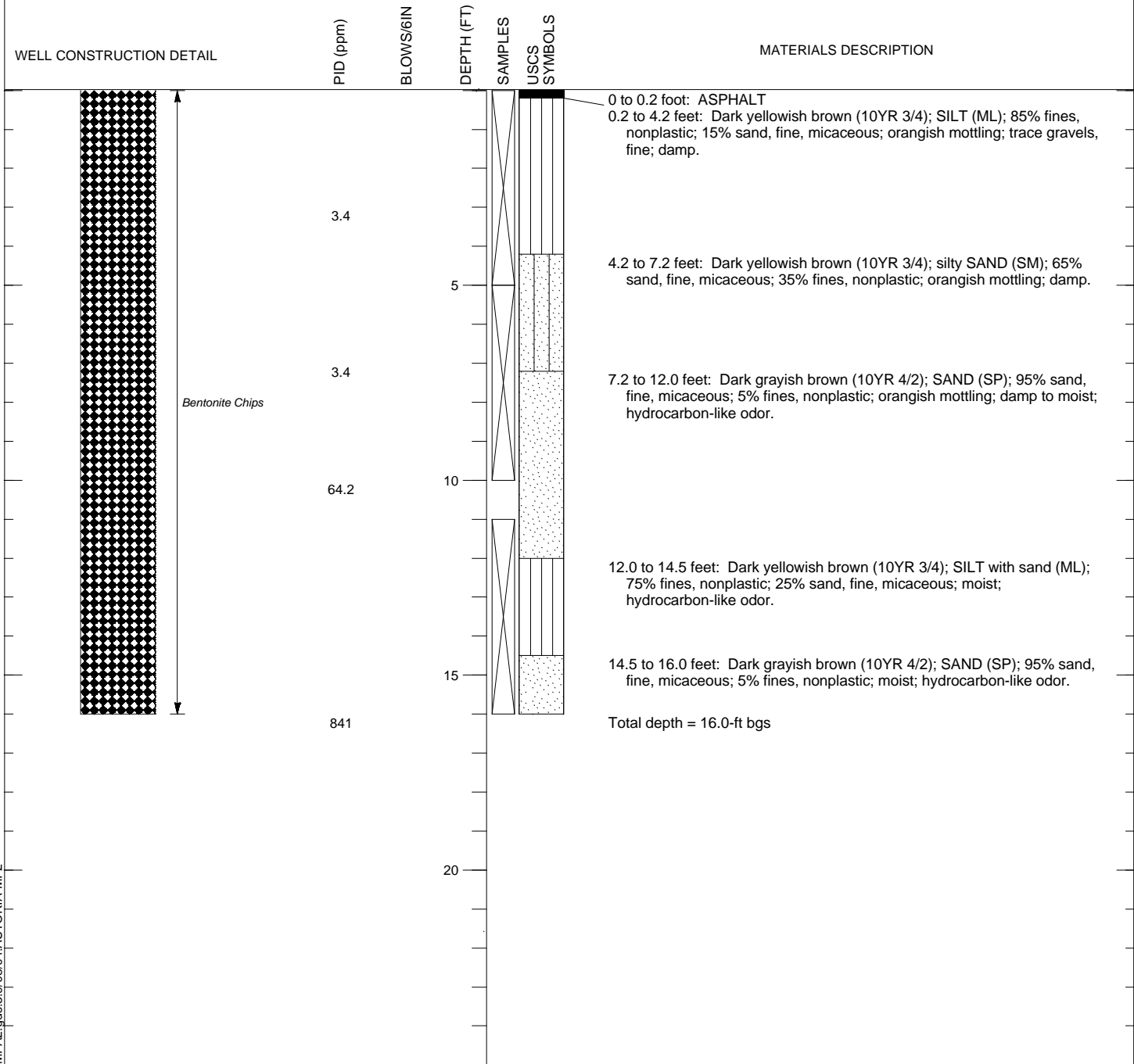


FIGURE A-12

LOG OF SB-327(D)

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon



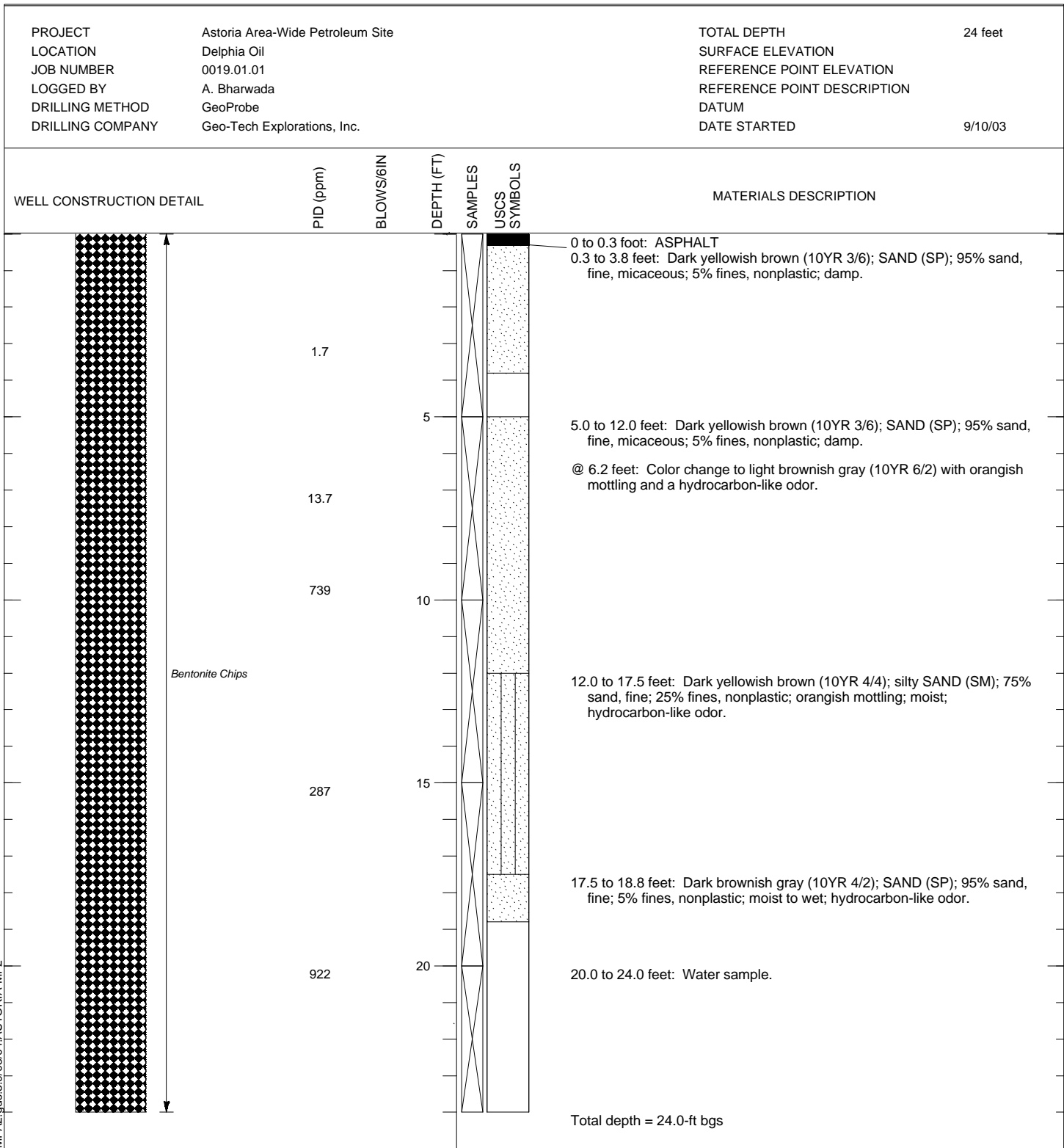


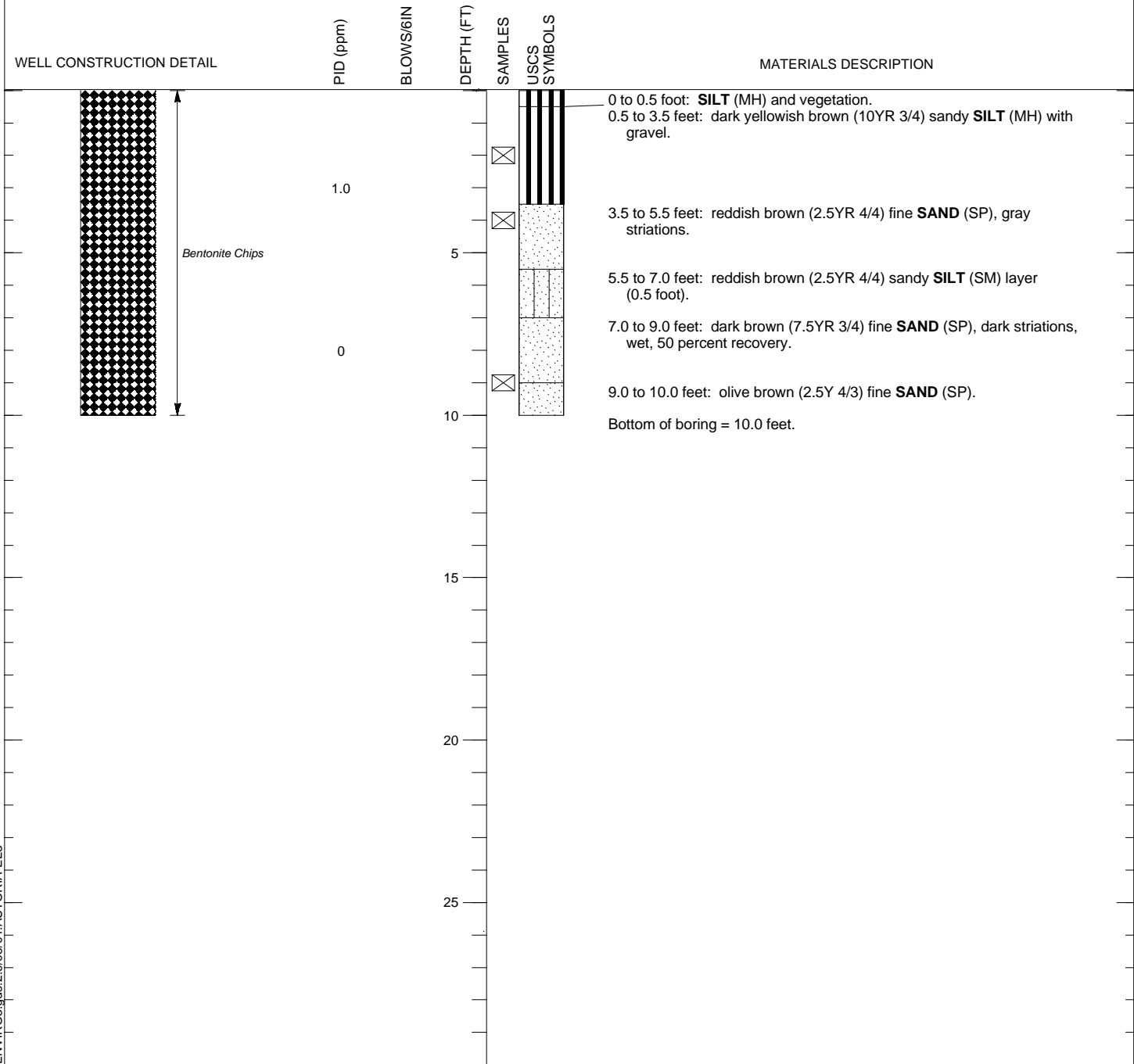
FIGURE A-13

LOG OF
SB-328(D)

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon



PROJECT	Astoria Area-Wide Petroleum Site	TOTAL DEPTH	10 feet
LOCATION	Astoria, Oregon	SURFACE ELEVATION	
JOB NUMBER	10077.003	REFERENCE POINT ELEVATION	
LOGGED BY	Melanie Bocianowski	REFERENCE POINT DESCRIPTION	
DRILLING METHOD	Geoprobe	DATUM	
DRILLING COMPANY	Geo-Tech Explorations, Inc.	DATE STARTED	03/31/2004

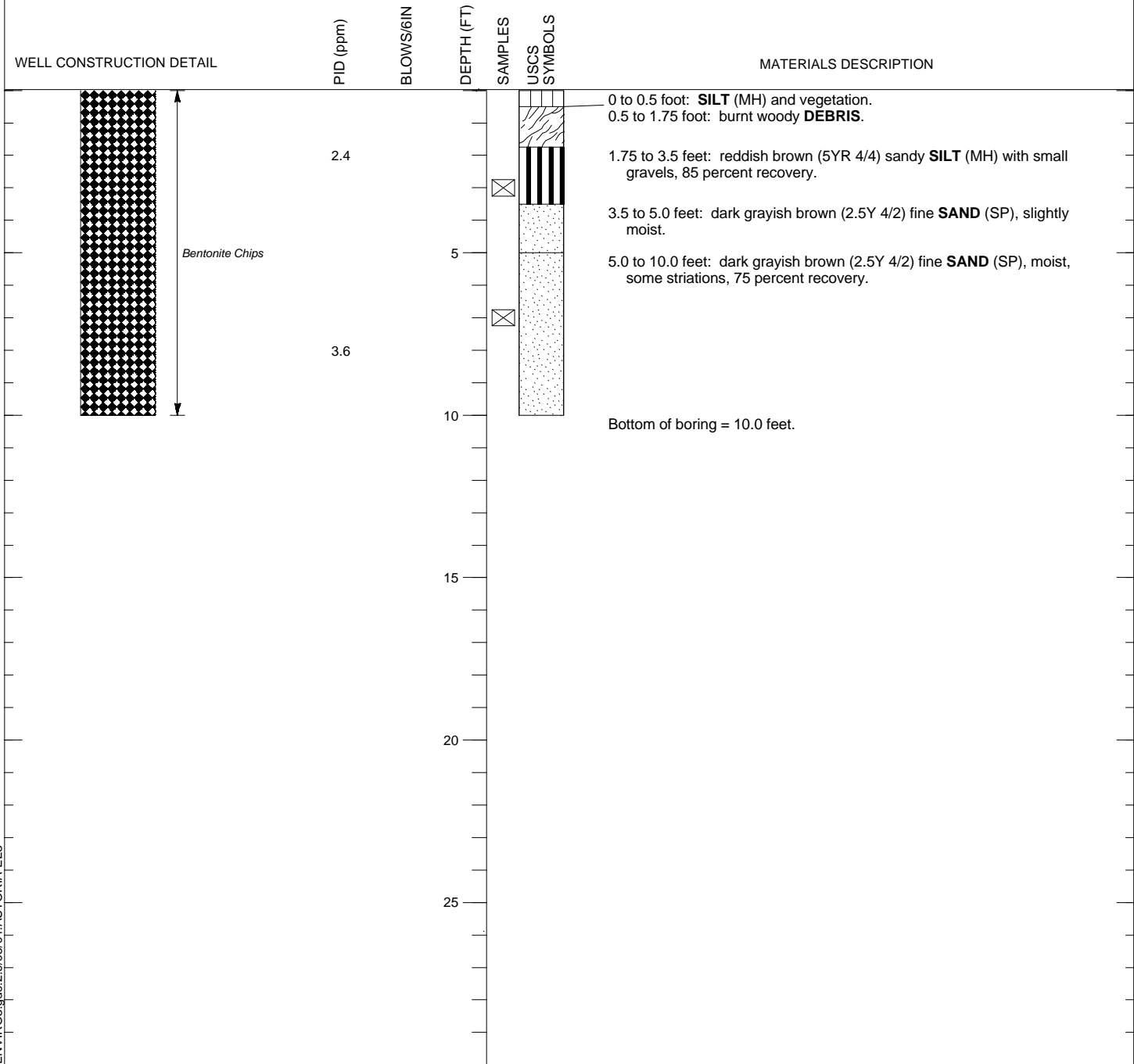


ENVIRO3.gds:2.9/03/04.ASTORIA-EL3

FIGURE A-14
LOG OF
SOIL BORING SB-410(F)

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

PROJECT	Astoria Area-Wide Petroleum Site	TOTAL DEPTH	10 feet
LOCATION	Astoria, Oregon	SURFACE ELEVATION	
JOB NUMBER	10077.003	REFERENCE POINT ELEVATION	
LOGGED BY	Melanie Bocianowski	REFERENCE POINT DESCRIPTION	
DRILLING METHOD	Geoprobe	DATUM	
DRILLING COMPANY	Geo-Tech Explorations, Inc.	DATE STARTED	03/31/2004



ENVIRO3.gds:2.9/03/04.ASTORIA-EL3

FIGURE A-15
LOG OF
SOIL BORING SB-721(P)

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

PROJECT	Astoria Area-Wide Petroleum Site	TOTAL DEPTH	6 feet
LOCATION	Astoria, Oregon	SURFACE ELEVATION	
JOB NUMBER	10077.003	REFERENCE POINT ELEVATION	
LOGGED BY	Hart Crowser	REFERENCE POINT DESCRIPTION	
DRILLING METHOD	Geoprobe	DATUM	
DRILLING COMPANY	Geo-Tech Explorations, Inc.	DATE STARTED	03/31/2004

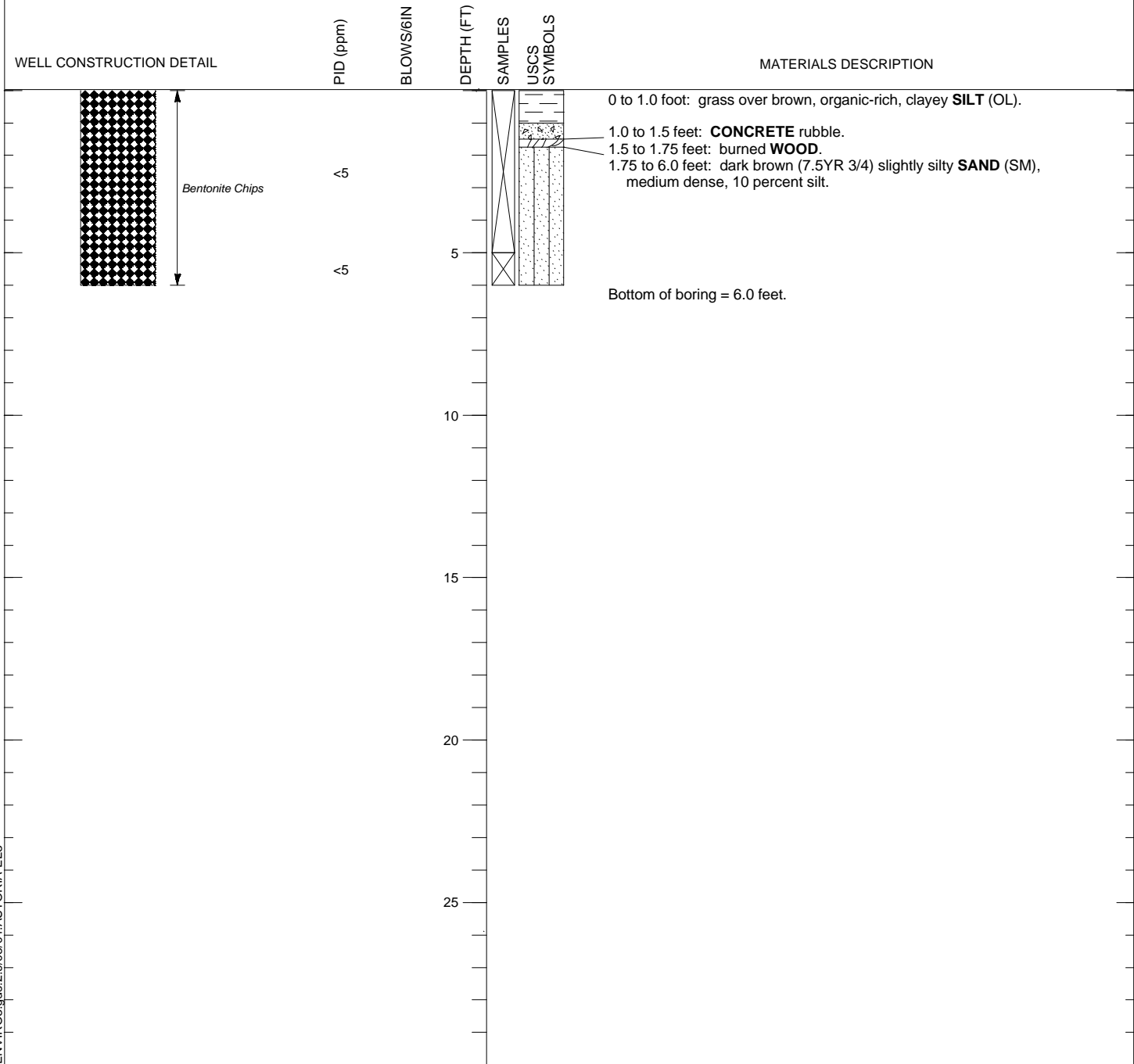
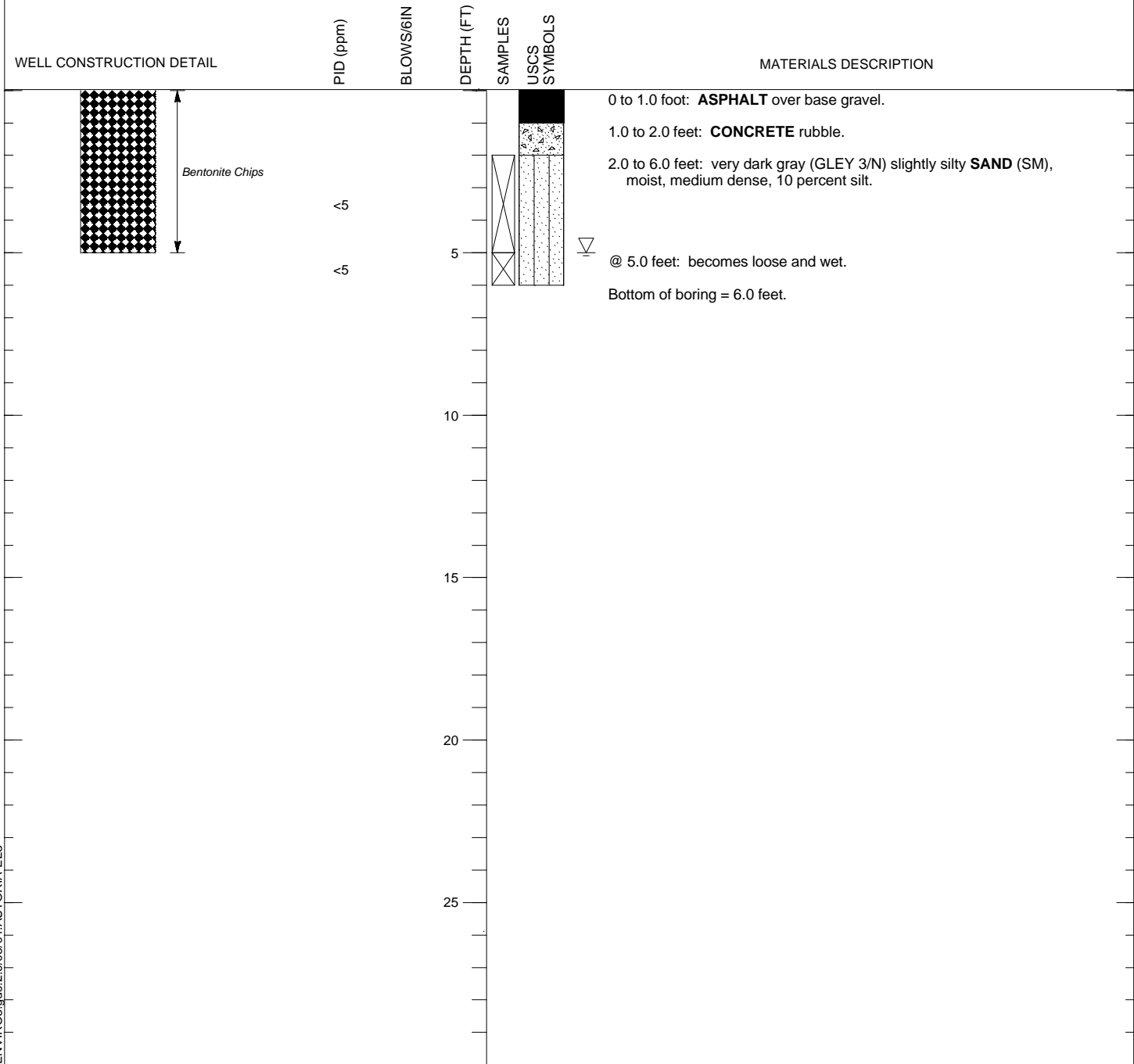


FIGURE A-16
LOG OF
SOIL BORING SB-915(S)

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

PROJECT	Astoria Area-Wide Petroleum Site	TOTAL DEPTH	5 feet
LOCATION	Astoria, Oregon	SURFACE ELEVATION	
JOB NUMBER	10077.003	REFERENCE POINT ELEVATION	
LOGGED BY	Hart Crowser	REFERENCE POINT DESCRIPTION	
DRILLING METHOD	Geoprobe	DATUM	
DRILLING COMPANY	Geo-Tech Explorations, Inc.	DATE STARTED	03/31/2004

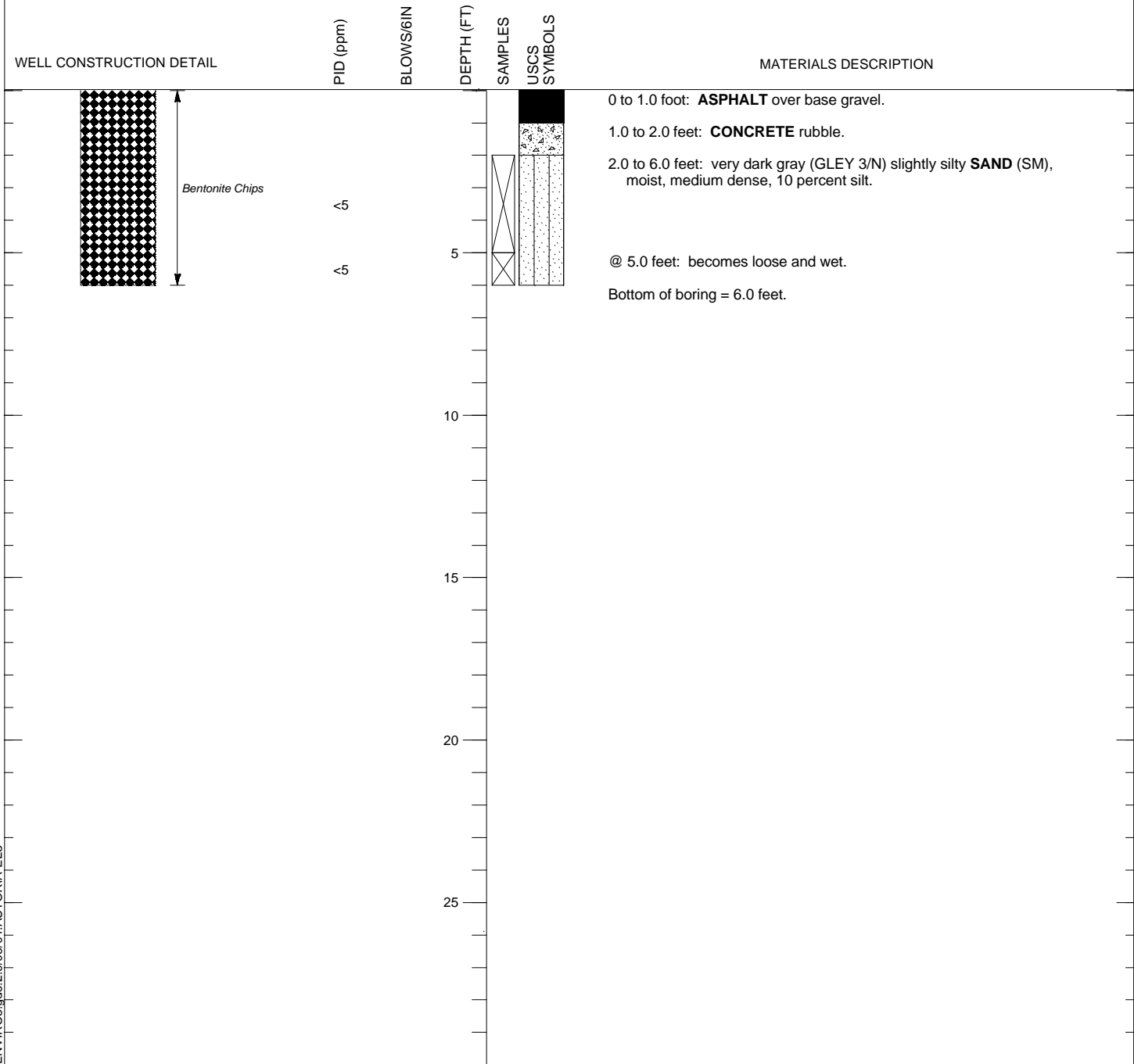


ENVIRO3.gds:2.9/03/04.ASTORIA-EL3

FIGURE A-17
LOG OF
SOIL BORING SB-916A(S)

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

PROJECT	Astoria Area-Wide Petroleum Site	TOTAL DEPTH	6 feet
LOCATION	Astoria, Oregon	SURFACE ELEVATION	
JOB NUMBER	10077.003	REFERENCE POINT ELEVATION	
LOGGED BY	Hart Crowser	REFERENCE POINT DESCRIPTION	
DRILLING METHOD	Geoprobe	DATUM	
DRILLING COMPANY	Geo-Tech Explorations, Inc.	DATE STARTED	03/31/2004

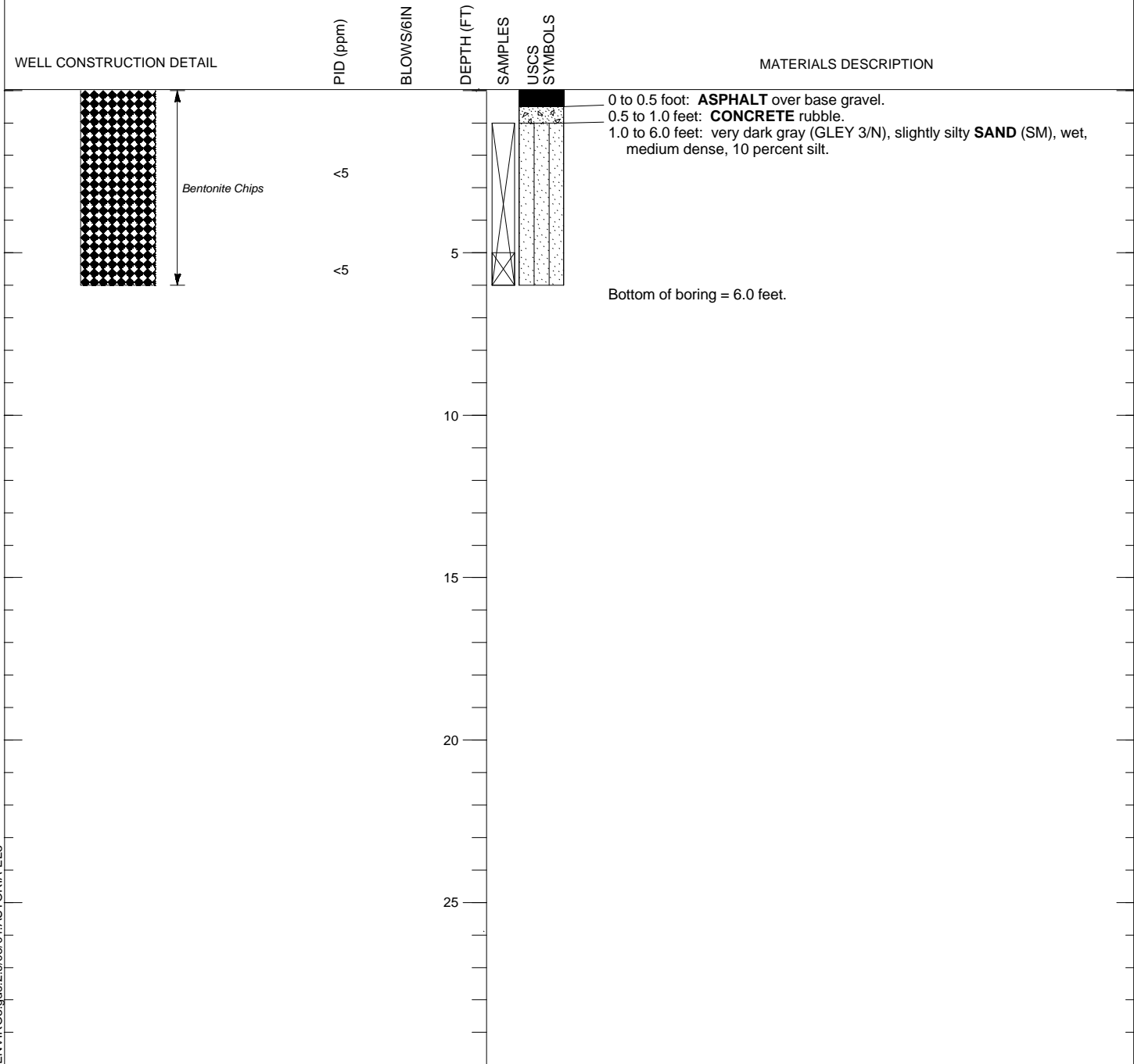


ENVIRO3.gds:2.9/03/04.ASTORIA-EL3

FIGURE A-18
LOG OF
SOIL BORING SB-916B(S)

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

PROJECT	Astoria Area-Wide Petroleum Site	TOTAL DEPTH	6 feet
LOCATION	Astoria, Oregon	SURFACE ELEVATION	
JOB NUMBER	10077.003	REFERENCE POINT ELEVATION	
LOGGED BY	Hart Crowser	REFERENCE POINT DESCRIPTION	
DRILLING METHOD	Geoprobe	DATUM	
DRILLING COMPANY	Geo-Tech Explorations, Inc.	DATE STARTED	03/31/2004

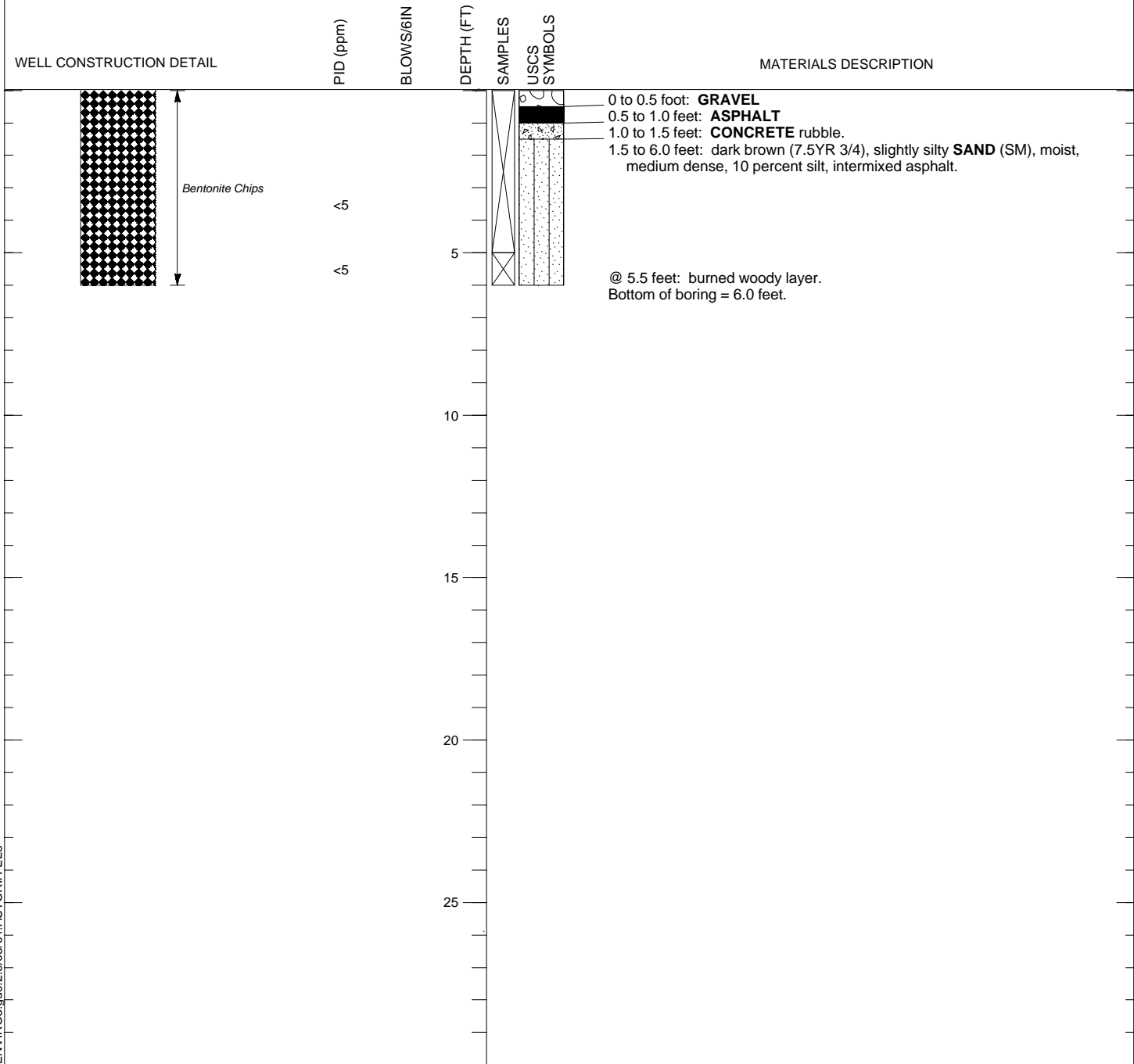


ENVIRO3.gds:2.9/03/04.ASTORIA-EL3

FIGURE A-19
LOG OF
SOIL BORING SB-917(S)

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

PROJECT	Astoria Area-Wide Petroleum Site	TOTAL DEPTH	6 feet
LOCATION	Astoria, Oregon	SURFACE ELEVATION	
JOB NUMBER	10077.003	REFERENCE POINT ELEVATION	
LOGGED BY	Hart Crowser	REFERENCE POINT DESCRIPTION	
DRILLING METHOD	Geoprobe	DATUM	
DRILLING COMPANY	Geo-Tech Explorations, Inc.	DATE STARTED	03/31/2004



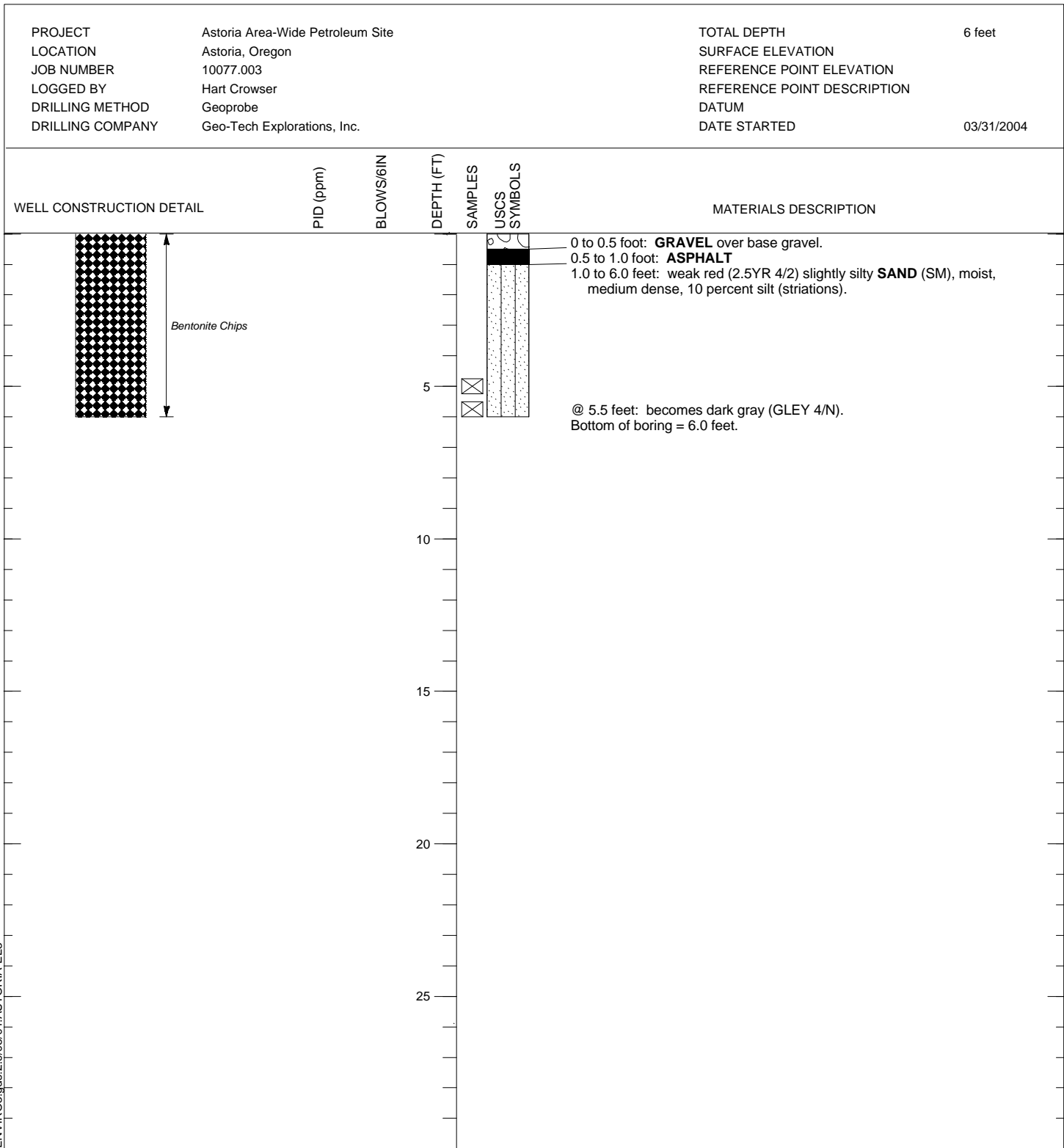
ENVIRO3.gds:2.9/03/04.ASTORIA-EL3

FIGURE A-20
LOG OF
SOIL BORING SB-918(S)

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

EnviroLogic Resources, Inc.

Consulting Environmental & Water Resources Scientists



ENVIRO3.gds:2.9/03/04.ASTORIA-EL3

FIGURE A-21
LOG OF
SOIL BORING SB-919(S)

Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

APPENDIX B

***LABORATORY ANALYTICAL REPORT AND
DATA VALIDATION RESULTS***

**QUALITY ASSURANCE/QUALITY CONTROL REVIEW
ASTORIA AREA-WIDE PETROLEUM SITE
ASTORIA, OREGON**

This report presents the results of our review of laboratory analytical reports and the data validation conducted based on the laboratory reports. The samples were collected during Phase 2 soil exploration field activities at the Astoria Area-Wide Petroleum Site. Sample collection dates are August 26, 27, 28; September 3, 4, 5, 8, 9 and 10, 2003, and March 31 2004. Sample handling, analysis and quality control (QC) procedures were established in the July 15, 2002, RI/FS and IRAM Development Work Plan Phase I Remedial Investigation/Feasibility Study, Astoria Area-Wide Petroleum Site, Astoria, Oregon, (RI/FS Work Plan) prepared by *EnviroLogic Resources, Inc.* The samples were submitted to North Creek Analytical (NCA) of Portland, Oregon, for analysis.

A total of 88 samples (including 2 field duplicates and 1 equipment blank) were submitted for analysis. The samples were submitted in seven groups, each group was assigned a lab order number. Basic information about each lab order number is presented below:

Lab Order	No. of Samples	Matrix	Date(s) Collected	Field Locations
P3I0234	8	Soil	9/4 & 5/03	005, 254, 834, 835
P3H0921	14	Soil	8/26, 27, 28/03	007, 008, 009, 010, 001, 002, 019, 627
P3I0189	14 1	Soil Equipment Blank (water)	9/3 & 4/03	011, 013, 912, 913, 914, 003, 016, 253, 253, 255,
P3I0433	29 2	Soil Field Duplicate (soil)	9/8, 9, 10/03	328, 320, 327, 328, 324, 325, 017, 632, 321, 326, 322, 323, 015
P4D0071	5	Soil	3/31/2004	915, 916, 917, 918, 919
P4D0142	8	Soil	3/31/2004	006,410,020, 721
P4C1020	4 3	Soil Water	3/31/2004	256. 257. 258. 259

As stated in Appendix B, Sections 8.0, 9.0, and 10.0 of the RI/FS Work Plan our goal was to review the laboratory reports and chains of custody for Quality Assurance/Quality Control (QA/QC) parameters and statistical parameters. The findings of our review are presented in the following pages. Qualified data are presented in the attached tables. Analyses performed are listed below.

Analysis	Reference
Gasoline Hydrocarbons	NWTPH-Gx
Diesel and Heavy Range Hydrocarbons	NWTPH-Dx
Total Metals	EPA Method 6000/7000
Dissolved Metals	EPA Method 6000/7000
Volatile Organic Compounds (VOCs)	EPA Method 8260B
Polynuclear Aromatic Compounds (PAHs)	EPA Method 8270M-SIM
Percent Dry Weight	Standard Methods
Polychlorinated Biphenols	EPA Method 8082

EPA = U.S. Environmental Protection Agency
NWTPH = Northwest Total Petroleum Hydrocarbons
SIM= Select Ion Monitoring

CHAIN OF CUSTODY REVIEW

Chains of custody (COC) were reviewed to determine sample condition upon arrival at the lab, that analysis requested was in accordance with the RI/FS Work Plan, and that analyses requested were performed.

- No special conditions were noted on COC to indicate sample containers were broken or otherwise in any adverse condition upon arrival at the laboratory. For sample delivery group P3I0189 a trip blank was in the cooler but not recorded on the chain-of-custody. No COC was attached to laboratory report P4D0071.
- Cooler temperatures were recorded as 11.5°C for P3H0921; 4.6°C for P3I0189; 5.1°C for P3I0234; 5.6°C for P3I0433; 6.0°C for P4C1020; and 5.5°C for P4D0142.
- Analyses requested on the COC reflects the analysis presented in the laboratory reports.

QUALITY CONTROL/QUALITY ASSURANCE REVIEW

DATA QUALIFIERS

The following data qualifiers are used in this data validation report:

- **B.** The analyte was also identified in a field or laboratory blank associated with this sample or sample group.

- **J.** The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- **U.** The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

The attached table presents the original result and the qualified result for all analyses that were qualified. Only qualified analytical results are included.

HOLDING TIMES

We reviewed the laboratory reports and compared sample dates, prepared dates and analyzed dates for all the analyses. The laboratory provided us with holding times for each analytical method for soil and water samples. Based on this review one holding time exception was noted. Gasoline Hydrocarbon analysis for soil sample SB-256(C)-6 was performed outside the EPA recommended holding time. The sample is qualified with a J flag.

FIELD BLANKS

Equipment Blanks

One equipment blank was analyzed for the 85 soil samples delivered. The recommended frequency presented in the RI/FS Work Plan is one equipment blank for every 20 samples delivered to the laboratory. The one equipment blank was submitted for analysis for VOCs and total lead. No analytes were detected in the equipment blank.

Trip Blanks

No trip blanks were utilized. The recommended frequency presented in the RI/FS Work Plan is one equipment blank for every 20 samples delivered to the laboratory.

LABORATORY METHOD BLANKS

Laboratory method blanks were analyzed at the required frequency. Laboratory blanks were performed on sample batches so each blank is associated with a batch of field samples. The batch sample associated with each field sample is identified in the laboratory report. The one analyte detected in the laboratory blank is noted below:

Lab Order/ Batch No.	Field Samples Qualified	Analyte Detected in Laboratory Blank	Analytical Method	Blank MDL	Blank RL
P4D0142					
4040217	SB-410(F)-2', SB-410(F)-4', SB-410(F)-9', SB-020(A)-4', SB-020(A)-9', SB-721(P)-7'	TPH-Gx – 1.46 mg/kg	NWTPH-Gx	0.550 mg/kg	4.00 mg/kg

Field samples in the same batch that had analytes detected within 5 times the blank concentration are qualified by placing a J and B flag next to the detected concentration if the detected concentration is greater than the RL. Where the detected concentration is less than the RL, the RL value is reported with a UB flag. Data is not qualified where field samples had analytes detected at concentrations greater than 5 times the corresponding blank concentration. Laboratory dilution of field samples was considered.

SURROGATE RECOVERIES

Field Samples

One or more surrogates were utilized for each analysis except for metals and dry weight. We reviewed all of the surrogate recoveries relative to the specified control limits. Where surrogate recoveries were not within control limits batch specific QC information and laboratory notes were reviewed to evaluate the data. Lack of surrogate recovery due to dilution is not specifically addressed. The ten exceptions (not including dilution related issues) were noted and are discussed below.

Lab Order	Analysis/ QC Batch Number	Field Samples Impacted	Surrogate And % Recovery	Control Limits	Comment
P3H0 -921	NW TPH-Gx/ 3090053	SB-009(A)-7.5	a,a,a-TFT-200%	50-150	Surrogate recoveries for all QC samples were acceptable. No data qualified.
	NWTPH-Dx/ 3090143	SB-007(A)-7.5 SB-629(A)-7.5	1-CO-268% 1-CO-229%	50-150	Surrogate recoveries for all QC samples were acceptable. No data qualified
	PAHs/ 3090221	SB-009(A)-7.5	Pyrene-d10-NR	40-150	Surrogate recoveries for all QC samples were acceptable. No data qualified
P3I0- 189	NW TPH-Gx / 3090343	SB-255(C)-2.5	a,a,a-TFT-163%	50-150	Surrogate recoveries for all QC samples were acceptable. No data qualified
	NWTPH-Dx/ 3090351	SB-225(C)-15	1-CO-300%	50-150	Surrogate recoveries for all QC samples were acceptable. No data qualified
P310- 433	NW TPH-Gx/ 3090546	SB-632(N)-7.5	a,a,a-TFT - 170%	50-150	Surrogate recoveries for all QC samples were acceptable except for one duplicate sample (DUP2) a second duplicate sample (DUP1) was acceptable. No data is qualified.
		SB-321(D)-2	a,a,a-TFT - >300%	50-150	
		SB-326(D)-10	a,a,a-TFT - 191%	50-150	
P4D0 142	NWTPH-Gx/ 4040217	SB-006(A)-7 [?]	a,a,a-TFT – 33.3%	50-150	Surrogate recoveries for all QC samples were acceptable except for the matrix spike. No data is qualified.

Notes: 1-CO = 1-Chlorooctadecane
NR=No Recovery

SPIKE AND SURROGATE RECOVERIES

Laboratory Control Samples

Laboratory Control Samples (LCS) were conducted at the required frequency. Based on our review all LCS quality control information was acceptable. No data was qualified.

Matrix Spike Samples

Matrix Spike (MS) were conducted at the required frequency. Based on our review several spike compounds and/or surrogates did not meet quality control limits as presented below.

Lab Order	Batch Number	Spike or Surrogate (%)	Control Limit (%)	Comment
P3I0433	3090610 -MS -MSD	1,2-DCA-d4-56.8 1,2,-DCA-d4-56.8	57.3-144 57.3-144	VOC. Lab noted matrix interference. Data for batch not qualified as all other QC data was acceptable and recovery was very close to control limit value.
	3090670 -MS	lead - -27.5	75-125	Lead. Lab noted non-homogeneous sample matrix. Data not qualified.
P3H0921	3090221 -MSD	Pyrene-144	39-138	PAHs. Lab noted this was not an out-of-control condition for the batch. Data not qualified.
P3I0234	3090434 -MS -MS	Lead->300 Lead-127	75-125 75-125	Lead. Lab noted out of control limits due to a non-homogeneous sample matrix. Data not qualified.
	P4D0142	4040217 -MS	TPHGx – 64.8 A,a,a-TFT-44.2	65-130 50-150
4040355 -DUP1 -MS1 -MS2		Barium, chromium, lead	varies	Laboratory noted non-homogeneous sample matrix. Data not qualified.

LABORATORY AND FIELD DUPLICATES/RELATIVE PERCENT DIFFERENCE

MSD, Laboratory Control Sample Duplicates (LCSDs), laboratory duplicates and field duplicate analytical information was reviewed. Based on our review all duplicate sample relative percent differences (RPDs) were within acceptable limits for laboratory duplicates except as noted below. Due to the inherent non-homogenous nature of soil samples soil duplicates are not usually obtained at the AAW site. However, two field duplicates were obtained for analyses. RPDs for the field duplicate are not presented because of this inherent issue of non-homogeneous soil samples. Surrogate recovery exceptions for duplicate samples were included in the previous section.

Lab Order	Batch Number	Analysis/ Sample Type	QC Exception	Comment
P3I0234	3090344	NWTPH-Gx/ Duplicate(Dup1)	RPD (50.0) was outside control limit of 40.	Lab noted the sample was non-homogeneous. Data not qualified.
P3H0921	3090079	NWTPH-Gx/ Duplicate (Dup1)	RPD (80.6) was outside control limit of 40	Lab noted the sample was non-homogeneous. Data not qualified.
	3090053	NWTPH-Gx/ Duplicate (Dup1)	RPD (71.9) was outside control limit of 40	Lab noted review of associated batch QC indicates this does not represent an out-of- control condition for the batch. Data not qualified.
	3090252	Lead/ Duplicate(Dup1)	RPD (52.4) was outside control limit of 40	Lab noted review of associated batch QC indicates this does not represent an out-of- control condition for the batch. Data not qualified.
P3I0433	3090670	Lead	RPD (51.0) was outside control limit of 40.	Lab noted non-homogeneous sample. No data was qualified.
P4C1020	4040961	NWTPH-Gx/ Duplicate 1	RPD (76.0) was outside control limit of 40.	Lab noted non-homogeneous sample. No data was qualified.
	4040355	Barium (88.3) Chromium (81.6) Lead (69.8)	RPDs are as noted, control limit is 40.	Lab noted non-homogeneous sample. No data was qualified
P4D0142	4040241	NWTPH-Dx/ Duplicate 2	RPD (71.5-diesel and 50.3- oil) is outside control limit of 40.	Lab noted non-homogeneous sample. No data was qualified

STATISTICAL EVALUATION

Precision

Precision is a measure of the ability to reproduce data and is evaluated using duplicate samples. This includes field duplicates, laboratory duplicates, MSDs and LCSDs. Relative percent difference (RPD) is used to measure the reproducibility as described in section 10.1 of Appendix B of the RI/FS Work Plan. The RPD control limits are listed in the laboratory reports. These control limits may be slightly different than those presented in the RI/FS Work Plan, but they are still acceptable. Overall precision for the analysis was acceptable

RPD's outside the control limits would represent statistical exceptions and indicate a lack of ability to reproduce the data. LCSD evaluate the affect laboratory

conditions have on precision no RPD exceptions were noted in LCSDs. Field duplicates, MSDs and lab duplicates evaluate the effect field and laboratory conditions have on precision. The only exceptions noted in these duplicates were related to non-homogeneous samples and matrix effect or the laboratory review indicated there was not an out-of-control condition for the batch. Overall the precision of the laboratory data is acceptable and no data is qualified due to lack of precision. Field duplicates were not quantitatively evaluated for precision because of the inherent trouble with the reproducibility of soil analytical results.

Accuracy

Accuracy measures the bias in a system and is evaluated using percent recovery of surrogate, spikes and LCS. LCS evaluates bias due to laboratory conditions. Bias due to field and laboratory conditions is evaluated using surrogates and matrix spikes. Our review indicates that some surrogate and spike recoveries did not meet control limits. The laboratory noted matrix interference and non-homogeneous samples were the primary reasons for out-of-control conditions. Overall the accuracy of the laboratory data is acceptable and no data is qualified due to a lack of precision.

Representatives

Equipment blanks, laboratory blanks, and field duplicate samples evaluate how representative analytical results are of actual site conditions. Blanks evaluate the introduction of “analytes” from outside sources such as field equipment, transportation equipment and the laboratory environment. In general trip and equipment blanks were not analyzed at the recommended frequency. One laboratory blank had detected gasoline range hydrocarbons. No other problems were noted in those blanks analyzed, including the other laboratory blanks.

Duplicate field samples attempt to evaluate how representative a sample is of site conditions. Two duplicate soil samples were obtained due to the inherent problems in producing representative duplicate soil samples these samples are only being evaluated qualitatively not quantitatively.

Completeness

Completeness evaluates how successful the data set is at being valid. No data was rejected, the data group was 100 percent complete with respect to rejected data. Some data was qualified as noted in the attached tables.

REFERENCES

- USEPA (U.S. Environmental Protection Agency). 2002. USEPA Contract Laboratory Program, National Functional Guidelines For Inorganics Data Review. Office of Emergency and Remedial Response, U.S. Environmental Protection Agency. EPA 540/R-01/008.
- USEPA (United States Environmental Protection Agency). 1999. USEPA Contract Laboratory Program, National Functional Guidelines for Organic Data Review. Office of Emergency and Remedial Response, U.S. Environmental Protection Agency. EPA 540/R-99/008.
- EnviroLogic Resources, Inc.* RI/FS and IRAM Development Work Plan, Phase I, Remedial Investigation/Feasibility Study, Astoria Area-Wide Petroleum Site, Astoria, Oregon, July 15, 2002.

**Qualified Analytical Results
TPHGx by NWTPHGx**

Phase 2 Soil Characterization
Astoria Area-Wide Site
Astoria, Oregon

Laboratory Identification	Sample Name	Analyte	Original Result	Qualified Result	Method Detection Limit	Reporting Limit	Units
P4C1020-07	SB-256(C)-6'	TPH-Gx	6.23	6.23 J	0.550	4.00	mg/kg
P4D0142-02	SB-410(F)-2'	TPH-Gx	4.45	4.45 J B	0.550	4.00	mg/kg
P4D0142-03	SB-410(F)-4'	TPH-Gx	2.22 J	4.00 U B	0.550	4.00	mg/kg
P4D0142-04	SB-410(F)-9'	TPH-Gx	1.93 J	4.00 U B	0.550	4.00	mg/kg
P4D0142-05	SB-020(A)-4'	TPH-Gx	1.83 J	4.00 U B	0.550	4.00	mg/kg
P4D0142-06	SB-020(A)-9'	TPH-Gx	3.10 J	4.00 U B	0.550	4.00	mg/kg
P4D0142-08	SB-721(P)-7'	TPH-Gx	1.80 J	4.00 U B	0.550	4.00	mg/kg



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12 November 2003

Tom Calabrese
EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762
RE: Astoria Area-Wide Petroleum Site

Enclosed are the results of analyses for samples received by the laboratory on 08/28/03 15:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Joy D. Chang For Brian Cone
Industrial Services Manager



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-008(A)-2	P3H0921-01	Soil	08/26/03 14:40	08/28/03 15:20
SB-008(A)-7.5	P3H0921-02	Soil	08/26/03 14:50	08/28/03 15:20
SB-007(A)-7.5	P3H0921-03	Soil	08/26/03 17:28	08/28/03 15:20
SB-009(A)-2	P3H0921-04	Soil	08/27/03 08:36	08/28/03 15:20
SB-009(A)-7.5	P3H0921-05	Soil	08/27/03 08:48	08/28/03 15:20
SB-010(A)-2	P3H0921-06	Soil	08/27/03 10:30	08/28/03 15:20
SB-010(A)-7.5	P3H0921-07	Soil	08/27/03 10:41	08/28/03 15:20
SB-002(A)-2.5	P3H0921-08	Soil	08/27/03 13:05	08/28/03 15:20
SB-002(A)-7.5	P3H0921-09	Soil	08/27/03 13:14	08/28/03 15:20
SB-001(A)-7.5	P3H0921-10	Soil	08/27/03 15:24	08/28/03 15:20
SB-019(A)-2.5	P3H0921-11	Soil	08/27/03 17:25	08/28/03 15:20
SB-019(A)-7.5	P3H0921-12	Soil	08/27/03 17:33	08/28/03 15:20
SB-627(N)-2	P3H0921-13	Soil	08/28/03 08:30	08/28/03 15:20
SB-629(N)-7.5	P3H0921-15	Soil	08/28/03 10:10	08/28/03 15:20

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

North Creek Analytical, Inc.
Environmental Laboratory Network



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Gasoline Hydrocarbons per NW TPH-Gx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-008(A)-2 (P3H0921-01) Soil Sampled: 08/26/03 14:40 Received: 08/28/03 15:20										
Gasoline Range Hydrocarbons	4.93	2.50	4.00	mg/kg dry	1	3090053	09/02/03	09/03/03	NW TPH-G	
Surrogate: a,a,a-TFT	71.5 %		50-150			"	"	"	"	
SB-008(A)-7.5 (P3H0921-02) Soil Sampled: 08/26/03 14:50 Received: 08/28/03 15:20										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090053	09/02/03	09/03/03	NW TPH-G	U
Surrogate: a,a,a-TFT	96.7 %		50-150			"	"	"	"	
SB-007(A)-7.5 (P3H0921-03) Soil Sampled: 08/26/03 17:28 Received: 08/28/03 15:20										
Gasoline Range Hydrocarbons	2520	250	400	mg/kg dry	100	3090053	09/02/03	09/03/03	NW TPH-G	D
Surrogate: a,a,a-TFT	109 %		50-150			"	"	"	"	D
SB-009(A)-2 (P3H0921-04) Soil Sampled: 08/27/03 08:36 Received: 08/28/03 15:20										
Gasoline Range Hydrocarbons	7.84	2.50	4.00	mg/kg dry	1	3090053	09/02/03	09/03/03	NW TPH-G	
Surrogate: a,a,a-TFT	100 %		50-150			"	"	"	"	
SB-009(A)-7.5 (P3H0921-05) Soil Sampled: 08/27/03 08:48 Received: 08/28/03 15:20										
Gasoline Range Hydrocarbons	1670	25.0	40.0	mg/kg dry	10	3090053	09/02/03	09/03/03	NW TPH-G	D
Surrogate: a,a,a-TFT	200 %		50-150			"	"	"	"	S-09, D
SB-010(A)-2 (P3H0921-06) Soil Sampled: 08/27/03 10:30 Received: 08/28/03 15:20										
Gasoline Range Hydrocarbons	6.39	2.50	4.00	mg/kg dry	1	3090053	09/02/03	09/03/03	NW TPH-G	
Surrogate: a,a,a-TFT	61.7 %		50-150			"	"	"	"	
SB-010(A)-7.5 (P3H0921-07) Soil Sampled: 08/27/03 10:41 Received: 08/28/03 15:20										
Gasoline Range Hydrocarbons	2.76	2.50	4.00	mg/kg dry	1	3090079	09/03/03	09/04/03	NW TPH-G	J
Surrogate: a,a,a-TFT	67.8 %		50-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 11/12/03 15:11

Gasoline Hydrocarbons per NW TPH-Gx Method
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-002(A)-2.5 (P3H0921-08) Soil Sampled: 08/27/03 13:05 Received: 08/28/03 15:20										
Gasoline Range Hydrocarbons	8.40	2.50	4.00	mg/kg dry	1	3090079	09/03/03	09/04/03	NW TPH-G	
<i>Surrogate: a,a,a-TFT</i>	93.9 %		50-150			"	"	"	"	
SB-002(A)-7.5 (P3H0921-09) Soil Sampled: 08/27/03 13:14 Received: 08/28/03 15:20										
Gasoline Range Hydrocarbons	3.18	2.50	4.00	mg/kg dry	1	3090079	09/03/03	09/04/03	NW TPH-G	J
<i>Surrogate: a,a,a-TFT</i>	80.4 %		50-150			"	"	"	"	
SB-001(A)-7.5 (P3H0921-10) Soil Sampled: 08/27/03 15:24 Received: 08/28/03 15:20										
Gasoline Range Hydrocarbons	4.64	2.50	4.00	mg/kg dry	1	3090079	09/03/03	09/05/03	NW TPH-G	
<i>Surrogate: a,a,a-TFT</i>	98.3 %		50-150			"	"	"	"	
SB-019(A)-2.5 (P3H0921-11) Soil Sampled: 08/27/03 17:25 Received: 08/28/03 15:20										
Gasoline Range Hydrocarbons	7.46	2.50	4.00	mg/kg dry	1	3090079	09/03/03	09/04/03	NW TPH-G	
<i>Surrogate: a,a,a-TFT</i>	112 %		50-150			"	"	"	"	
SB-019(A)-7.5 (P3H0921-12) Soil Sampled: 08/27/03 17:33 Received: 08/28/03 15:20										
Gasoline Range Hydrocarbons	5960	250	400	mg/kg dry	100	3090079	09/03/03	09/05/03	NW TPH-G	D
<i>Surrogate: a,a,a-TFT</i>	NR		50-150			"	"	"	"	S-01, D
SB-627(N)-2 (P3H0921-13) Soil Sampled: 08/28/03 08:30 Received: 08/28/03 15:20										
Gasoline Range Hydrocarbons	31.4	2.50	4.00	mg/kg dry	1	3090079	09/03/03	09/05/03	NW TPH-G	
<i>Surrogate: a,a,a-TFT</i>	73.7 %		50-150			"	"	"	"	
SB-629(N)-7.5 (P3H0921-15) Soil Sampled: 08/28/03 10:10 Received: 08/28/03 15:20										
Gasoline Range Hydrocarbons	1650	25.0	40.0	mg/kg dry	10	3090079	09/03/03	09/05/03	NW TPH-G	D
<i>Surrogate: a,a,a-TFT</i>	81.7 %		50-150			"	"	"	"	D

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-008(A)-2 (P3H0921-01) Soil Sampled: 08/26/03 14:40 Received: 08/28/03 15:20										
Diesel Range Organics	16.6	12.5	25.0	mg/kg dry	1	3090143	09/04/03	09/05/03	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	59.0	25.0	50.0	"	"	"	"	"	"	A-01
<i>Surrogate: 1-Chlorooctadecane</i>	99.6 %		50-150			"	"	"	"	
SB-008(A)-7.5 (P3H0921-02) Soil Sampled: 08/26/03 14:50 Received: 08/28/03 15:20										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090143	09/04/03	09/04/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	82.2 %		50-150			"	"	"	"	
SB-007(A)-7.5 (P3H0921-03) Soil Sampled: 08/26/03 17:28 Received: 08/28/03 15:20										
Diesel Range Organics	6840	250	500	mg/kg dry	20	3090143	09/04/03	09/05/03	NWTPH-Dx	D
Heavy Oil Range Hydrocarbons	ND	500	1000	"	"	"	"	"	"	R-05, D, U
<i>Surrogate: 1-Chlorooctadecane</i>	268 %		50-150			"	"	"	"	S-02, D
SB-009(A)-2 (P3H0921-04) Soil Sampled: 08/27/03 08:36 Received: 08/28/03 15:20										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090143	09/04/03	09/04/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	85.7 %		50-150			"	"	"	"	
SB-009(A)-7.5 (P3H0921-05) Soil Sampled: 08/27/03 08:48 Received: 08/28/03 15:20										
Diesel Range Organics	12200	500	1000	mg/kg dry	40	3090143	09/04/03	09/05/03	NWTPH-Dx	D
Heavy Oil Range Hydrocarbons	ND	1000	2000	"	"	"	"	"	"	R-05, D, U
<i>Surrogate: 1-Chlorooctadecane</i>	NR		50-150			"	"	"	"	S-01, D
SB-010(A)-2 (P3H0921-06) Soil Sampled: 08/27/03 10:30 Received: 08/28/03 15:20										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090143	09/04/03	09/04/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	82.4 %		50-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-010(A)-7.5 (P3H0921-07) Soil Sampled: 08/27/03 10:41 Received: 08/28/03 15:20										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090143	09/04/03	09/04/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	74.5 %		50-150			"	"	"	"	
SB-002(A)-2.5 (P3H0921-08) Soil Sampled: 08/27/03 13:05 Received: 08/28/03 15:20										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090143	09/04/03	09/04/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	76.4 %		50-150			"	"	"	"	
SB-002(A)-7.5 (P3H0921-09) Soil Sampled: 08/27/03 13:14 Received: 08/28/03 15:20										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090143	09/04/03	09/04/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	79.4 %		50-150			"	"	"	"	
SB-001(A)-7.5 (P3H0921-10) Soil Sampled: 08/27/03 15:24 Received: 08/28/03 15:20										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090143	09/04/03	09/04/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	84.8 %		50-150			"	"	"	"	
SB-019(A)-2.5 (P3H0921-11) Soil Sampled: 08/27/03 17:25 Received: 08/28/03 15:20										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090143	09/04/03	09/04/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	80.5 %		50-150			"	"	"	"	
SB-019(A)-7.5 (P3H0921-12) Soil Sampled: 08/27/03 17:33 Received: 08/28/03 15:20										
Diesel Range Organics	2370	12.5	25.0	mg/kg dry	1	3090143	09/04/03	09/04/03	NWTPH-Dx	
Heavy Oil Range Hydrocarbons	67.8	25.0	50.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctadecane	133 %		50-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-627(N)-2 (P3H0921-13) Soil Sampled: 08/28/03 08:30 Received: 08/28/03 15:20										
Diesel Range Organics	132	62.5	125	mg/kg dry	5	3090143	09/04/03	09/04/03	NWTPH-Dx	D
Heavy Oil Range Hydrocarbons	239	125	235	"	"	"	"	"	"	R-07, D
<i>Surrogate: 1-Chlorooctadecane</i>	<i>97.7 %</i>		<i>50-150</i>			"	"	"	"	D
SB-629(N)-7.5 (P3H0921-15) Soil Sampled: 08/28/03 10:10 Received: 08/28/03 15:20										
Diesel Range Organics	10800	250	500	mg/kg dry	20	3090143	09/04/03	09/05/03	NWTPH-Dx	D
Heavy Oil Range Hydrocarbons	ND	500	1000	"	"	"	"	"	"	R-05, D, U
<i>Surrogate: 1-Chlorooctadecane</i>	<i>229 %</i>		<i>50-150</i>			"	"	"	"	S-02, D

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 11/12/03 15:11

**Total Metals per EPA 6000/7000 Series Methods
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-008(A)-2 (P3H0921-01) Soil Sampled: 08/26/03 14:40 Received: 08/28/03 15:20										
Lead	7.09	0.106	0.500	mg/kg dry	1	3090252	09/05/03	09/10/03	EPA 6020	
SB-008(A)-7.5 (P3H0921-02) Soil Sampled: 08/26/03 14:50 Received: 08/28/03 15:20										
Lead	4.24	0.0891	0.420	mg/kg dry	1	3090252	09/05/03	09/10/03	EPA 6020	D
SB-007(A)-7.5 (P3H0921-03) Soil Sampled: 08/26/03 17:28 Received: 08/28/03 15:20										
Lead	4.51	0.106	0.500	mg/kg dry	1	3090252	09/05/03	09/10/03	EPA 6020	
SB-009(A)-2 (P3H0921-04) Soil Sampled: 08/27/03 08:36 Received: 08/28/03 15:20										
Lead	4.66	0.106	0.500	mg/kg dry	1	3090252	09/05/03	09/10/03	EPA 6020	
SB-009(A)-7.5 (P3H0921-05) Soil Sampled: 08/27/03 08:48 Received: 08/28/03 15:20										
Lead	3.27	0.106	0.500	mg/kg dry	1	3090252	09/05/03	09/10/03	EPA 6020	
SB-010(A)-2 (P3H0921-06) Soil Sampled: 08/27/03 10:30 Received: 08/28/03 15:20										
Lead	2.76	0.106	0.500	mg/kg dry	1	3090252	09/05/03	09/10/03	EPA 6020	
SB-010(A)-7.5 (P3H0921-07) Soil Sampled: 08/27/03 10:41 Received: 08/28/03 15:20										
Lead	2.86	0.106	0.500	mg/kg dry	1	3090252	09/05/03	09/10/03	EPA 6020	
SB-002(A)-2.5 (P3H0921-08) Soil Sampled: 08/27/03 13:05 Received: 08/28/03 15:20										
Lead	2.51	0.0955	0.450	mg/kg dry	1	3090252	09/05/03	09/10/03	EPA 6020	D
SB-002(A)-7.5 (P3H0921-09) Soil Sampled: 08/27/03 13:14 Received: 08/28/03 15:20										
Lead	2.72	0.106	0.500	mg/kg dry	1	3090252	09/05/03	09/10/03	EPA 6020	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-001(A)-7.5 (P3H0921-10) Soil Sampled: 08/27/03 15:24 Received: 08/28/03 15:20										
Lead	8.43	0.106	0.500	mg/kg dry	1	3090252	09/05/03	09/10/03	EPA 6020	
SB-019(A)-2.5 (P3H0921-11) Soil Sampled: 08/27/03 17:25 Received: 08/28/03 15:20										
Lead	2.62	0.106	0.500	mg/kg dry	1	3090252	09/05/03	09/10/03	EPA 6020	
SB-019(A)-7.5 (P3H0921-12) Soil Sampled: 08/27/03 17:33 Received: 08/28/03 15:20										
Lead	7.44	0.106	0.500	mg/kg dry	1	3090252	09/05/03	09/10/03	EPA 6020	
SB-627(N)-2 (P3H0921-13) Soil Sampled: 08/28/03 08:30 Received: 08/28/03 15:20										
Lead	31.4	0.106	0.500	mg/kg dry	1	3090252	09/05/03	09/10/03	EPA 6020	
SB-629(N)-7.5 (P3H0921-15) Soil Sampled: 08/28/03 10:10 Received: 08/28/03 15:20										
Lead	2.49	0.106	0.500	mg/kg dry	1	3090252	09/05/03	09/10/03	EPA 6020	

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-008(A)-2 (P3H0921-01) Soil Sampled: 08/26/03 14:40 Received: 08/28/03 15:20

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090037	09/02/03	09/07/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	98.6 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	108 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	103 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	112 %		42.1-144			"	"	"	"	

SB-008(A)-7.5 (P3H0921-02) Soil Sampled: 08/26/03 14:50 Received: 08/28/03 15:20

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090037	09/02/03	09/07/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	86.4 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	97.5 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	87.6 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	101 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-007(A)-7.5 (P3H0921-03) Soil Sampled: 08/26/03 17:28 Received: 08/28/03 15:20

1,2-Dibromoethane	ND	580	2500	ug/kg dry	50	3090037	09/02/03	09/07/03	EPA 8260B	D, U
1,2-Dichloroethane	ND	560	2500	"	"	"	"	"	"	D, U
Benzene	1190	222	2500	"	"	"	"	"	"	J, D
Toluene	1240	314	2500	"	"	"	"	"	"	J, D
Ethylbenzene	68800	470	2500	"	"	"	"	"	"	D
Xylenes (total)	120000	1310	5000	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	595	10000	"	"	"	"	"	"	D, U
Naphthalene	53400	705	10000	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	247000	338	5000	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	58000	466	2500	"	"	"	"	"	"	D
Isopropylbenzene	7300	478	10000	"	"	"	"	"	"	J, D
n-Propylbenzene	38200	494	2500	"	"	"	"	"	"	D
Surrogate: 4-BFB	170 %		42.6-130			"	"	"	"	S-09, D
Surrogate: 1,2-DCA-d4	165 %		57.3-144			"	"	"	"	S-09, D
Surrogate: Dibromofluoromethane	145 %		45.5-130			"	"	"	"	S-09, D
Surrogate: Toluene-d8	140 %		42.1-144			"	"	"	"	D

SB-009(A)-2 (P3H0921-04) Soil Sampled: 08/27/03 08:36 Received: 08/28/03 15:20

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090037	09/02/03	09/07/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	208	14.1	200	"	"	"	"	"	"	R-09
1,2,4-Trimethylbenzene	43.8	6.75	100	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	10.9	9.33	50.0	"	"	"	"	"	"	J
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	98.2 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	104 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	97.7 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	109 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-009(A)-7.5 (P3H0921-05) Soil Sampled: 08/27/03 08:48 Received: 08/28/03 15:20										
1,2-Dibromoethane	ND	116	500	ug/kg dry	10	3090037	09/02/03	09/07/03	EPA 8260B	D, U
1,2-Dichloroethane	ND	112	500	"	"	"	"	"	"	D, U
Benzene	309	44.4	500	"	"	"	"	"	"	J, D
Toluene	245	62.9	500	"	"	"	"	"	"	J, D
Ethylbenzene	4720	94.0	500	"	"	"	"	"	"	D
Xylenes (total)	1320	262	1000	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	119	2000	"	"	"	"	"	"	D, U
Naphthalene	11300	141	2000	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	2470	67.5	1000	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	2620	93.3	500	"	"	"	"	"	"	D
Isopropylbenzene	1600	95.5	2000	"	"	"	"	"	"	J, D
n-Propylbenzene	3900	98.9	500	"	"	"	"	"	"	D
Surrogate: 4-BFB	124 %		42.6-130			"	"	"	"	D
Surrogate: 1,2-DCA-d4	111 %		57.3-144			"	"	"	"	D
Surrogate: Dibromofluoromethane	93.9 %		45.5-130			"	"	"	"	D
Surrogate: Toluene-d8	110 %		42.1-144			"	"	"	"	D

SB-010(A)-2 (P3H0921-06) Soil Sampled: 08/27/03 10:30 Received: 08/28/03 15:20

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090037	09/02/03	09/07/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	262	14.1	200	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	10.5	6.75	100	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	98.6 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	106 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	100 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	110 %		42.1-144			"	"	"	"	

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P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-010(A)-7.5 (P3H0921-07) Soil Sampled: 08/27/03 10:41 Received: 08/28/03 15:20

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090037	09/02/03	09/07/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	43.8	14.1	200	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	95.8 %		42.6-130			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	95.8 %		57.3-144			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	89.7 %		45.5-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	104 %		42.1-144			"	"	"	"	

SB-002(A)-2.5 (P3H0921-08) Soil Sampled: 08/27/03 13:05 Received: 08/28/03 15:20

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090037	09/02/03	09/07/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	92.9 %		42.6-130			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	97.1 %		57.3-144			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	90.5 %		45.5-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	105 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

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North Creek Analytical, Inc.
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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-002(A)-7.5 (P3H0921-09) Soil Sampled: 08/27/03 13:14 Received: 08/28/03 15:20

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090037	09/02/03	09/07/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	28.7	14.1	200	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	<i>95.0 %</i>		<i>42.6-130</i>							
<i>Surrogate: 1,2-DCA-d4</i>	<i>97.3 %</i>		<i>57.3-144</i>							
<i>Surrogate: Dibromofluoromethane</i>	<i>87.7 %</i>		<i>45.5-130</i>							
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>		<i>42.1-144</i>							

SB-001(A)-7.5 (P3H0921-10) Soil Sampled: 08/27/03 15:24 Received: 08/28/03 15:20

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090037	09/02/03	09/07/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	<i>88.7 %</i>		<i>42.6-130</i>							
<i>Surrogate: 1,2-DCA-d4</i>	<i>91.2 %</i>		<i>57.3-144</i>							
<i>Surrogate: Dibromofluoromethane</i>	<i>84.9 %</i>		<i>45.5-130</i>							
<i>Surrogate: Toluene-d8</i>	<i>95.8 %</i>		<i>42.1-144</i>							

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-019(A)-2.5 (P3H0921-11) Soil Sampled: 08/27/03 17:25 Received: 08/28/03 15:20

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090037	09/02/03	09/07/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	93.8 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	96.7 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	87.2 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	104 %		42.1-144			"	"	"	"	

SB-019(A)-7.5 (P3H0921-12) Soil Sampled: 08/27/03 17:33 Received: 08/28/03 15:20

1,2-Dibromoethane	ND	580	2500	ug/kg dry	50	3090037	09/02/03	09/09/03	EPA 8260B	D, U
1,2-Dichloroethane	ND	560	2500	"	"	"	"	"	"	D, U
Benzene	ND	222	2500	"	"	"	"	"	"	D, U
Toluene	2380	314	2500	"	"	"	"	"	"	J, D
Ethylbenzene	53300	470	2500	"	"	"	"	"	"	D
Xylenes (total)	134000	1310	5000	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	595	10000	"	"	"	"	"	"	D, U
Naphthalene	85300	705	10000	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	288000	338	5000	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	46300	466	2500	"	"	"	"	"	"	D
Isopropylbenzene	8760	478	10000	"	"	"	"	"	"	J, D
n-Propylbenzene	38300	494	2500	"	"	"	"	"	"	D
Surrogate: 4-BFB	148 %		42.6-130			"	"	"	"	S-09, D
Surrogate: 1,2-DCA-d4	112 %		57.3-144			"	"	"	"	D
Surrogate: Dibromofluoromethane	92.6 %		45.5-130			"	"	"	"	D
Surrogate: Toluene-d8	105 %		42.1-144			"	"	"	"	D

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Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-627(N)-2 (P3H0921-13) Soil Sampled: 08/28/03 08:30 Received: 08/28/03 15:20

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090037	09/02/03	09/09/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	30.2	6.29	50.0	"	"	"	"	"	"	J
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	33.5	14.1	200	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	19.4	6.75	100	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	89.4 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	104 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	97.7 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	104 %		42.1-144			"	"	"	"	

SB-629(N)-7.5 (P3H0921-15) Soil Sampled: 08/28/03 10:10 Received: 08/28/03 15:20

1,2-Dibromoethane	ND	116	500	ug/kg dry	10	3090037	09/02/03	09/09/03	EPA 8260B	D, U
1,2-Dichloroethane	ND	112	500	"	"	"	"	"	"	D, U
Benzene	131	44.4	500	"	"	"	"	"	"	J, D
Toluene	ND	62.9	500	"	"	"	"	"	"	D, U
Ethylbenzene	6100	94.0	500	"	"	"	"	"	"	D
Xylenes (total)	37900	262	1000	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	119	2000	"	"	"	"	"	"	D, U
Naphthalene	25500	141	2000	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	36200	67.5	1000	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	11600	93.3	500	"	"	"	"	"	"	D
Isopropylbenzene	3190	95.5	2000	"	"	"	"	"	"	D
n-Propylbenzene	7180	98.9	500	"	"	"	"	"	"	D
Surrogate: 4-BFB	107 %		42.6-130			"	"	"	"	D
Surrogate: 1,2-DCA-d4	102 %		57.3-144			"	"	"	"	D
Surrogate: Dibromofluoromethane	92.7 %		45.5-130			"	"	"	"	D
Surrogate: Toluene-d8	99.1 %		42.1-144			"	"	"	"	D

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-008(A)-2 (P3H0921-01) Soil Sampled: 08/26/03 14:40 Received: 08/28/03 15:20 R-05										
Acenaphthene	98.7	66.0	268	ug/kg dry	20	3090090	09/03/03	09/11/03	EPA 8270m	J, D
Acenaphthylene	ND	66.0	268	"	"	"	"	"	"	D, U
Anthracene	207	66.0	268	"	"	"	"	"	"	J, D
Benzo (a) anthracene	2530	66.0	268	"	"	"	"	"	"	D
Benzo (a) pyrene	2590	66.0	268	"	"	"	"	"	"	D
Benzo (b) fluoranthene	3140	66.0	268	"	"	"	"	"	"	D
Benzo (ghi) perylene	1780	66.0	268	"	"	"	"	"	"	D
Benzo (k) fluoranthene	1670	66.0	268	"	"	"	"	"	"	D
Chrysene	3050	66.0	268	"	"	"	"	"	"	D
Dibenzo (a,h) anthracene	661	66.0	268	"	"	"	"	"	"	D
Fluoranthene	3920	66.0	268	"	"	"	"	"	"	D
Fluorene	ND	66.0	268	"	"	"	"	"	"	D, U
Indeno (1,2,3-cd) pyrene	1640	66.0	268	"	"	"	"	"	"	D
Naphthalene	ND	66.0	268	"	"	"	"	"	"	D, U
Phenanthrene	1050	66.0	268	"	"	"	"	"	"	D
Pyrene	3580	66.0	268	"	"	"	"	"	"	D
Surrogate: Fluorene-d10	86.4 %		40-150			"	"	"	"	D
Surrogate: Pyrene-d10	97.8 %		40-150			"	"	"	"	D
Surrogate: Benzo (a) pyrene-d12	98.2 %		40-150			"	"	"	"	D

SB-008(A)-7.5 (P3H0921-02) Soil Sampled: 08/26/03 14:50 Received: 08/28/03 15:20

Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090090	09/03/03	09/09/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-008(A)-7.5 (P3H0921-02) Soil Sampled: 08/26/03 14:50 Received: 08/28/03 15:20										
Naphthalene	ND	3.30	13.4	ug/kg dry	1	3090090	09/03/03	09/09/03	EPA 8270m	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	74.8 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	97.7 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	87.1 %		40-150			"	"	"	"	
SB-007(A)-7.5 (P3H0921-03) Soil Sampled: 08/26/03 17:28 Received: 08/28/03 15:20										
Acenaphthene	1460	660	2680	ug/kg dry	200	3090090	09/03/03	09/11/03	EPA 8270m	R-03, J, D
Acenaphthylene	ND	660	2680	"	"	"	"	"	"	R-03, D, U
Anthracene	526	66.0	268	"	20	"	"	09/10/03	"	D
Benzo (a) anthracene	ND	66.0	268	"	"	"	"	"	"	D, U
Benzo (a) pyrene	ND	66.0	268	"	"	"	"	"	"	D, U
Benzo (b) fluoranthene	ND	66.0	268	"	"	"	"	"	"	D, U
Benzo (ghi) perylene	ND	66.0	268	"	"	"	"	"	"	D, U
Benzo (k) fluoranthene	ND	66.0	268	"	"	"	"	"	"	D, U
Chrysene	79.7	66.0	268	"	"	"	"	"	"	J, D
Dibenzo (a,h) anthracene	ND	66.0	268	"	"	"	"	"	"	D, U
Fluoranthene	128	66.0	268	"	"	"	"	"	"	J, D
Fluorene	3220	660	2680	"	200	"	"	09/11/03	"	D
Indeno (1,2,3-cd) pyrene	ND	66.0	268	"	20	"	"	09/10/03	"	D, U
Naphthalene	44900	660	2680	"	200	"	"	09/11/03	"	D
Phenanthrene	5250	66.0	268	"	20	"	"	09/10/03	"	D
Pyrene	388	66.0	268	"	"	"	"	"	"	D
Surrogate: Fluorene-d10	NR		40-150			"	"	09/11/03	"	S-01, D
Surrogate: Pyrene-d10	104 %		40-150			"	"	09/10/03	"	D
Surrogate: Benzo (a) pyrene-d12	102 %		40-150			"	"	"	"	D

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-009(A)-2 (P3H0921-04) Soil Sampled: 08/27/03 08:36 Received: 08/28/03 15:20

Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090221	09/05/03	09/10/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	81.0 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	102 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	88.4 %		40-150			"	"	"	"	

SB-009(A)-7.5 (P3H0921-05) Soil Sampled: 08/27/03 08:48 Received: 08/28/03 15:20

R-05

Acenaphthene	ND	2680	2680	ug/kg dry	200	3090221	09/05/03	09/10/03	EPA 8270m	R-03, D, U
Acenaphthylene	ND	2680	2680	"	"	"	"	"	"	R-03, D, U
Anthracene	2170	660	2680	"	"	"	"	"	"	R-03, J, D
Benzo (a) anthracene	ND	66.0	268	"	20	"	"	09/10/03	"	D, U
Benzo (a) pyrene	ND	66.0	268	"	"	"	"	"	"	D, U
Benzo (b) fluoranthene	ND	66.0	268	"	"	"	"	"	"	D, U
Benzo (ghi) perylene	ND	66.0	268	"	"	"	"	"	"	D, U
Benzo (k) fluoranthene	ND	66.0	268	"	"	"	"	"	"	D, U
Chrysene	79.8	66.0	268	"	"	"	"	"	"	J, D
Dibenzo (a,h) anthracene	ND	66.0	268	"	"	"	"	"	"	D, U
Fluoranthene	ND	660	2680	"	200	"	"	09/10/03	"	R-03, D, U
Fluorene	7800	660	2680	"	"	"	"	"	"	D
Indeno (1,2,3-cd) pyrene	ND	66.0	268	"	20	"	"	09/10/03	"	D, U

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

North Creek Analytical, Inc.
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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-009(A)-7.5 (P3H0921-05) Soil Sampled: 08/27/03 08:48 Received: 08/28/03 15:20 R-05										
Naphthalene	10500	660	2680	ug/kg dry	200	3090221	09/05/03	09/10/03	EPA 8270m	D
Phenanthrene	16400	660	2680	"	"	"	"	"	"	D
Pyrene	969	66.0	268	"	20	"	"	09/10/03	"	D
<i>Surrogate: Fluorene-d10</i>	<i>NR</i>		<i>40-150</i>			"	"	<i>09/10/03</i>	"	<i>S-01, D</i>
<i>Surrogate: Pyrene-d10</i>	<i>NR</i>		<i>40-150</i>			"	"	<i>09/10/03</i>	"	<i>S-02, D</i>
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>64.3 %</i>		<i>40-150</i>			"	"	"	"	<i>J, D</i>
SB-010(A)-2 (P3H0921-06) Soil Sampled: 08/27/03 10:30 Received: 08/28/03 15:20										
Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090221	09/05/03	09/11/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
<i>Surrogate: Fluorene-d10</i>	<i>77.0 %</i>		<i>40-150</i>			"	"	"	"	
<i>Surrogate: Pyrene-d10</i>	<i>92.8 %</i>		<i>40-150</i>			"	"	"	"	
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>87.6 %</i>		<i>40-150</i>			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-010(A)-7.5 (P3H0921-07) Soil Sampled: 08/27/03 10:41 Received: 08/28/03 15:20

Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090221	09/05/03	09/11/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	80.8 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	94.9 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	89.2 %		40-150			"	"	"	"	

SB-002(A)-2.5 (P3H0921-08) Soil Sampled: 08/27/03 13:05 Received: 08/28/03 15:20

Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090221	09/05/03	09/11/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

North Creek Analytical, Inc.
Environmental Laboratory Network



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-002(A)-2.5 (P3H0921-08) Soil Sampled: 08/27/03 13:05 Received: 08/28/03 15:20										
Naphthalene	ND	3.30	13.4	ug/kg dry	1	3090221	09/05/03	09/11/03	EPA 8270m	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	78.8 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	93.7 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	80.3 %		40-150			"	"	"	"	
SB-002(A)-7.5 (P3H0921-09) Soil Sampled: 08/27/03 13:14 Received: 08/28/03 15:20										
Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090221	09/05/03	09/11/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	49.0 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	59.7 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	55.7 %		40-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-001(A)-7.5 (P3H0921-10) Soil Sampled: 08/27/03 15:24 Received: 08/28/03 15:20										
Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090221	09/05/03	09/11/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	5.16	3.30	13.4	"	"	"	"	"	"	J
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	81.7 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	93.1 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	89.2 %		40-150			"	"	"	"	

SB-019(A)-2.5 (P3H0921-11) Soil Sampled: 08/27/03 17:25 Received: 08/28/03 15:20

Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090221	09/05/03	09/11/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U

North Creek Analytical - Portland

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Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-019(A)-2.5 (P3H0921-11) Soil Sampled: 08/27/03 17:25 Received: 08/28/03 15:20										
Naphthalene	ND	3.30	13.4	ug/kg dry	1	3090221	09/05/03	09/11/03	EPA 8270m	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	69.5 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	96.8 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	93.4 %		40-150			"	"	"	"	
SB-019(A)-7.5 (P3H0921-12) Soil Sampled: 08/27/03 17:33 Received: 08/28/03 15:20										
Acenaphthene	449	165	670	ug/kg dry	50	3090221	09/05/03	09/11/03	EPA 8270m	J, D
Acenaphthylene	ND	165	670	"	"	"	"	"	"	D, U
Anthracene	220	165	670	"	"	"	"	"	"	J, D
Benzo (a) anthracene	ND	165	670	"	"	"	"	"	"	D, U
Benzo (a) pyrene	ND	165	670	"	"	"	"	"	"	D, U
Benzo (b) fluoranthene	ND	165	670	"	"	"	"	"	"	D, U
Benzo (ghi) perylene	ND	165	670	"	"	"	"	"	"	D, U
Benzo (k) fluoranthene	ND	165	670	"	"	"	"	"	"	D, U
Chrysene	ND	165	670	"	"	"	"	"	"	D, U
Dibenzo (a,h) anthracene	ND	165	670	"	"	"	"	"	"	D, U
Fluoranthene	ND	165	670	"	"	"	"	"	"	D, U
Fluorene	823	165	670	"	"	"	"	"	"	D
Indeno (1,2,3-cd) pyrene	ND	165	670	"	"	"	"	"	"	D, U
Naphthalene	35600	165	670	"	"	"	"	"	"	D
Phenanthrene	2330	165	670	"	"	"	"	"	"	D
Pyrene	336	165	670	"	"	"	"	"	"	J, D
Surrogate: Fluorene-d10	NR		40-150			"	"	"	"	S-01, D
Surrogate: Pyrene-d10	NR		40-150			"	"	"	"	S-01, D
Surrogate: Benzo (a) pyrene-d12	NR		40-150			"	"	"	"	S-01, D

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Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-627(N)-2 (P3H0921-13) Soil Sampled: 08/28/03 08:30 Received: 08/28/03 15:20 R-05										
Acenaphthene	ND	16.5	67.0	ug/kg dry	2	3090221	09/05/03	09/11/03	EPA 8270m	D, U
Acenaphthylene	ND	16.5	67.0	"	"	"	"	"	"	D, U
Anthracene	ND	16.5	67.0	"	"	"	"	"	"	D, U
Benzo (a) anthracene	38.7	16.5	67.0	"	"	"	"	"	"	J, D
Benzo (a) pyrene	57.7	16.5	67.0	"	"	"	"	"	"	J, D
Benzo (b) fluoranthene	75.9	16.5	67.0	"	"	"	"	"	"	D
Benzo (ghi) perylene	119	16.5	67.0	"	"	"	"	"	"	D
Benzo (k) fluoranthene	43.3	16.5	67.0	"	"	"	"	"	"	J, D
Chrysene	62.9	16.5	67.0	"	"	"	"	"	"	J, D
Dibenzo (a,h) anthracene	22.7	16.5	67.0	"	"	"	"	"	"	J, D
Fluoranthene	52.6	16.5	67.0	"	"	"	"	"	"	J, D
Fluorene	ND	16.5	67.0	"	"	"	"	"	"	D, U
Indeno (1,2,3-cd) pyrene	74.3	16.5	67.0	"	"	"	"	"	"	D
Naphthalene	29.1	16.5	67.0	"	"	"	"	"	"	J, D
Phenanthrene	38.5	16.5	67.0	"	"	"	"	"	"	J, D
Pyrene	74.0	16.5	67.0	"	"	"	"	"	"	D
Surrogate: Fluorene-d10	75.3 %		40-150			"	"	"	"	D
Surrogate: Pyrene-d10	87.3 %		40-150			"	"	"	"	D
Surrogate: Benzo (a) pyrene-d12	84.8 %		40-150			"	"	"	"	D

SB-629(N)-7.5 (P3H0921-15) Soil Sampled: 08/28/03 10:10 Received: 08/28/03 15:20 R-05										
Acenaphthene	ND	3020	3020	ug/kg dry	50	3090221	09/05/03	09/11/03	EPA 8270m	R-03, D, U
Acenaphthylene	ND	1340	1340	"	"	"	"	"	"	R-03, D, U
Anthracene	1350	165	670	"	"	"	"	"	"	D
Benzo (a) anthracene	ND	165	670	"	"	"	"	"	"	D, U
Benzo (a) pyrene	ND	165	670	"	"	"	"	"	"	D, U
Benzo (b) fluoranthene	ND	165	670	"	"	"	"	"	"	D, U
Benzo (ghi) perylene	ND	165	670	"	"	"	"	"	"	D, U
Benzo (k) fluoranthene	ND	165	670	"	"	"	"	"	"	D, U
Chrysene	ND	165	670	"	"	"	"	"	"	D, U
Dibenzo (a,h) anthracene	ND	165	670	"	"	"	"	"	"	D, U
Fluoranthene	ND	670	670	"	"	"	"	"	"	D, U
Fluorene	7060	165	670	"	"	"	"	"	"	D

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Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 11/12/03 15:11

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-629(N)-7.5 (P3H0921-15) Soil Sampled: 08/28/03 10:10 Received: 08/28/03 15:20 R-05										
Indeno (1,2,3-cd) pyrene	ND	165	670	ug/kg dry	50	3090221	09/05/03	09/11/03	EPA 8270m	D, U
Naphthalene	25500	165	670	"	"	"	"	"	"	D
Phenanthrene	13000	165	670	"	"	"	"	"	"	D
Pyrene	671	165	670	"	"	"	"	"	"	D
<i>Surrogate: Fluorene-d10</i>	<i>NR</i>		<i>40-150</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>S-01, D</i>
<i>Surrogate: Pyrene-d10</i>	<i>NR</i>		<i>40-150</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>S-01, D</i>
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>NR</i>		<i>40-150</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>S-01, D</i>

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Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Percent Dry Weight (Solids) per Standard Methods
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-008(A)-2 (P3H0921-01) Soil Sampled: 08/26/03 14:40 Received: 08/28/03 15:20										
% Solids	96.3	1.00	1.00% by Weigh		1	3090107	09/03/03	09/04/03	NCA SOP	
SB-008(A)-7.5 (P3H0921-02) Soil Sampled: 08/26/03 14:50 Received: 08/28/03 15:20										
% Solids	82.8	1.00	1.00% by Weigh		1	3090107	09/03/03	09/04/03	NCA SOP	
SB-007(A)-7.5 (P3H0921-03) Soil Sampled: 08/26/03 17:28 Received: 08/28/03 15:20										
% Solids	92.5	1.00	1.00% by Weigh		1	3090107	09/03/03	09/04/03	NCA SOP	
SB-009(A)-2 (P3H0921-04) Soil Sampled: 08/27/03 08:36 Received: 08/28/03 15:20										
% Solids	91.3	1.00	1.00% by Weigh		1	3090107	09/03/03	09/04/03	NCA SOP	
SB-009(A)-7.5 (P3H0921-05) Soil Sampled: 08/27/03 08:48 Received: 08/28/03 15:20										
% Solids	94.0	1.00	1.00% by Weigh		1	3090107	09/03/03	09/04/03	NCA SOP	
SB-010(A)-2 (P3H0921-06) Soil Sampled: 08/27/03 10:30 Received: 08/28/03 15:20										
% Solids	94.8	1.00	1.00% by Weigh		1	3090107	09/03/03	09/04/03	NCA SOP	
SB-010(A)-7.5 (P3H0921-07) Soil Sampled: 08/27/03 10:41 Received: 08/28/03 15:20										
% Solids	93.5	1.00	1.00% by Weigh		1	3090107	09/03/03	09/04/03	NCA SOP	
SB-002(A)-2.5 (P3H0921-08) Soil Sampled: 08/27/03 13:05 Received: 08/28/03 15:20										
% Solids	95.3	1.00	1.00% by Weigh		1	3090107	09/03/03	09/04/03	NCA SOP	
SB-002(A)-7.5 (P3H0921-09) Soil Sampled: 08/27/03 13:14 Received: 08/28/03 15:20										
% Solids	90.7	1.00	1.00% by Weigh		1	3090107	09/03/03	09/04/03	NCA SOP	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Percent Dry Weight (Solids) per Standard Methods
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-001(A)-7.5 (P3H0921-10) Soil Sampled: 08/27/03 15:24 Received: 08/28/03 15:20										
% Solids	83.9	1.00	1.00% by Weigh		1	3090107	09/03/03	09/04/03	NCA SOP	
SB-019(A)-2.5 (P3H0921-11) Soil Sampled: 08/27/03 17:25 Received: 08/28/03 15:20										
% Solids	94.7	1.00	1.00% by Weigh		1	3090107	09/03/03	09/04/03	NCA SOP	
SB-019(A)-7.5 (P3H0921-12) Soil Sampled: 08/27/03 17:33 Received: 08/28/03 15:20										
% Solids	92.4	1.00	1.00% by Weigh		1	3090107	09/03/03	09/04/03	NCA SOP	
SB-627(N)-2 (P3H0921-13) Soil Sampled: 08/28/03 08:30 Received: 08/28/03 15:20										
% Solids	92.6	1.00	1.00% by Weigh		1	3090107	09/03/03	09/04/03	NCA SOP	
SB-629(N)-7.5 (P3H0921-15) Soil Sampled: 08/28/03 10:10 Received: 08/28/03 15:20										
% Solids	91.6	1.00	1.00% by Weigh		1	3090107	09/03/03	09/04/03	NCA SOP	

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Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Gasoline Hydrocarbons per NW TPH-Gx Method - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090053: Prepared 09/02/03 Using EPA 5035

Blank (3090053-BLK1)

Gasoline Range Hydrocarbons	2.60	2.50	4.00	mg/kg							J
Surrogate: a,a,a-TFT	3.42			"	2.50		137	50-150			

LCS (3090053-BS1)

Gasoline Range Hydrocarbons	72.3	2.50	4.00	mg/kg	62.5		116	70-130			
Surrogate: a,a,a-TFT	2.88			"	2.50		115	50-150			

Duplicate (3090053-DUP1)

Source: P3H0881-01

Gasoline Range Hydrocarbons	33.1	2.50	4.00	mg/kg dry		15.6			71.9	40	Q-14
Surrogate: a,a,a-TFT	3.72			"	3.07		121	50-150			

Duplicate (3090053-DUP2)

Source: P3H0881-02

Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry		24.8				40	U
Surrogate: a,a,a-TFT	1.98			"	2.67		74.2	50-150			

Batch 3090079: Prepared 09/03/03 Using EPA 5035

Blank (3090079-BLK1)

Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg							U
Surrogate: a,a,a-TFT	2.13			"	2.50		85.2	50-150			

LCS (3090079-BS1)

Gasoline Range Hydrocarbons	60.8	2.50	4.00	mg/kg	62.5		97.3	70-130			
Surrogate: a,a,a-TFT	3.00			"	2.50		120	50-150			

Duplicate (3090079-DUP1)

Source: P3H0921-07

Gasoline Range Hydrocarbons	6.49	2.50	4.00	mg/kg dry		2.76			80.6	40	Q-14
Surrogate: a,a,a-TFT	2.23			"	2.67		83.5	50-150			

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Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 11/12/03 15:11

Gasoline Hydrocarbons per NW TPH-Gx Method - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090079: Prepared 09/03/03 Using EPA 5035

Duplicate (3090079-DUP2)

Source: P3I0004-01

Gasoline Range Hydrocarbons	ND	2.50	4.00 mg/kg dry			3.59				40	U
Surrogate: a,a,a-TFT	3.16			"	2.88		110	50-150			

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Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 11/12/03 15:11

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090143: Prepared 09/04/03 Using EPA 3550 Fuels

Blank (3090143-BLK1)

Diesel Range Organics	ND	12.5	25.0	mg/kg							U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"							U
<i>Surrogate: 1-Chlorooctadecane</i>	<i>3.91</i>			"	<i>4.80</i>		<i>81.5</i>	<i>50-150</i>			

LCS (3090143-BS1)

Diesel Range Organics	100	12.5	25.0	mg/kg	125		80.0	50-150			
Heavy Oil Range Hydrocarbons	60.6	25.0	50.0	"	75.0		80.8	50-150			
<i>Surrogate: 1-Chlorooctadecane</i>	<i>4.64</i>			"	<i>4.80</i>		<i>96.7</i>	<i>50-150</i>			

Duplicate (3090143-DUP1)

Source: P3H0912-16

Diesel Range Organics	ND	25.0	50.0	mg/kg dry		ND				50	R-05, D, U
Heavy Oil Range Hydrocarbons	277	50.0	100	"		238			15.1	50	D
<i>Surrogate: 1-Chlorooctadecane</i>	<i>4.98</i>			"	<i>6.18</i>		<i>80.6</i>	<i>50-150</i>			D

Duplicate (3090143-DUP2)

Source: P3H0912-17

Diesel Range Organics	ND	12.5	25.0	mg/kg dry		ND				50	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"		ND				50	U
<i>Surrogate: 1-Chlorooctadecane</i>	<i>4.55</i>			"	<i>5.55</i>		<i>82.0</i>	<i>50-150</i>			

North Creek Analytical - Portland

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Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Total Metals per EPA 6000/7000 Series Methods - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3090252: Prepared 09/05/03 Using EPA 3050											
Blank (3090252-BLK2)											
Lead	ND	0.106	0.500	mg/kg							U
LCS (3090252-BS2)											
Lead	11.0	0.106	0.500	mg/kg	10.0		110	80-120			
Duplicate (3090252-DUP1) Source: P3H0921-09											
Lead	4.65	0.106	0.500	mg/kg dry		2.72			52.4	40	Q-14
Matrix Spike (3090252-MS1) Source: P3H0921-09											
Lead	14.3	0.106	0.500	mg/kg dry	10.7	2.72	108	75-125			
Matrix Spike (3090252-MS2) Source: P3H0921-15											
Lead	14.3	0.106	0.500	mg/kg dry	10.9	2.49	108	75-125			

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090037: Prepared 09/02/03 Using EPA 5035

Blank (3090037-BLK1)

1,2-Dibromoethane	ND	11.6	50.0	ug/kg							U
1,2-Dichloroethane	ND	11.2	50.0	"							U
Benzene	ND	4.44	50.0	"							U
Toluene	ND	6.29	50.0	"							U
Ethylbenzene	ND	9.40	50.0	"							U
Xylenes (total)	ND	26.2	100	"							U
Methyl tert-butyl ether	ND	11.9	200	"							U
Naphthalene	ND	14.1	200	"							U
1,2,4-Trimethylbenzene	ND	6.75	100	"							U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"							U
Isopropylbenzene	ND	9.55	200	"							U
n-Propylbenzene	ND	9.89	50.0	"							U
Surrogate: 4-BFB	2040			"	2000		102	42.6-130			
Surrogate: 1,2-DCA-d4	2110			"	2000		106	57.3-144			
Surrogate: Dibromofluoromethane	1790			"	2000		89.5	45.5-130			
Surrogate: Toluene-d8	2190			"	2000		110	42.1-144			

LCS (3090037-BS1)

Benzene	2610	4.44	50.0	ug/kg	2500		104	81.9-125			
Toluene	2510	6.29	50.0	"	2500		100	80-125			
Surrogate: 4-BFB	2020			"	2000		101	42.6-130			
Surrogate: 1,2-DCA-d4	2080			"	2000		104	57.3-144			
Surrogate: Dibromofluoromethane	1860			"	2000		93.0	45.5-130			
Surrogate: Toluene-d8	2150			"	2000		108	42.1-144			

Matrix Spike (3090037-MS1)

Source: P3H0921-01

Benzene	2730	4.44	50.0	ug/kg dry	2600	ND	105	68.5-125			
Toluene	2640	6.29	50.0	"	2600	ND	102	70.3-125			
Surrogate: 4-BFB	2070			"	2080		99.5	42.6-130			
Surrogate: 1,2-DCA-d4	2170			"	2080		104	57.3-144			
Surrogate: Dibromofluoromethane	1950			"	2080		93.8	45.5-130			
Surrogate: Toluene-d8	2230			"	2080		107	42.1-144			

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EnviroLogic Resources, Inc.
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Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090037: Prepared 09/02/03 Using EPA 5035

Matrix Spike Dup (3090037-MSD1)

Source: P3H0921-01

Benzene	2660	4.44	50.0 ug/kg dry		2600	ND	102	68.5-125	2.60	25	
Toluene	2550	6.29	50.0	"	2600	ND	98.1	70.3-125	3.47	25	
Surrogate: 4-BFB	2210			"	2080		106	42.6-130			
Surrogate: 1,2-DCA-d4	2150			"	2080		103	57.3-144			
Surrogate: Dibromofluoromethane	1940			"	2080		93.3	45.5-130			
Surrogate: Toluene-d8	2240			"	2080		108	42.1-144			

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090090: Prepared 09/03/03 Using EPA 3550

Blank (3090090-BLK1)

Acenaphthene	ND	3.30	13.4	ug/kg							U
Acenaphthylene	ND	3.30	13.4	"							U
Anthracene	ND	3.30	13.4	"							U
Benzo (a) anthracene	ND	3.30	13.4	"							U
Benzo (a) pyrene	ND	3.30	13.4	"							U
Benzo (b) fluoranthene	ND	3.30	13.4	"							U
Benzo (ghi) perylene	ND	3.30	13.4	"							U
Benzo (k) fluoranthene	ND	3.30	13.4	"							U
Chrysene	ND	3.30	13.4	"							U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"							U
Fluoranthene	ND	3.30	13.4	"							U
Fluorene	ND	3.30	13.4	"							U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"							U
Naphthalene	ND	3.30	13.4	"							U
Phenanthrene	ND	3.30	13.4	"							U
Pyrene	ND	3.30	13.4	"							U
Surrogate: Fluorene-d10	71.7			"	83.3		86.1	40-150			
Surrogate: Pyrene-d10	89.5			"	83.3		107	40-150			
Surrogate: Benzo (a) pyrene-d12	82.7			"	83.3		99.3	40-150			

LCS (3090090-BS1)

Acenaphthene	156	3.30	13.4	ug/kg	167		93.4	33-139			
Benzo (a) pyrene	183	3.30	13.4	"	167		110	45-149			
Pyrene	176	3.30	13.4	"	167		105	39-138			
Surrogate: Fluorene-d10	71.3			"	83.3		85.6	40-150			
Surrogate: Pyrene-d10	79.7			"	83.3		95.7	40-150			
Surrogate: Benzo (a) pyrene-d12	81.6			"	83.3		98.0	40-150			

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
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Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 3090090: Prepared 09/03/03 Using EPA 3550

Matrix Spike (3090090-MS1)

Source: P3H0872-02

Acenaphthene	174	3.30	13.4 ug/kg dry		193	ND	90.2	33-139			
Benzo (a) pyrene	214	3.30	13.4	"	193	ND	111	45-149			
Pyrene	230	3.30	13.4	"	193	ND	119	39-138			
Surrogate: Fluorene-d10	81.2			"	96.5		84.1	40-150			
Surrogate: Pyrene-d10	93.3			"	96.5		96.7	40-150			
Surrogate: Benzo (a) pyrene-d12	91.0			"	96.5		94.3	40-150			

Matrix Spike Dup (3090090-MSD1)

Source: P3H0872-02

Acenaphthene	176	3.30	13.4 ug/kg dry		193	ND	91.2	33-139	1.14	60	
Benzo (a) pyrene	203	3.30	13.4	"	193	ND	105	45-149	5.28	60	
Pyrene	199	3.30	13.4	"	193	ND	103	39-138	14.5	60	
Surrogate: Fluorene-d10	82.2			"	96.5		85.2	40-150			
Surrogate: Pyrene-d10	92.3			"	96.5		95.6	40-150			
Surrogate: Benzo (a) pyrene-d12	92.0			"	96.5		95.3	40-150			

Batch 3090221: Prepared 09/05/03 Using EPA 3550

Blank (3090221-BLK1)

Acenaphthene	ND	3.30	13.4 ug/kg								U
Acenaphthylene	ND	3.30	13.4	"							U
Anthracene	ND	3.30	13.4	"							U
Benzo (a) anthracene	ND	3.30	13.4	"							U
Benzo (a) pyrene	ND	3.30	13.4	"							U
Benzo (b) fluoranthene	ND	3.30	13.4	"							U
Benzo (ghi) perylene	ND	3.30	13.4	"							U
Benzo (k) fluoranthene	ND	3.30	13.4	"							U
Chrysene	ND	3.30	13.4	"							U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"							U
Fluoranthene	ND	3.30	13.4	"							U
Fluorene	ND	3.30	13.4	"							U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"							U
Naphthalene	ND	3.30	13.4	"							U
Phenanthrene	ND	3.30	13.4	"							U
Pyrene	ND	3.30	13.4	"							U

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Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 3090221: Prepared 09/05/03 Using EPA 3550

Blank (3090221-BLK1)

Surrogate: Fluorene-d10	66.8			ug/kg	83.3		80.2	40-150			
Surrogate: Pyrene-d10	81.6			"	83.3		98.0	40-150			
Surrogate: Benzo (a) pyrene-d12	74.7			"	83.3		89.7	40-150			

LCS (3090221-BS1)

Acenaphthene	147	3.30	13.4	ug/kg	167		88.0	33-139			
Benzo (a) pyrene	169	3.30	13.4	"	167		101	45-149			
Pyrene	171	3.30	13.4	"	167		102	39-138			
Surrogate: Fluorene-d10	68.7			"	83.3		82.5	40-150			
Surrogate: Pyrene-d10	80.1			"	83.3		96.2	40-150			
Surrogate: Benzo (a) pyrene-d12	77.3			"	83.3		92.8	40-150			

Matrix Spike (3090221-MS1)

Source: P3H0907-03

R-05

Acenaphthene	266	33.0	134	ug/kg dry	283	ND	94.0	33-139			D
Benzo (a) pyrene	502	33.0	134	"	283	156	122	45-149			D
Pyrene	715	33.0	134	"	283	308	144	39-138			Q-01, D
Surrogate: Fluorene-d10	117			"	141		83.0	40-150			D
Surrogate: Pyrene-d10	130			"	141		92.2	40-150			D
Surrogate: Benzo (a) pyrene-d12	130			"	141		92.2	40-150			D

Matrix Spike Dup (3090221-MSD1)

Source: P3H0907-03

R-05

Acenaphthene	252	33.0	134	ug/kg dry	283	ND	89.0	33-139	5.41	60	D
Benzo (a) pyrene	437	33.0	134	"	283	156	99.3	45-149	13.8	60	D
Pyrene	557	33.0	134	"	283	308	88.0	39-138	24.8	60	D
Surrogate: Fluorene-d10	114			"	141		80.9	40-150			D
Surrogate: Pyrene-d10	129			"	141		91.5	40-150			D
Surrogate: Benzo (a) pyrene-d12	133			"	141		94.3	40-150			D

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
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Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

**Percent Dry Weight (Solids) per Standard Methods - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3090107: Prepared 09/03/03 Using Dry Weight											
Duplicate (3090107-DUP1)						Source: P3H0893-01					
% Solids	91.4	1.00	1.00	% by Weight		91.9			0.546	20	
Duplicate (3090107-DUP2)						Source: P3H0893-02					
% Solids	68.5	1.00	1.00	% by Weight		68.7			0.292	20	
Duplicate (3090107-DUP3)						Source: P3H0921-11					
% Solids	94.7	1.00	1.00	% by Weight		94.7			0.00	20	
Duplicate (3090107-DUP4)						Source: P3H0921-15					
% Solids	91.6	1.00	1.00	% by Weight		91.6			0.00	20	
Duplicate (3090107-DUP5)						Source: P3I0096-01					
% Solids	88.1	1.00	1.00	% by Weight		88.2			0.113	20	

North Creek Analytical - Portland

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Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 15:11

Notes and Definitions

- A-01 Detected hydrocarbons have distinct peaks that have elution patterns similar to that of PAH's, as well as other extraneous peaks that may be due to biogenic interference.
- D Data reported from a preparation or analytical dilution.
- J Estimated value.
- Q-01 The spike recovery, and/or RPD, for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
- Q-14 The Spike Recovery and/or RPD is outside of control limits due to a non-homogeneous sample matrix.
- R-03 The reporting limit for this analyte was raised due to matrix interference.
- R-05 Reporting limits raised due to dilution necessary for analysis. Sample contains high levels of reported analyte, non-target analyte, and/or matrix interference.
- R-07 Reporting limit raised due to dilution necessary for analysis. Reporting limit adjusted to report quantitation below the MRL, but within the calibration range.
- R-09 Analyte detected below MRL in sample extract. Percent solids calculation raised result above MRL. Result reported as Estimated Value.
- S-01 The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present.
- S-09 Surrogate recovery is outside control limits due to matrix interference.
- U Analyte included in the analysis but not detected.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

North Creek Analytical - Portland

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12 November 2003

Tom Calabrese
EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762
RE: Astoria Area-Wide Petroleum Site

Enclosed are the results of analyses for samples received by the laboratory on 09/04/03 19:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Joy D. Chang For Brian Cone
Industrial Services Manager



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Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 11/12/03 14:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-011(A)-7.5	P3I0189-01	Soil	09/03/03 08:11	09/04/03 19:00
SB-013(A)-7.5	P3I0189-02	Soil	09/03/03 09:49	09/04/03 19:00
SB-912(S)-2	P3I0189-03	Soil	09/03/03 11:48	09/04/03 19:00
SB-912(S)-7	P3I0189-04	Soil	09/03/03 11:55	09/04/03 19:00
SB-913(S)-2	P3I0189-05	Soil	09/03/03 13:17	09/04/03 19:00
SB-913(S)-7	P3I0189-06	Soil	09/03/03 13:55	09/04/03 19:00
SB-914(S)-2	P3I0189-07	Soil	09/03/03 15:18	09/04/03 19:00
SB-914(S)-7.5	P3I0189-08	Soil	09/03/03 15:24	09/04/03 19:00
Equip Blank	P3I0189-09	Water	09/04/03 07:15	09/04/03 19:00
SB-003(A)-5	P3I0189-10	Soil	09/04/03 07:46	09/04/03 19:00
SB-016(A)-7	P3I0189-11	Soil	09/04/03 08:59	09/04/03 19:00
SB-253(C)-2	P3I0189-12	Soil	09/04/03 10:59	09/04/03 19:00
SB-253(C)-7.5	P3I0189-13	Soil	09/04/03 11:00	09/04/03 19:00
SB-255(C)-2.5	P3I0189-14	Soil	09/04/03 12:24	09/04/03 19:00
SB-255(C)-7	P3I0189-15	Soil	09/04/03 12:40	09/04/03 19:00

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Gasoline Hydrocarbons per NW TPH-Gx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-011(A)-7.5 (P3I0189-01) Soil Sampled: 09/03/03 08:11 Received: 09/04/03 19:00										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090343	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	105 %		50-150			"	"	"	"	
SB-013(A)-7.5 (P3I0189-02) Soil Sampled: 09/03/03 09:49 Received: 09/04/03 19:00										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090343	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	70.4 %		50-150			"	"	"	"	
SB-912(S)-2 (P3I0189-03) Soil Sampled: 09/03/03 11:48 Received: 09/04/03 19:00										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090343	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	109 %		50-150			"	"	"	"	
SB-912(S)-7 (P3I0189-04) Soil Sampled: 09/03/03 11:55 Received: 09/04/03 19:00										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090343	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	131 %		50-150			"	"	"	"	
SB-913(S)-2 (P3I0189-05) Soil Sampled: 09/03/03 13:17 Received: 09/04/03 19:00										
Gasoline Range Hydrocarbons	2.58	2.50	4.00	mg/kg dry	1	3090343	09/08/03	09/12/03	NW TPH-G	J
Surrogate: a,a,a-TFT	96.7 %		50-150			"	"	"	"	
SB-913(S)-7 (P3I0189-06) Soil Sampled: 09/03/03 13:55 Received: 09/04/03 19:00										
Gasoline Range Hydrocarbons	4.64	2.50	4.00	mg/kg dry	1	3090343	09/08/03	09/11/03	NW TPH-G	
Surrogate: a,a,a-TFT	101 %		50-150			"	"	"	"	
SB-914(S)-2 (P3I0189-07) Soil Sampled: 09/03/03 15:18 Received: 09/04/03 19:00										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090343	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	85.9 %		50-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Gasoline Hydrocarbons per NW TPH-Gx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-914(S)-7.5 (P3I0189-08) Soil Sampled: 09/03/03 15:24 Received: 09/04/03 19:00										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090343	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	94.8 %		50-150			"	"	"	"	
SB-253(C)-2 (P3I0189-12) Soil Sampled: 09/04/03 10:59 Received: 09/04/03 19:00										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090343	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	62.7 %		50-150			"	"	"	"	
SB-253(C)-7.5 (P3I0189-13) Soil Sampled: 09/04/03 11:00 Received: 09/04/03 19:00										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090343	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	89.9 %		50-150			"	"	"	"	
SB-255(C)-2.5 (P3I0189-14) Soil Sampled: 09/04/03 12:24 Received: 09/04/03 19:00										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090343	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	124 %		50-150			"	"	"	"	
SB-255(C)-7 (P3I0189-15) Soil Sampled: 09/04/03 12:40 Received: 09/04/03 19:00										
Gasoline Range Hydrocarbons	10.0	2.50	4.00	mg/kg dry	1	3090343	09/08/03	09/10/03	NW TPH-G	
Surrogate: a,a,a-TFT	163 %		50-150			"	"	"	"	S-09

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Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-011(A)-7.5 (P3I0189-01) Soil Sampled: 09/03/03 08:11 Received: 09/04/03 19:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090351	09/09/03	09/09/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	88.7 %		50-150			"	"	"	"	
SB-013(A)-7.5 (P3I0189-02) Soil Sampled: 09/03/03 09:49 Received: 09/04/03 19:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090351	09/09/03	09/09/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	92.9 %		50-150			"	"	"	"	
SB-912(S)-2 (P3I0189-03) Soil Sampled: 09/03/03 11:48 Received: 09/04/03 19:00										
Diesel Range Organics	27.8	12.5	25.0	mg/kg dry	1	3090351	09/09/03	09/10/03	NWTPH-Dx	
Heavy Oil Range Hydrocarbons	130	25.0	50.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctadecane	102 %		50-150			"	"	"	"	
SB-912(S)-7 (P3I0189-04) Soil Sampled: 09/03/03 11:55 Received: 09/04/03 19:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090351	09/09/03	09/09/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	87.4 %		50-150			"	"	"	"	
SB-913(S)-2 (P3I0189-05) Soil Sampled: 09/03/03 13:17 Received: 09/04/03 19:00										
Diesel Range Organics	2440	625	1250	mg/kg dry	50	3090351	09/09/03	09/09/03	NWTPH-Dx	D-17, D
Heavy Oil Range Hydrocarbons	6390	1250	2500	"	"	"	"	"	"	D
Surrogate: 1-Chlorooctadecane	NR		50-150			"	"	"	"	S-01, D
SB-913(S)-7 (P3I0189-06) Soil Sampled: 09/03/03 13:55 Received: 09/04/03 19:00										
Diesel Range Organics	2050	250	500	mg/kg dry	20	3090351	09/09/03	09/09/03	NWTPH-Dx	D-17, D
Heavy Oil Range Hydrocarbons	1250	500	1000	"	"	"	"	"	"	D
Surrogate: 1-Chlorooctadecane	NR		50-150			"	"	"	"	S-01, D

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-914(S)-2 (P3I0189-07) Soil Sampled: 09/03/03 15:18 Received: 09/04/03 19:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090351	09/09/03	09/09/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	89.5 %		50-150			"	"	"	"	
SB-914(S)-7.5 (P3I0189-08) Soil Sampled: 09/03/03 15:24 Received: 09/04/03 19:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090351	09/09/03	09/09/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	86.8 %		50-150			"	"	"	"	
SB-253(C)-2 (P3I0189-12) Soil Sampled: 09/04/03 10:59 Received: 09/04/03 19:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090351	09/09/03	09/10/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	86.6 %		50-150			"	"	"	"	
SB-253(C)-7.5 (P3I0189-13) Soil Sampled: 09/04/03 11:00 Received: 09/04/03 19:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090351	09/09/03	09/09/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	93.1 %		50-150			"	"	"	"	
SB-255(C)-2.5 (P3I0189-14) Soil Sampled: 09/04/03 12:24 Received: 09/04/03 19:00										
Diesel Range Organics	77.5	62.5	75.0	mg/kg dry	5	3090351	09/09/03	09/09/03	NWTPH-DxD-15, R-07,	
Heavy Oil Range Hydrocarbons	325	125	250	"	"	"	"	"	"	D
Surrogate: 1-Chlorooctadecane	110 %		50-150			"	"	"	"	D
SB-255(C)-7 (P3I0189-15) Soil Sampled: 09/04/03 12:40 Received: 09/04/03 19:00										
Diesel Range Organics	196	62.5	125	mg/kg dry	5	3090351	09/09/03	09/09/03	NWTPH-Dx	D-17, D
Heavy Oil Range Hydrocarbons	301	125	250	"	"	"	"	"	"	D
Surrogate: 1-Chlorooctadecane	300 %		50-150			"	"	"	"	S-02, D

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 11/12/03 14:55

**Total Metals per EPA 6000/7000 Series Methods
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-011(A)-7.5 (P3I0189-01) Soil Sampled: 09/03/03 08:11 Received: 09/04/03 19:00										
Lead	3.31	0.106	0.500	mg/kg dry	1	3090317	09/08/03	09/11/03	EPA 6020	
Equip Blank (P3I0189-09) Water Sampled: 09/04/03 07:15 Received: 09/04/03 19:00										
Lead	ND	0.000870	0.0100	mg/l	1	3090631	09/15/03	09/17/03	EPA 6020	D, U
SB-253(C)-2 (P3I0189-12) Soil Sampled: 09/04/03 10:59 Received: 09/04/03 19:00										
Lead	2.55	0.106	0.500	mg/kg dry	1	3090317	09/08/03	09/11/03	EPA 6020	
SB-253(C)-7.5 (P3I0189-13) Soil Sampled: 09/04/03 11:00 Received: 09/04/03 19:00										
Lead	3.73	0.106	0.500	mg/kg dry	1	3090317	09/08/03	09/11/03	EPA 6020	
SB-255(C)-2.5 (P3I0189-14) Soil Sampled: 09/04/03 12:24 Received: 09/04/03 19:00										
Lead	38.8	0.106	0.500	mg/kg dry	1	3090317	09/08/03	09/11/03	EPA 6020	
SB-255(C)-7 (P3I0189-15) Soil Sampled: 09/04/03 12:40 Received: 09/04/03 19:00										
Lead	107	0.0906	0.427	mg/kg dry	1	3090317	09/08/03	09/11/03	EPA 6020	D

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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North Creek Analytical, Inc.
Environmental Laboratory Network



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-011(A)-7.5 (P3I0189-01) Soil Sampled: 09/03/03 08:11 Received: 09/04/03 19:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090278	09/07/03	09/08/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	96.4 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	100 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	92.8 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	109 %		42.1-144			"	"	"	"	

SB-013(A)-7.5 (P3I0189-02) Soil Sampled: 09/03/03 09:49 Received: 09/04/03 19:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090278	09/07/03	09/08/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	15.1	6.75	100	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	94.4 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	98.1 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	94.0 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	108 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-912(S)-2 (P3I0189-03) Soil Sampled: 09/03/03 11:48 Received: 09/04/03 19:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090278	09/07/03	09/08/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	99.5 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	105 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	98.6 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	113 %		42.1-144			"	"	"	"	

SB-912(S)-7 (P3I0189-04) Soil Sampled: 09/03/03 11:55 Received: 09/04/03 19:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090279	09/07/03	09/08/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	99.5 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	99.5 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	94.0 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	109 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-913(S)-2 (P3I0189-05) Soil Sampled: 09/03/03 13:17 Received: 09/04/03 19:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090279	09/07/03	09/08/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	93.7 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	99.1 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	91.4 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	107 %		42.1-144			"	"	"	"	

SB-913(S)-7 (P3I0189-06) Soil Sampled: 09/03/03 13:55 Received: 09/04/03 19:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090279	09/07/03	09/08/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	96.3 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	101 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	91.8 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	109 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-914(S)-2 (P3I0189-07) Soil Sampled: 09/03/03 15:18 Received: 09/04/03 19:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090279	09/07/03	09/08/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	102 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	107 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	97.6 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	115 %		42.1-144			"	"	"	"	

SB-914(S)-7.5 (P3I0189-08) Soil Sampled: 09/03/03 15:24 Received: 09/04/03 19:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090279	09/07/03	09/08/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	102 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	104 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	94.4 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	113 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

North Creek Analytical, Inc.
Environmental Laboratory Network



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Equip Blank (P3I0189-09) Water Sampled: 09/04/03 07:15 Received: 09/04/03 19:00

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	3090293	09/08/03	09/08/03	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.500	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	ND	0.110	0.500	"	"	"	"	"	"	U
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	ND	0.0989	2.00	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	ND	0.107	2.00	"	"	"	"	"	"	U
n-Propylbenzene	ND	0.138	0.500	"	"	"	"	"	"	U
Surrogate: 4-BFB	94.0 %		80-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	96.5 %		77-135			"	"	"	"	
Surrogate: Dibromofluoromethane	91.5 %		80-122			"	"	"	"	
Surrogate: Toluene-d8	106 %		80-120			"	"	"	"	

SB-253(C)-2 (P3I0189-12) Soil Sampled: 09/04/03 10:59 Received: 09/04/03 19:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090279	09/07/03	09/08/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	103 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	104 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	97.6 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	111 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

North Creek Analytical, Inc.
Environmental Laboratory Network



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-253(C)-7.5 (P3I0189-13) Soil Sampled: 09/04/03 11:00 Received: 09/04/03 19:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090279	09/07/03	09/08/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	97.6 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	94.5 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	88.9 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	104 %		42.1-144			"	"	"	"	

SB-255(C)-2.5 (P3I0189-14) Soil Sampled: 09/04/03 12:24 Received: 09/04/03 19:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090279	09/07/03	09/09/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	23.7	6.29	50.0	"	"	"	"	"	"	J
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	14.7	14.1	200	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	13.6	6.75	100	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	89.8 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	108 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	102 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	108 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

North Creek Analytical, Inc.
Environmental Laboratory Network



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-255(C)-7 (P3I0189-15) Soil Sampled: 09/04/03 12:40 Received: 09/04/03 19:00										
1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090279	09/07/03	09/09/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	12.2	4.44	50.0	"	"	"	"	"	"	J
Toluene	18.9	6.29	50.0	"	"	"	"	"	"	J
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	4230	14.1	200	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	35.5	6.75	100	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	20.0	9.33	50.0	"	"	"	"	"	"	J
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	92.3 %		42.6-130			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	104 %		57.3-144			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	101 %		45.5-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	106 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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North Creek Analytical, Inc.
Environmental Laboratory Network



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-011(A)-7.5 (P3I0189-01) Soil Sampled: 09/03/03 08:11 Received: 09/04/03 19:00										
Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090353	09/09/03	09/15/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	79.2 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	95.5 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	86.9 %		40-150			"	"	"	"	

SB-013(A)-7.5 (P3I0189-02) Soil Sampled: 09/03/03 09:49 Received: 09/04/03 19:00										
Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090353	09/09/03	09/15/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

North Creek Analytical, Inc.
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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-013(A)-7.5 (P3I0189-02) Soil Sampled: 09/03/03 09:49 Received: 09/04/03 19:00										
Naphthalene	ND	3.30	13.4	ug/kg dry	1	3090353	09/09/03	09/15/03	EPA 8270m	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	76.6 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	93.8 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	83.5 %		40-150			"	"	"	"	
SB-912(S)-2 (P3I0189-03) Soil Sampled: 09/03/03 11:48 Received: 09/04/03 19:00										
Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090353	09/09/03	09/15/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	77.3 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	93.1 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	84.6 %		40-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-912(S)-7 (P3I0189-04) Soil Sampled: 09/03/03 11:55 Received: 09/04/03 19:00										
Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090353	09/09/03	09/15/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	80.8 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	94.2 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	86.2 %		40-150			"	"	"	"	

SB-913(S)-2 (P3I0189-05) Soil Sampled: 09/03/03 13:17 Received: 09/04/03 19:00										R-05
Acenaphthene	ND	165	670	ug/kg dry	10	3090420	09/10/03	09/16/03	EPA 8270m	D, U
Acenaphthylene	ND	165	670	"	"	"	"	"	"	D, U
Anthracene	ND	165	670	"	"	"	"	"	"	D, U
Benzo (a) anthracene	ND	165	670	"	"	"	"	"	"	D, U
Benzo (a) pyrene	ND	670	670	"	"	"	"	"	"	D, U
Benzo (b) fluoranthene	ND	670	670	"	"	"	"	"	"	D, U
Benzo (ghi) perylene	ND	670	670	"	"	"	"	"	"	D, U
Benzo (k) fluoranthene	ND	670	670	"	"	"	"	"	"	D, U
Chrysene	ND	165	670	"	"	"	"	"	"	D, U
Dibenzo (a,h) anthracene	ND	165	670	"	"	"	"	"	"	D, U
Fluoranthene	ND	165	670	"	"	"	"	"	"	D, U
Fluorene	ND	165	670	"	"	"	"	"	"	D, U
Indeno (1,2,3-cd) pyrene	ND	165	670	"	"	"	"	"	"	D, U

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-913(S)-2 (P3I0189-05) Soil										R-05
Sampled: 09/03/03 13:17 Received: 09/04/03 19:00										
Naphthalene	ND	165	670	ug/kg dry	10	3090420	09/10/03	09/16/03	EPA 8270m	D, U
Phenanthrene	ND	165	670	"	"	"	"	"	"	D, U
Pyrene	ND	165	670	"	"	"	"	"	"	D, U
Surrogate: Fluorene-d10	NR		40-150			"	"	"	"	S-01, D
Surrogate: Pyrene-d10	NR		40-150			"	"	"	"	S-01, D
Surrogate: Benzo (a) pyrene-d12	NR		40-150			"	"	"	"	S-01, D
SB-913(S)-7 (P3I0189-06) Soil										R-05
Sampled: 09/03/03 13:55 Received: 09/04/03 19:00										
Acenaphthene	ND	82.5	335	ug/kg dry	5	3090420	09/10/03	09/16/03	EPA 8270m	U
Acenaphthylene	ND	82.5	335	"	"	"	"	"	"	U
Anthracene	ND	82.5	335	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	82.5	335	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	82.5	335	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	82.5	335	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	82.5	335	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	82.5	335	"	"	"	"	"	"	U
Chrysene	ND	82.5	335	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	82.5	335	"	"	"	"	"	"	U
Fluoranthene	ND	82.5	335	"	"	"	"	"	"	U
Fluorene	ND	82.5	335	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	82.5	335	"	"	"	"	"	"	U
Naphthalene	ND	82.5	335	"	"	"	"	"	"	U
Phenanthrene	ND	82.5	335	"	"	"	"	"	"	U
Pyrene	ND	82.5	335	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	109 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	102 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	88.7 %		40-150			"	"	"	"	J

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-914(S)-2 (P3I0189-07) Soil Sampled: 09/03/03 15:18 Received: 09/04/03 19:00

Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090420	09/10/03	09/16/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	84.6 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	97.8 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	92.3 %		40-150			"	"	"	"	

SB-914(S)-7.5 (P3I0189-08) Soil Sampled: 09/03/03 15:24 Received: 09/04/03 19:00

Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090420	09/10/03	09/16/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-914(S)-7.5 (P3I0189-08) Soil Sampled: 09/03/03 15:24 Received: 09/04/03 19:00										
Naphthalene	ND	3.30	13.4	ug/kg dry	1	3090420	09/10/03	09/16/03	EPA 8270m	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	83.7 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	96.5 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	92.2 %		40-150			"	"	"	"	
SB-003(A)-5 (P3I0189-10) Soil Sampled: 09/04/03 07:46 Received: 09/04/03 19:00										
Acenaphthene	ND	6.60	26.8	ug/kg dry	2	3090359	09/09/03	09/16/03	EPA 8270m	D, U
Acenaphthylene	ND	6.60	26.8	"	"	"	"	"	"	D, U
Anthracene	ND	6.60	26.8	"	"	"	"	"	"	D, U
Benzo (a) anthracene	10.5	6.60	26.8	"	"	"	"	"	"	J, D
Benzo (a) pyrene	14.5	6.60	26.8	"	"	"	"	"	"	J, D
Benzo (b) fluoranthene	12.4	6.60	26.8	"	"	"	"	"	"	J, D
Benzo (ghi) perylene	29.9	6.60	26.8	"	"	"	"	"	"	D
Benzo (k) fluoranthene	13.5	6.60	26.8	"	"	"	"	"	"	J, D
Chrysene	16.0	6.60	26.8	"	"	"	"	"	"	J, D
Dibenzo (a,h) anthracene	ND	6.60	26.8	"	"	"	"	"	"	D, U
Fluoranthene	24.4	6.60	26.8	"	"	"	"	"	"	J, D
Fluorene	ND	6.60	26.8	"	"	"	"	"	"	D, U
Indeno (1,2,3-cd) pyrene	18.2	6.60	26.8	"	"	"	"	"	"	J, D
Naphthalene	9.83	6.60	26.8	"	"	"	"	"	"	J, D
Phenanthrene	17.5	6.60	26.8	"	"	"	"	"	"	J, D
Pyrene	31.0	6.60	26.8	"	"	"	"	"	"	D
Surrogate: Fluorene-d10	49.2 %		40-150			"	"	"	"	D
Surrogate: Pyrene-d10	56.0 %		40-150			"	"	"	"	D
Surrogate: Benzo (a) pyrene-d12	49.9 %		40-150			"	"	"	"	D

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-016(A)-7 (P3I0189-11) Soil Sampled: 09/04/03 08:59 Received: 09/04/03 19:00 R-05										
Acenaphthene	64.9	16.5	67.0	ug/kg dry	5	3090359	09/09/03	09/16/03	EPA 8270m	J, D
Acenaphthylene	ND	16.5	67.0	"	"	"	"	"	"	D, U
Anthracene	46.6	16.5	67.0	"	"	"	"	"	"	J, D
Benzo (a) anthracene	ND	16.5	67.0	"	"	"	"	"	"	D, U
Benzo (a) pyrene	ND	16.5	67.0	"	"	"	"	"	"	D, U
Benzo (b) fluoranthene	ND	16.5	67.0	"	"	"	"	"	"	D, U
Benzo (ghi) perylene	ND	16.5	67.0	"	"	"	"	"	"	D, U
Benzo (k) fluoranthene	ND	16.5	67.0	"	"	"	"	"	"	D, U
Chrysene	ND	16.5	67.0	"	"	"	"	"	"	D, U
Dibenzo (a,h) anthracene	ND	16.5	67.0	"	"	"	"	"	"	D, U
Fluoranthene	ND	16.5	67.0	"	"	"	"	"	"	D, U
Fluorene	151	16.5	67.0	"	"	"	"	"	"	D
Indeno (1,2,3-cd) pyrene	ND	16.5	67.0	"	"	"	"	"	"	D, U
Naphthalene	552	16.5	67.0	"	"	"	"	"	"	D
Phenanthrene	346	16.5	67.0	"	"	"	"	"	"	D
Pyrene	ND	16.5	67.0	"	"	"	"	"	"	D, U
Surrogate: Fluorene-d10	72.9 %		40-150			"	"	"	"	D
Surrogate: Pyrene-d10	98.1 %		40-150			"	"	"	"	D
Surrogate: Benzo (a) pyrene-d12	87.6 %		40-150			"	"	"	"	D

SB-253(C)-2 (P3I0189-12) Soil Sampled: 09/04/03 10:59 Received: 09/04/03 19:00										
Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090359	09/09/03	09/15/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-253(C)-2 (P3I0189-12) Soil Sampled: 09/04/03 10:59 Received: 09/04/03 19:00										
Naphthalene	ND	3.30	13.4	ug/kg dry	1	3090359	09/09/03	09/15/03	EPA 8270m	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	67.5 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	86.8 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	80.4 %		40-150			"	"	"	"	
SB-253(C)-7.5 (P3I0189-13) Soil Sampled: 09/04/03 11:00 Received: 09/04/03 19:00										
Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090359	09/09/03	09/15/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	66.5 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	81.1 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	75.5 %		40-150			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-255(C)-2.5 (P3I0189-14) Soil Sampled: 09/04/03 12:24 Received: 09/04/03 19:00 R-05										
Acenaphthene	357	41.2	168	ug/kg dry	5	3090359	09/09/03	09/16/03	EPA 8270m	D
Acenaphthylene	ND	41.2	168	"	"	"	"	"	"	D, U
Anthracene	1790	41.2	168	"	"	"	"	"	"	D
Benzo (a) anthracene	270	41.2	168	"	"	"	"	"	"	D
Benzo (a) pyrene	118	41.2	168	"	"	"	"	"	"	J, D
Benzo (b) fluoranthene	151	41.2	168	"	"	"	"	"	"	J, D
Benzo (ghi) perylene	89.3	41.2	168	"	"	"	"	"	"	J, D
Benzo (k) fluoranthene	151	41.2	168	"	"	"	"	"	"	J, D
Chrysene	434	41.2	168	"	"	"	"	"	"	D
Dibenzo (a,h) anthracene	ND	41.2	168	"	"	"	"	"	"	D, U
Fluoranthene	843	41.2	168	"	"	"	"	"	"	D
Fluorene	520	41.2	168	"	"	"	"	"	"	D
Indeno (1,2,3-cd) pyrene	62.3	41.2	168	"	"	"	"	"	"	J, D
Naphthalene	62.1	41.2	168	"	"	"	"	"	"	J, D
Phenanthrene	996	41.2	168	"	"	"	"	"	"	D
Pyrene	776	41.2	168	"	"	"	"	"	"	D
Surrogate: Fluorene-d10	76.3 %		40-150			"	"	"	"	D
Surrogate: Pyrene-d10	102 %		40-150			"	"	"	"	D
Surrogate: Benzo (a) pyrene-d12	87.9 %		40-150			"	"	"	"	D

SB-255(C)-7 (P3I0189-15) Soil Sampled: 09/04/03 12:40 Received: 09/04/03 19:00 R-05										
Acenaphthene	7400	41.2	168	ug/kg dry	5	3090359	09/09/03	09/16/03	EPA 8270m	D
Acenaphthylene	953	41.2	168	"	"	"	"	"	"	D
Anthracene	3720	41.2	168	"	"	"	"	"	"	D
Benzo (a) anthracene	4430	41.2	168	"	"	"	"	"	"	D
Benzo (a) pyrene	5840	41.2	168	"	"	"	"	"	"	D
Benzo (b) fluoranthene	3480	41.2	168	"	"	"	"	"	"	D
Benzo (ghi) perylene	6390	41.2	168	"	"	"	"	"	"	D
Benzo (k) fluoranthene	3540	41.2	168	"	"	"	"	"	"	D
Chrysene	5390	41.2	168	"	"	"	"	"	"	D
Dibenzo (a,h) anthracene	694	41.2	168	"	"	"	"	"	"	D
Fluoranthene	24500	41.2	1680	"	50	"	"	09/16/03	"	D
Fluorene	8150	41.2	168	"	5	"	"	09/16/03	"	D

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 11/12/03 14:55

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-255(C)-7 (P3I0189-15) Soil Sampled: 09/04/03 12:40 Received: 09/04/03 19:00 R-05										
Indeno (1,2,3-cd) pyrene	4230	41.2	168	ug/kg dry	5	3090359	09/09/03	09/16/03	EPA 8270m	D
Naphthalene	10200	412	1680	"	50	"	"	09/16/03	"	D
Phenanthrene	35800	412	1680	"	"	"	"	"	"	D
Pyrene	24400	412	1680	"	"	"	"	"	"	D
<i>Surrogate: Fluorene-d10</i>	86.8 %		40-150			"	"	09/16/03	"	D
<i>Surrogate: Pyrene-d10</i>	104 %		40-150			"	"	"	"	D
<i>Surrogate: Benzo (a) pyrene-d12</i>	94.5 %		40-150			"	"	"	"	D

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Reported:
 11/12/03 14:55

**Percent Dry Weight (Solids) per Standard Methods
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-011(A)-7.5 (P3I0189-01) Soil Sampled: 09/03/03 08:11 Received: 09/04/03 19:00										
% Solids	90.7	1.00	1.00% by Weigh		1	3090385	09/09/03	09/10/03	NCA SOP	
SB-013(A)-7.5 (P3I0189-02) Soil Sampled: 09/03/03 09:49 Received: 09/04/03 19:00										
% Solids	92.7	1.00	1.00% by Weigh		1	3090385	09/09/03	09/10/03	NCA SOP	
SB-912(S)-2 (P3I0189-03) Soil Sampled: 09/03/03 11:48 Received: 09/04/03 19:00										
% Solids	92.9	1.00	1.00% by Weigh		1	3090385	09/09/03	09/10/03	NCA SOP	
SB-912(S)-7 (P3I0189-04) Soil Sampled: 09/03/03 11:55 Received: 09/04/03 19:00										
% Solids	92.8	1.00	1.00% by Weigh		1	3090385	09/09/03	09/10/03	NCA SOP	
SB-913(S)-2 (P3I0189-05) Soil Sampled: 09/03/03 13:17 Received: 09/04/03 19:00										
% Solids	90.6	1.00	1.00% by Weigh		1	3090385	09/09/03	09/10/03	NCA SOP	
SB-913(S)-7 (P3I0189-06) Soil Sampled: 09/03/03 13:55 Received: 09/04/03 19:00										
% Solids	91.4	1.00	1.00% by Weigh		1	3090385	09/09/03	09/10/03	NCA SOP	
SB-914(S)-2 (P3I0189-07) Soil Sampled: 09/03/03 15:18 Received: 09/04/03 19:00										
% Solids	94.9	1.00	1.00% by Weigh		1	3090385	09/09/03	09/10/03	NCA SOP	
SB-914(S)-7.5 (P3I0189-08) Soil Sampled: 09/03/03 15:24 Received: 09/04/03 19:00										
% Solids	92.9	1.00	1.00% by Weigh		1	3090385	09/09/03	09/10/03	NCA SOP	
SB-003(A)-5 (P3I0189-10) Soil Sampled: 09/04/03 07:46 Received: 09/04/03 19:00										
% Solids	96.5	1.00	1.00% by Weigh		1	3090385	09/09/03	09/10/03	NCA SOP	

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Reported:
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**Percent Dry Weight (Solids) per Standard Methods
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-016(A)-7 (P3I0189-11) Soil Sampled: 09/04/03 08:59 Received: 09/04/03 19:00										
% Solids	79.6	1.00	1.00% by Weigh		1	3090385	09/09/03	09/10/03	NCA SOP	
SB-253(C)-2 (P3I0189-12) Soil Sampled: 09/04/03 10:59 Received: 09/04/03 19:00										
% Solids	94.9	1.00	1.00% by Weigh		1	3090385	09/09/03	09/10/03	NCA SOP	
SB-253(C)-7.5 (P3I0189-13) Soil Sampled: 09/04/03 11:00 Received: 09/04/03 19:00										
% Solids	79.0	1.00	1.00% by Weigh		1	3090385	09/09/03	09/10/03	NCA SOP	
SB-255(C)-2.5 (P3I0189-14) Soil Sampled: 09/04/03 12:24 Received: 09/04/03 19:00										
% Solids	88.4	1.00	1.00% by Weigh		1	3090385	09/09/03	09/10/03	NCA SOP	
SB-255(C)-7 (P3I0189-15) Soil Sampled: 09/04/03 12:40 Received: 09/04/03 19:00										
% Solids	90.0	1.00	1.00% by Weigh		1	3090385	09/09/03	09/10/03	NCA SOP	

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Reported:
11/12/03 14:55

**Gasoline Hydrocarbons per NW TPH-Gx Method - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090343: Prepared 09/08/03 Using EPA 5035

Blank (3090343-BLK1)

Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg							U
Surrogate: a,a,a-TFT	2.84			"	2.50		114	50-150			

LCS (3090343-BS1)

Gasoline Range Hydrocarbons	68.6	2.50	4.00	mg/kg	62.5		110	70-130			
Surrogate: a,a,a-TFT	2.75			"	2.50		110	50-150			

Duplicate (3090343-DUP1)

Source: P3I0169-01

Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry		ND				40	U
Surrogate: a,a,a-TFT	3.01			"	3.03		99.3	50-150			

Duplicate (3090343-DUP2)

Source: P3I0189-01

Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry		ND				40	U
Surrogate: a,a,a-TFT	1.83			"	2.76		66.3	50-150			

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3090351: Prepared 09/09/03 Using EPA 3550 Fuels											
Blank (3090351-BLK1)											
Diesel Range Organics	ND	12.5	25.0	mg/kg							U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"							U
<i>Surrogate: 1-Chlorooctadecane</i>	4.39			"	4.80		91.5	50-150			
LCS (3090351-BS1)											
Diesel Range Organics	77.8	12.5	25.0	mg/kg	125		62.2	50-150			
Heavy Oil Range Hydrocarbons	53.2	25.0	50.0	"	75.0		70.9	50-150			
<i>Surrogate: 1-Chlorooctadecane</i>	3.47			"	4.80		72.3	50-150			
Duplicate (3090351-DUP1)						Source: P3I0189-01					
Diesel Range Organics	ND	12.5	25.0	mg/kg dry		ND				50	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"		ND				50	U
<i>Surrogate: 1-Chlorooctadecane</i>	4.59			"	5.29		86.8	50-150			
Duplicate (3090351-DUP2)						Source: P3I0189-02					
Diesel Range Organics	ND	12.5	25.0	mg/kg dry		ND				50	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"		ND				50	U
<i>Surrogate: 1-Chlorooctadecane</i>	4.24			"	5.18		81.9	50-150			

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Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

Total Metals per EPA 6000/7000 Series Methods - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3090317: Prepared 09/08/03 Using EPA 3050											
Blank (3090317-BLK2)											
Lead	ND	0.106	0.500	mg/kg							U
LCS (3090317-BS2)											
Lead	11.0	0.106	0.500	mg/kg	10.0		110	80-120			
Duplicate (3090317-DUP1) Source: P3H0662-04											
Lead	12.6	0.106	0.500	mg/kg dry		9.69			26.1	40	
Matrix Spike (3090317-MS1) Source: P3H0662-04											
Lead	21.2	0.106	0.500	mg/kg dry	11.6	9.69	99.2	75-125			
Batch 3090631: Prepared 09/15/03 Using EPA 200/3005											
Blank (3090631-BLK1)											
Lead	ND	0.0000870	0.00100	mg/l							U
LCS (3090631-BS1)											
Lead	0.0964	0.0000870	0.00100	mg/l	0.100		96.4	80-120			
Duplicate (3090631-DUP1) Source: P3I0210-01											
Lead	ND	0.0000870	0.00100	mg/l		ND				20	U
Matrix Spike (3090631-MS1) Source: P3I0210-01											
Lead	0.0912	0.0000870	0.00100	mg/l	0.100	ND	91.2	75-125			
Matrix Spike (3090631-MS2) Source: P3I0200-01											
Lead	0.0832	0.0000870	0.00100	mg/l	0.100	ND	83.2	75-125			

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Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090278: Prepared 09/07/03 Using EPA 5035

Blank (3090278-BLK1)

1,2-Dibromoethane	ND	11.6	50.0	ug/kg							U
1,2-Dichloroethane	ND	11.2	50.0	"							U
Benzene	ND	4.44	50.0	"							U
Toluene	ND	6.29	50.0	"							U
Ethylbenzene	ND	9.40	50.0	"							U
Xylenes (total)	ND	26.2	100	"							U
Methyl tert-butyl ether	ND	11.9	200	"							U
Naphthalene	ND	14.1	200	"							U
1,2,4-Trimethylbenzene	ND	6.75	100	"							U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"							U
Isopropylbenzene	ND	9.55	200	"							U
n-Propylbenzene	ND	9.89	50.0	"							U
Surrogate: 4-BFB	1990			"	2000		99.5	42.6-130			
Surrogate: 1,2-DCA-d4	2160			"	2000		108	57.3-144			
Surrogate: Dibromofluoromethane	2060			"	2000		103	45.5-130			
Surrogate: Toluene-d8	2210			"	2000		110	42.1-144			

LCS (3090278-BS1)

Benzene	2620	4.44	50.0	ug/kg	2500		105	81.9-125			
Toluene	2480	6.29	50.0	"	2500		99.2	80-125			
Surrogate: 4-BFB	2070			"	2000		104	42.6-130			
Surrogate: 1,2-DCA-d4	2240			"	2000		112	57.3-144			
Surrogate: Dibromofluoromethane	2170			"	2000		108	45.5-130			
Surrogate: Toluene-d8	2280			"	2000		114	42.1-144			

Matrix Spike (3090278-MS1)

Source: P3H0881-01

Benzene	2800	4.44	50.0	ug/kg dry	3070	ND	91.2	68.5-125			
Toluene	2690	6.29	50.0	"	3070	ND	87.6	70.3-125			
Surrogate: 4-BFB	2190			"	2450		89.4	42.6-130			
Surrogate: 1,2-DCA-d4	2330			"	2450		95.1	57.3-144			
Surrogate: Dibromofluoromethane	2240			"	2450		91.4	45.5-130			
Surrogate: Toluene-d8	2420			"	2450		98.8	42.1-144			

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

North Creek Analytical, Inc.
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EnviroLogic Resources, Inc.
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Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090278: Prepared 09/07/03 Using EPA 5035

Matrix Spike Dup (3090278-MSD1)

Source: P3H0881-01

Benzene	2870	4.44	50.0	ug/kg dry	3070	ND	93.5	68.5-125	2.47	25	
Toluene	2800	6.29	50.0	"	3070	ND	91.2	70.3-125	4.01	25	
Surrogate: 4-BFB	2280			"	2450		93.1	42.6-130			
Surrogate: 1,2-DCA-d4	2390			"	2450		97.6	57.3-144			
Surrogate: Dibromofluoromethane	2250			"	2450		91.8	45.5-130			
Surrogate: Toluene-d8	2450			"	2450		100	42.1-144			

Batch 3090279: Prepared 09/07/03 Using EPA 5035

Blank (3090279-BLK1)

1,2-Dibromoethane	ND	11.6	50.0	ug/kg							U
1,2-Dichloroethane	ND	11.2	50.0	"							U
Benzene	ND	4.44	50.0	"							U
Toluene	ND	6.29	50.0	"							U
Ethylbenzene	ND	9.40	50.0	"							U
Xylenes (total)	ND	26.2	100	"							U
Methyl tert-butyl ether	ND	11.9	200	"							U
Naphthalene	ND	14.1	200	"							U
1,2,4-Trimethylbenzene	ND	6.75	100	"							U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"							U
Isopropylbenzene	ND	9.55	200	"							U
n-Propylbenzene	ND	9.89	50.0	"							U
Surrogate: 4-BFB	2040			"	2000		102	42.6-130			
Surrogate: 1,2-DCA-d4	2400			"	2000		120	57.3-144			
Surrogate: Dibromofluoromethane	2230			"	2000		112	45.5-130			
Surrogate: Toluene-d8	2360			"	2000		118	42.1-144			

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090279: Prepared 09/07/03 Using EPA 5035

LCS (3090279-BS1)

Benzene	2660	4.44	50.0	ug/kg	2500		106	81.9-125			
Toluene	2570	6.29	50.0	"	2500		103	80-125			
Surrogate: 4-BFB	2020			"	2000		101	42.6-130			
Surrogate: 1,2-DCA-d4	2370			"	2000		118	57.3-144			
Surrogate: Dibromofluoromethane	2200			"	2000		110	45.5-130			
Surrogate: Toluene-d8	2310			"	2000		116	42.1-144			

Matrix Spike (3090279-MS1)

Source: P3I0189-04

Benzene	2670	4.44	50.0	ug/kg dry	2690	ND	99.3	68.5-125			
Toluene	2550	6.29	50.0	"	2690	ND	94.8	70.3-125			
Surrogate: 4-BFB	2220			"	2160		103	42.6-130			
Surrogate: 1,2-DCA-d4	2370			"	2160		110	57.3-144			
Surrogate: Dibromofluoromethane	2190			"	2160		101	45.5-130			
Surrogate: Toluene-d8	2400			"	2160		111	42.1-144			

Matrix Spike Dup (3090279-MSD1)

Source: P3I0189-04

Benzene	2730	4.44	50.0	ug/kg dry	2690	ND	101	68.5-125	2.22	25	
Toluene	2650	6.29	50.0	"	2690	ND	98.5	70.3-125	3.85	25	
Surrogate: 4-BFB	2120			"	2160		98.1	42.6-130			
Surrogate: 1,2-DCA-d4	2240			"	2160		104	57.3-144			
Surrogate: Dibromofluoromethane	2050			"	2160		94.9	45.5-130			
Surrogate: Toluene-d8	2360			"	2160		109	42.1-144			

Batch 3090293: Prepared 09/08/03 Using EPA 5030B

Blank (3090293-BLK1)

1,2-Dibromoethane	ND	0.187	0.500	ug/l							U
1,2-Dichloroethane	ND	0.142	0.500	"							U
Benzene	ND	0.147	0.500	"							U
Toluene	ND	0.155	0.500	"							U
Ethylbenzene	ND	0.110	0.500	"							U
Xylenes (total)	ND	0.262	1.00	"							U
Methyl tert-butyl ether	ND	0.0865	2.00	"							U
Naphthalene	ND	0.0989	2.00	"							U
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"							U

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090293: Prepared 09/08/03 Using EPA 5030B

Blank (3090293-BLK1)

1,3,5-Trimethylbenzene	ND	0.157	0.500	ug/l							U
Isopropylbenzene	ND	0.107	2.00	"							U
n-Propylbenzene	ND	0.138	0.500	"							U
<i>Surrogate: 4-BFB</i>	17.8			"	20.0		89.0	80-120			
<i>Surrogate: 1,2-DCA-d4</i>	19.0			"	20.0		95.0	77-135			
<i>Surrogate: Dibromofluoromethane</i>	18.2			"	20.0		91.0	80-122			
<i>Surrogate: Toluene-d8</i>	21.0			"	20.0		105	80-120			

LCS (3090293-BS1)

Benzene	21.1	0.147	0.500	ug/l	20.0		106	80-120			
Toluene	22.1	0.155	0.500	"	20.0		110	80-120			
Ethylbenzene	19.4	0.110	0.500	"	20.0		97.0	80-120			
Xylenes (total)	56.8	0.262	1.00	"	60.0		94.7	80-120			
<i>Surrogate: 4-BFB</i>	19.7			"	20.0		98.5	80-120			
<i>Surrogate: 1,2-DCA-d4</i>	20.3			"	20.0		102	77-135			
<i>Surrogate: Dibromofluoromethane</i>	19.2			"	20.0		96.0	80-122			
<i>Surrogate: Toluene-d8</i>	22.4			"	20.0		112	80-120			

LCS Dup (3090293-BS1)

Benzene	21.4	0.147	0.500	ug/l	20.0		107	80-120	1.41	25	
Toluene	23.1	0.155	0.500	"	20.0		116	80-120	4.42	25	
Ethylbenzene	20.6	0.110	0.500	"	20.0		103	80-120	6.00	25	
Xylenes (total)	63.2	0.262	1.00	"	60.0		105	80-120	10.7	25	
<i>Surrogate: 4-BFB</i>	20.5			"	20.0		102	80-120			
<i>Surrogate: 1,2-DCA-d4</i>	20.1			"	20.0		100	77-135			
<i>Surrogate: Dibromofluoromethane</i>	18.6			"	20.0		93.0	80-122			
<i>Surrogate: Toluene-d8</i>	22.4			"	20.0		112	80-120			

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Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
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Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090293: Prepared 09/08/03 Using EPA 5030B

Matrix Spike (3090293-MS1)

Source: P310051-06

Benzene	218	1.47	5.00	ug/l	200	7.50	105	80-124			D
Toluene	249	1.55	5.00	"	200	24.9	112	79.7-131			D
Ethylbenzene	286	1.10	5.00	"	200	85.8	100	80-124			D
Xylenes (total)	1550	2.62	10.0	"	600	960	98.3	44.6-154			D
Surrogate: 4-BFB	20.1			"	20.0		100	80-120			
Surrogate: 1,2-DCA-d4	19.9			"	20.0		99.5	77-135			
Surrogate: Dibromofluoromethane	18.7			"	20.0		93.5	80-122			
Surrogate: Toluene-d8	22.0			"	20.0		110	80-120			

Matrix Spike Dup (3090293-MSD1)

Source: P310051-06

Benzene	218	1.47	5.00	ug/l	200	7.50	105	80-124	0.00	25	D
Toluene	246	1.55	5.00	"	200	24.9	111	79.7-131	1.21	25	D
Ethylbenzene	286	1.10	5.00	"	200	85.8	100	80-124	0.00	25	D
Xylenes (total)	1560	2.62	10.0	"	600	960	100	44.6-154	0.643	25	D
Surrogate: 4-BFB	19.7			"	20.0		98.5	80-120			
Surrogate: 1,2-DCA-d4	19.1			"	20.0		95.5	77-135			
Surrogate: Dibromofluoromethane	18.3			"	20.0		91.5	80-122			
Surrogate: Toluene-d8	21.6			"	20.0		108	80-120			

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090353: Prepared 09/09/03 Using EPA 3550

Blank (3090353-BLK1)

Acenaphthene	ND	3.30	13.4	ug/kg							U
Acenaphthylene	ND	3.30	13.4	"							U
Anthracene	ND	3.30	13.4	"							U
Benzo (a) anthracene	ND	3.30	13.4	"							U
Benzo (a) pyrene	ND	3.30	13.4	"							U
Benzo (b) fluoranthene	ND	3.30	13.4	"							U
Benzo (ghi) perylene	ND	3.30	13.4	"							U
Benzo (k) fluoranthene	ND	3.30	13.4	"							U
Chrysene	ND	3.30	13.4	"							U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"							U
Fluoranthene	ND	3.30	13.4	"							U
Fluorene	ND	3.30	13.4	"							U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"							U
Naphthalene	ND	3.30	13.4	"							U
Phenanthrene	ND	3.30	13.4	"							U
Pyrene	ND	3.30	13.4	"							U
Surrogate: Fluorene-d10	61.5			"	83.3		73.8	40-150			
Surrogate: Pyrene-d10	82.6			"	83.3		99.2	40-150			
Surrogate: Benzo (a) pyrene-d12	74.2			"	83.3		89.1	40-150			

LCS (3090353-BS1)

Acenaphthene	135	3.30	13.4	ug/kg	167		80.8	33-139			
Benzo (a) pyrene	167	3.30	13.4	"	167		100	45-149			
Pyrene	176	3.30	13.4	"	167		105	39-138			
Surrogate: Fluorene-d10	61.0			"	83.3		73.2	40-150			
Surrogate: Pyrene-d10	81.6			"	83.3		98.0	40-150			
Surrogate: Benzo (a) pyrene-d12	76.1			"	83.3		91.4	40-150			

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090353: Prepared 09/09/03 Using EPA 3550

Matrix Spike (3090353-MS1)

Source: P3I0004-22

Acenaphthene	169	3.30	13.4	ug/kg dry	185	ND	91.4	33-139			
Benzo (a) pyrene	194	3.30	13.4	"	185	15.5	96.5	45-149			
Pyrene	188	3.30	13.4	"	185	20.2	90.7	39-138			
Surrogate: Fluorene-d10	68.8			"	92.5		74.4	40-150			
Surrogate: Pyrene-d10	85.8			"	92.5		92.8	40-150			
Surrogate: Benzo (a) pyrene-d12	78.0			"	92.5		84.3	40-150			

Matrix Spike Dup (3090353-MSD1)

Source: P3I0004-22

Acenaphthene	171	3.30	13.4	ug/kg dry	185	ND	92.4	33-139	1.18	60	
Benzo (a) pyrene	207	3.30	13.4	"	185	15.5	104	45-149	6.48	60	
Pyrene	200	3.30	13.4	"	185	20.2	97.2	39-138	6.19	60	
Surrogate: Fluorene-d10	73.6			"	92.5		79.6	40-150			
Surrogate: Pyrene-d10	92.9			"	92.5		100	40-150			
Surrogate: Benzo (a) pyrene-d12	85.3			"	92.5		92.2	40-150			

Batch 3090359: Prepared 09/09/03 Using EPA 3550

Blank (3090359-BLK1)

Acenaphthene	ND	3.30	13.4	ug/kg							U
Acenaphthylene	ND	3.30	13.4	"							U
Anthracene	ND	3.30	13.4	"							U
Benzo (a) anthracene	ND	3.30	13.4	"							U
Benzo (a) pyrene	ND	3.30	13.4	"							U
Benzo (b) fluoranthene	ND	3.30	13.4	"							U
Benzo (ghi) perylene	ND	3.30	13.4	"							U
Benzo (k) fluoranthene	ND	3.30	13.4	"							U
Chrysene	ND	3.30	13.4	"							U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"							U
Fluoranthene	ND	3.30	13.4	"							U
Fluorene	ND	3.30	13.4	"							U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"							U
Naphthalene	ND	3.30	13.4	"							U
Phenanthrene	ND	3.30	13.4	"							U
Pyrene	ND	3.30	13.4	"							U

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

North Creek Analytical, Inc.
Environmental Laboratory Network



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

**Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090359: Prepared 09/09/03 Using EPA 3550

Blank (3090359-BLK1)

Surrogate: Fluorene-d10	66.1			ug/kg	83.3		79.4	40-150			
Surrogate: Pyrene-d10	91.1			"	83.3		109	40-150			
Surrogate: Benzo (a) pyrene-d12	78.8			"	83.3		94.6	40-150			

LCS (3090359-BS1)

Acenaphthene	140	3.30	13.4	ug/kg	167		83.8	33-139			
Benzo (a) pyrene	161	3.30	13.4	"	167		96.4	45-149			
Pyrene	151	3.30	13.4	"	167		90.4	39-138			
Surrogate: Fluorene-d10	63.2			"	83.3		75.9	40-150			
Surrogate: Pyrene-d10	78.8			"	83.3		94.6	40-150			
Surrogate: Benzo (a) pyrene-d12	73.4			"	83.3		88.1	40-150			

LCS Dup (3090359-BSD1)

Acenaphthene	145	3.30	13.4	ug/kg	167		86.8	33-139	3.51	60	
Benzo (a) pyrene	163	3.30	13.4	"	167		97.6	45-149	1.23	60	
Pyrene	153	3.30	13.4	"	167		91.6	39-138	1.32	60	
Surrogate: Fluorene-d10	65.3			"	83.3		78.4	40-150			
Surrogate: Pyrene-d10	79.7			"	83.3		95.7	40-150			
Surrogate: Benzo (a) pyrene-d12	73.9			"	83.3		88.7	40-150			

Matrix Spike (3090359-MS1)

Source: P3I0140-04

R-05

Acenaphthene	200	6.60	26.8	ug/kg dry	192	ND	104	33-139			D
Benzo (a) pyrene	196	6.60	26.8	"	192	ND	102	45-149			D
Pyrene	219	6.60	26.8	"	192	35.8	95.4	39-138			D
Surrogate: Fluorene-d10	89.1			"	96.0		92.8	40-150			D
Surrogate: Pyrene-d10	98.4			"	96.0		102	40-150			D
Surrogate: Benzo (a) pyrene-d12	84.6			"	96.0		88.1	40-150			D

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 3090359: Prepared 09/09/03 Using EPA 3550

Matrix Spike Dup (3090359-MSD1)

Source: P3I0140-04

R-05

Acenaphthene	207	6.60	26.8 ug/kg dry		192	ND	108	33-139	3.44	60	D
Benzo (a) pyrene	199	6.60	26.8	"	192	ND	104	45-149	1.52	60	D
Pyrene	219	6.60	26.8	"	192	35.8	95.4	39-138	0.00	60	D
<i>Surrogate: Fluorene-d10</i>	78.6			"	96.0		81.9	40-150			D
<i>Surrogate: Pyrene-d10</i>	100			"	96.0		104	40-150			D
<i>Surrogate: Benzo (a) pyrene-d12</i>	88.2			"	96.0		91.9	40-150			D

Batch 3090420: Prepared 09/10/03 Using EPA 3550

Blank (3090420-BLK1)

Acenaphthene	ND	3.30	13.4 ug/kg								U
Acenaphthylene	ND	3.30	13.4	"							U
Anthracene	ND	3.30	13.4	"							U
Benzo (a) anthracene	ND	3.30	13.4	"							U
Benzo (a) pyrene	ND	3.30	13.4	"							U
Benzo (b) fluoranthene	ND	3.30	13.4	"							U
Benzo (ghi) perylene	ND	3.30	13.4	"							U
Benzo (k) fluoranthene	ND	3.30	13.4	"							U
Chrysene	ND	3.30	13.4	"							U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"							U
Fluoranthene	ND	3.30	13.4	"							U
Fluorene	ND	3.30	13.4	"							U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"							U
Naphthalene	ND	3.30	13.4	"							U
Phenanthrene	ND	3.30	13.4	"							U
Pyrene	ND	3.30	13.4	"							U
<i>Surrogate: Fluorene-d10</i>	62.3			"	83.3		74.8	40-150			
<i>Surrogate: Pyrene-d10</i>	69.2			"	83.3		83.1	40-150			
<i>Surrogate: Benzo (a) pyrene-d12</i>	66.8			"	83.3		80.2	40-150			

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090420: Prepared 09/10/03 Using EPA 3550

LCS (3090420-BS1)

Acenaphthene	154	3.30	13.4	ug/kg	167		92.2	33-139			
Benzo (a) pyrene	170	3.30	13.4	"	167		102	45-149			
Pyrene	150	3.30	13.4	"	167		89.8	39-138			
Surrogate: Fluorene-d10	70.2			"	83.3		84.3	40-150			
Surrogate: Pyrene-d10	77.4			"	83.3		92.9	40-150			
Surrogate: Benzo (a) pyrene-d12	76.4			"	83.3		91.7	40-150			

Matrix Spike (3090420-MS1)

Source: P3I0267-01

R-05

Acenaphthene	162	33.0	134	ug/kg dry	169	ND	95.9	33-139			D
Benzo (a) pyrene	306	33.0	134	"	169	140	98.2	45-149			D
Pyrene	517	33.0	134	"	169	313	121	39-138			D
Surrogate: Fluorene-d10	68.9			"	84.3		81.7	40-150			D
Surrogate: Pyrene-d10	83.1			"	84.3		98.6	40-150			D
Surrogate: Benzo (a) pyrene-d12	78.2			"	84.3		92.8	40-150			D

Matrix Spike Dup (3090420-MSD1)

Source: P3I0267-01

R-05

Acenaphthene	152	33.0	134	ug/kg dry	169	ND	89.9	33-139	6.37	60	D
Benzo (a) pyrene	299	33.0	134	"	169	140	94.1	45-149	2.31	60	D
Pyrene	414	33.0	134	"	169	313	59.8	39-138	22.1	60	D
Surrogate: Fluorene-d10	64.7			"	84.3		76.7	40-150			D
Surrogate: Pyrene-d10	75.1			"	84.3		89.1	40-150			D
Surrogate: Benzo (a) pyrene-d12	79.4			"	84.3		94.2	40-150			D

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
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Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 11/12/03 14:55

Percent Dry Weight (Solids) per Standard Methods - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 3090385: Prepared 09/09/03 Using Dry Weight

Duplicate (3090385-DUP1)					Source: P3I0189-01						
% Solids	90.7	1.00	1.00	% by Weight		90.7			0.00	20	
Duplicate (3090385-DUP2)					Source: P3I0189-04						
% Solids	92.7	1.00	1.00	% by Weight		92.8			0.108	20	
Duplicate (3090385-DUP3)					Source: P3I0189-07						
% Solids	95.0	1.00	1.00	% by Weight		94.9			0.105	20	
Duplicate (3090385-DUP4)					Source: P3I0189-08						
% Solids	93.0	1.00	1.00	% by Weight		92.9			0.108	20	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/12/03 14:55

Notes and Definitions

- D Data reported from a preparation or analytical dilution.
- D-15 Detected hydrocarbons have non-petroleum peaks or elution pattern that suggests the presence of biogenic interference.
- D-17 Detected hydrocarbons in the diesel range do not have a distinct diesel pattern and may be due to heavily weathered diesel or possibly biogenic interference.
- J Estimated value.
- R-05 Reporting limits raised due to dilution necessary for analysis. Sample contains high levels of reported analyte, non-target analyte, and/or matrix interference.
- R-07 Reporting limit raised due to dilution necessary for analysis. Reporting limit adjusted to report quantitation below the MRL, but within the calibration range.
- S-01 The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present.
- S-09 Surrogate recovery is outside control limits due to matrix interference.
- U Analyte included in the analysis but not detected.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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13 November 2003

Tom Calabrese
EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762
RE: Astoria Area-Wide Petroleum Site

Enclosed are the results of analyses for samples received by the laboratory on 09/05/03 17:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Joy D. Chang For Brian Cone
Industrial Services Manager



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P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-254(C)-2	P3I0234-01	Soil	09/04/03 14:38	09/05/03 17:15
SB-254(C)-7	P3I0234-02	Soil	09/04/03 14:50	09/05/03 17:15
SB-005(A)-2.5	P3I0234-03	Soil	09/05/03 07:43	09/05/03 17:15
SB-005(A)-7	P3I0234-04	Soil	09/05/03 07:56	09/05/03 17:15
SB-835(Q)-2	P3I0234-05	Soil	09/05/03 09:49	09/05/03 17:15
SB-835(Q)-7	P3I0234-06	Soil	09/05/03 09:58	09/05/03 17:15
SB-834(Q)-2	P3I0234-07	Soil	09/05/03 13:11	09/05/03 17:15
SB-834(Q)-7.5	P3I0234-08	Soil	09/05/03 13:26	09/05/03 17:15

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Gasoline Hydrocarbons per NW TPH-Gx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-254(C)-2 (P3I0234-01) Soil Sampled: 09/04/03 14:38 Received: 09/05/03 17:15										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090344	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	109 %		50-150			"	"	"	"	
SB-254(C)-7 (P3I0234-02) Soil Sampled: 09/04/03 14:50 Received: 09/05/03 17:15										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090344	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	95.4 %		50-150			"	"	"	"	
SB-005(A)-2.5 (P3I0234-03) Soil Sampled: 09/05/03 07:43 Received: 09/05/03 17:15										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090344	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	93.6 %		50-150			"	"	"	"	
SB-005(A)-7 (P3I0234-04) Soil Sampled: 09/05/03 07:56 Received: 09/05/03 17:15										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090344	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	147 %		50-150			"	"	"	"	
SB-835(Q)-2 (P3I0234-05) Soil Sampled: 09/05/03 09:49 Received: 09/05/03 17:15										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090344	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	90.1 %		50-150			"	"	"	"	
SB-835(Q)-7 (P3I0234-06) Soil Sampled: 09/05/03 09:58 Received: 09/05/03 17:15										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090344	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	71.4 %		50-150			"	"	"	"	
SB-834(Q)-2 (P3I0234-07) Soil Sampled: 09/05/03 13:11 Received: 09/05/03 17:15										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090344	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	113 %		50-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 11/13/03 11:17

Gasoline Hydrocarbons per NW TPH-Gx Method
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-834(Q)-7.5 (P3I0234-08) Soil Sampled: 09/05/03 13:26 Received: 09/05/03 17:15										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090344	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	102 %		50-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-254(C)-2 (P3I0234-01) Soil Sampled: 09/04/03 14:38 Received: 09/05/03 17:15										
Diesel Range Organics	ND	125	250 mg/kg dry		10	3090468	09/11/03	09/12/03	NWTPH-Dx	R-05, D, U
Heavy Oil Range Hydrocarbons	1010	250	500	"	"	"	"	"	"	D
<i>Surrogate: 1-Chlorooctadecane</i>	93.2 %		50-150			"	"	"	"	D
SB-254(C)-7 (P3I0234-02) Soil Sampled: 09/04/03 14:50 Received: 09/05/03 17:15										
Diesel Range Organics	ND	12.5	25.0 mg/kg dry		1	3090468	09/11/03	09/11/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	90.2 %		50-150			"	"	"	"	
SB-005(A)-2.5 (P3I0234-03) Soil Sampled: 09/05/03 07:43 Received: 09/05/03 17:15										
Diesel Range Organics	ND	12.5	25.0 mg/kg dry		1	3090468	09/11/03	09/12/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	84.7 %		50-150			"	"	"	"	
SB-005(A)-7 (P3I0234-04) Soil Sampled: 09/05/03 07:56 Received: 09/05/03 17:15										
Diesel Range Organics	ND	12.5	25.0 mg/kg dry		1	3090468	09/11/03	09/12/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	90.8 %		50-150			"	"	"	"	
SB-835(Q)-2 (P3I0234-05) Soil Sampled: 09/05/03 09:49 Received: 09/05/03 17:15										
Diesel Range Organics	ND	12.5	25.0 mg/kg dry		1	3090468	09/11/03	09/12/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	107	25.0	50.0	"	"	"	"	"	"	
<i>Surrogate: 1-Chlorooctadecane</i>	90.7 %		50-150			"	"	"	"	
SB-835(Q)-7 (P3I0234-06) Soil Sampled: 09/05/03 09:58 Received: 09/05/03 17:15										
Diesel Range Organics	ND	12.5	25.0 mg/kg dry		1	3090468	09/11/03	09/12/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	91.9 %		50-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-834(Q)-2 (P3I0234-07) Soil Sampled: 09/05/03 13:11 Received: 09/05/03 17:15										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090468	09/11/03	09/12/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	90.7 %		50-150			"	"	"	"	
SB-834(Q)-7.5 (P3I0234-08) Soil Sampled: 09/05/03 13:26 Received: 09/05/03 17:15										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090468	09/11/03	09/12/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	80.8 %		50-150			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
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Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-254(C)-2 (P3I0234-01) Soil Sampled: 09/04/03 14:38 Received: 09/05/03 17:15										
Lead	34.1	0.0928	0.450	mg/kg dry	1	3090434	09/10/03	09/11/03	EPA 6020	D
SB-254(C)-7 (P3I0234-02) Soil Sampled: 09/04/03 14:50 Received: 09/05/03 17:15										
Lead	31.5	0.103	0.500	mg/kg dry	1	3090434	09/10/03	09/11/03	EPA 6020	
SB-005(A)-2.5 (P3I0234-03) Soil Sampled: 09/05/03 07:43 Received: 09/05/03 17:15										
Lead	6.56	0.0866	0.420	mg/kg dry	1	3090434	09/10/03	09/11/03	EPA 6020	D
SB-005(A)-7 (P3I0234-04) Soil Sampled: 09/05/03 07:56 Received: 09/05/03 17:15										
Lead	3.24	0.103	0.500	mg/kg dry	1	3090434	09/10/03	09/11/03	EPA 6020	
SB-835(Q)-2 (P3I0234-05) Soil Sampled: 09/05/03 09:49 Received: 09/05/03 17:15										
Lead	17.9	0.0628	0.305	mg/kg dry	1	3090434	09/10/03	09/11/03	EPA 6020	D
SB-835(Q)-7 (P3I0234-06) Soil Sampled: 09/05/03 09:58 Received: 09/05/03 17:15										
Lead	2.49	0.103	0.500	mg/kg dry	1	3090434	09/10/03	09/11/03	EPA 6020	
SB-834(Q)-2 (P3I0234-07) Soil Sampled: 09/05/03 13:11 Received: 09/05/03 17:15										
Lead	3.21	0.103	0.500	mg/kg dry	1	3090434	09/10/03	09/11/03	EPA 6020	
SB-834(Q)-7.5 (P3I0234-08) Soil Sampled: 09/05/03 13:26 Received: 09/05/03 17:15										
Lead	3.63	0.103	0.500	mg/kg dry	1	3090434	09/10/03	09/11/03	EPA 6020	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-254(C)-2 (P3I0234-01) Soil Sampled: 09/04/03 14:38 Received: 09/05/03 17:15

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090383	09/10/03	09/12/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	25.5	14.1	200	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	<i>84.7 %</i>		<i>42.6-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 1,2-DCA-d4</i>	<i>91.9 %</i>		<i>57.3-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>87.8 %</i>		<i>45.5-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>	<i>96.4 %</i>		<i>42.1-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

SB-254(C)-7 (P3I0234-02) Soil Sampled: 09/04/03 14:50 Received: 09/05/03 17:15

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090383	09/10/03	09/12/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	<i>92.5 %</i>		<i>42.6-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 1,2-DCA-d4</i>	<i>98.7 %</i>		<i>57.3-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>95.1 %</i>		<i>45.5-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>	<i>107 %</i>		<i>42.1-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

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Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-005(A)-2.5 (P3I0234-03) Soil Sampled: 09/05/03 07:43 Received: 09/05/03 17:15

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090383	09/10/03	09/12/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	99.1 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	106 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	104 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	115 %		42.1-144			"	"	"	"	

SB-005(A)-7 (P3I0234-04) Soil Sampled: 09/05/03 07:56 Received: 09/05/03 17:15

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090383	09/10/03	09/12/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	16.7	14.1	200	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	92.8 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	97.8 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	92.4 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	106 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

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North Creek Analytical, Inc.
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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-835(Q)-2 (P310234-05) Soil Sampled: 09/05/03 09:49 Received: 09/05/03 17:15

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090383	09/10/03	09/12/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	79.0 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	85.4 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	80.5 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	91.8 %		42.1-144			"	"	"	"	

SB-835(Q)-7 (P310234-06) Soil Sampled: 09/05/03 09:58 Received: 09/05/03 17:15

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090383	09/10/03	09/12/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	92.1 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	100 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	92.1 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	104 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-834(Q)-2 (P3I0234-07) Soil Sampled: 09/05/03 13:11 Received: 09/05/03 17:15

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090383	09/10/03	09/17/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	11.9	9.40	50.0	"	"	"	"	"	"	J
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	80.8	14.1	200	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	33.4	6.75	100	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	10.8	9.33	50.0	"	"	"	"	"	"	J
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	12.9	9.89	50.0	"	"	"	"	"	"	J
<i>Surrogate: 4-BFB</i>	97.7 %		42.6-130			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	103 %		57.3-144			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	98.1 %		45.5-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	109 %		42.1-144			"	"	"	"	

SB-834(Q)-7.5 (P3I0234-08) Soil Sampled: 09/05/03 13:26 Received: 09/05/03 17:15

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090383	09/10/03	09/17/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	127	14.1	200	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	16.6	6.75	100	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	82.4 %		42.6-130			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	84.4 %		57.3-144			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	79.7 %		45.5-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	87.5 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-254(C)-2 (P3I0234-01) Soil Sampled: 09/04/03 14:38 Received: 09/05/03 17:15 R-05										
Acenaphthene	20.0	16.5	67.0	ug/kg dry	2	3090359	09/09/03	09/17/03	EPA 8270m	J, D
Acenaphthylene	ND	16.5	67.0	"	"	"	"	"	"	D, U
Anthracene	59.8	16.5	67.0	"	"	"	"	"	"	J, D
Benzo (a) anthracene	117	16.5	67.0	"	"	"	"	"	"	D
Benzo (a) pyrene	167	16.5	67.0	"	"	"	"	"	"	D
Benzo (b) fluoranthene	249	16.5	67.0	"	"	"	"	"	"	R-08, D
Benzo (ghi) perylene	158	16.5	67.0	"	"	"	"	"	"	D
Benzo (k) fluoranthene	ND	16.5	67.0	"	"	"	"	"	"	R-08, D, U
Chrysene	199	16.5	67.0	"	"	"	"	"	"	D
Dibenzo (a,h) anthracene	43.9	16.5	67.0	"	"	"	"	"	"	J, D
Fluoranthene	215	16.5	67.0	"	"	"	"	"	"	D
Fluorene	26.7	16.5	67.0	"	"	"	"	"	"	J, D
Indeno (1,2,3-cd) pyrene	100	16.5	67.0	"	"	"	"	"	"	D
Naphthalene	ND	16.5	67.0	"	"	"	"	"	"	D, U
Phenanthrene	172	16.5	67.0	"	"	"	"	"	"	D
Pyrene	263	16.5	67.0	"	"	"	"	"	"	D
Surrogate: Fluorene-d10	79.5 %		40-150			"	"	"	"	D
Surrogate: Pyrene-d10	103 %		40-150			"	"	"	"	D
Surrogate: Benzo (a) pyrene-d12	100 %		40-150			"	"	"	"	D

SB-254(C)-7 (P3I0234-02) Soil Sampled: 09/04/03 14:50 Received: 09/05/03 17:15										
Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090359	09/09/03	09/16/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

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Environmental Laboratory Network



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-254(C)-7 (P310234-02) Soil Sampled: 09/04/03 14:50 Received: 09/05/03 17:15										
Naphthalene	ND	3.30	13.4	ug/kg dry	1	3090359	09/09/03	09/16/03	EPA 8270m	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	71.5 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	91.9 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	84.8 %		40-150			"	"	"	"	
SB-005(A)-2.5 (P310234-03) Soil Sampled: 09/05/03 07:43 Received: 09/05/03 17:15										
Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090359	09/09/03	09/16/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	13.4	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	13.4	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	78.9 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	97.3 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	89.7 %		40-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-005(A)-7 (P3I0234-04) Soil Sampled: 09/05/03 07:56 Received: 09/05/03 17:15										
Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090359	09/09/03	09/16/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	4.69	3.30	13.4	"	"	"	"	"	"	J
Benzo (b) fluoranthene	ND	13.4	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	5.58	3.30	13.4	"	"	"	"	"	"	J
Benzo (k) fluoranthene	ND	13.4	13.4	"	"	"	"	"	"	U
Chrysene	4.90	3.30	13.4	"	"	"	"	"	"	J
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	7.53	3.30	13.4	"	"	"	"	"	"	J
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	3.76	3.30	13.4	"	"	"	"	"	"	J
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	8.71	3.30	13.4	"	"	"	"	"	"	J
Surrogate: Fluorene-d10	79.8 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	95.9 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	87.3 %		40-150			"	"	"	"	

SB-835(Q)-2 (P3I0234-05) Soil Sampled: 09/05/03 09:49 Received: 09/05/03 17:15

Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090359	09/09/03	09/17/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	10.8	3.30	13.4	"	"	"	"	"	"	J
Benzo (a) pyrene	16.9	3.30	13.4	"	"	"	"	"	"	
Benzo (b) fluoranthene	20.5	3.30	13.4	"	"	"	"	"	"	
Benzo (ghi) perylene	23.2	3.30	13.4	"	"	"	"	"	"	
Benzo (k) fluoranthene	16.2	3.30	13.4	"	"	"	"	"	"	
Chrysene	24.4	3.30	13.4	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	4.98	3.30	13.4	"	"	"	"	"	"	J
Fluoranthene	22.9	3.30	13.4	"	"	"	"	"	"	
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U

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Environmental Laboratory Network



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-835(Q)-2 (P3I0234-05) Soil Sampled: 09/05/03 09:49 Received: 09/05/03 17:15										
Indeno (1,2,3-cd) pyrene	14.9	3.30	13.4	ug/kg dry	1	3090359	09/09/03	09/17/03	EPA 8270m	
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	11.7	3.30	13.4	"	"	"	"	"	"	J
Pyrene	24.4	3.30	13.4	"	"	"	"	"	"	
<i>Surrogate: Fluorene-d10</i>	<i>91.0 %</i>		<i>40-150</i>			"	"	"	"	
<i>Surrogate: Pyrene-d10</i>	<i>105 %</i>		<i>40-150</i>			"	"	"	"	
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>102 %</i>		<i>40-150</i>			"	"	"	"	
SB-835(Q)-7 (P3I0234-06) Soil Sampled: 09/05/03 09:58 Received: 09/05/03 17:15										
Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090359	09/09/03	09/16/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
<i>Surrogate: Fluorene-d10</i>	<i>80.6 %</i>		<i>40-150</i>			"	"	"	"	
<i>Surrogate: Pyrene-d10</i>	<i>97.4 %</i>		<i>40-150</i>			"	"	"	"	
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>90.7 %</i>		<i>40-150</i>			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-834(Q)-2 (P3I0234-07) Soil Sampled: 09/05/03 13:11 Received: 09/05/03 17:15										
Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090359	09/09/03	09/16/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	76.1 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	98.2 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	90.2 %		40-150			"	"	"	"	

SB-834(Q)-7.5 (P3I0234-08) Soil Sampled: 09/05/03 13:26 Received: 09/05/03 17:15										
Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090420	09/10/03	09/16/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

North Creek Analytical, Inc.
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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 11/13/03 11:17

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-834(Q)-7.5 (P3I0234-08) Soil Sampled: 09/05/03 13:26 Received: 09/05/03 17:15										
Naphthalene	ND	3.30	13.4	ug/kg dry	1	3090420	09/10/03	09/16/03	EPA 8270m	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
<i>Surrogate: Fluorene-d10</i>	<i>83.0 %</i>		<i>40-150</i>							
<i>Surrogate: Pyrene-d10</i>	<i>102 %</i>		<i>40-150</i>							
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>91.8 %</i>		<i>40-150</i>							

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Project Manager: Tom Calabrese

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11/13/03 11:17

**Percent Dry Weight (Solids) per Standard Methods
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-254(C)-2 (P3I0234-01) Soil	Sampled: 09/04/03 14:38 Received: 09/05/03 17:15									
% Solids	90.0	1.00	1.00% by Weigh		1	3090449	09/10/03	09/11/03	NCA SOP	
SB-254(C)-7 (P3I0234-02) Soil	Sampled: 09/04/03 14:50 Received: 09/05/03 17:15									
% Solids	88.6	1.00	1.00% by Weigh		1	3090449	09/10/03	09/11/03	NCA SOP	
SB-005(A)-2.5 (P3I0234-03) Soil	Sampled: 09/05/03 07:43 Received: 09/05/03 17:15									
% Solids	94.3	1.00	1.00% by Weigh		1	3090449	09/10/03	09/11/03	NCA SOP	
SB-005(A)-7 (P3I0234-04) Soil	Sampled: 09/05/03 07:56 Received: 09/05/03 17:15									
% Solids	89.7	1.00	1.00% by Weigh		1	3090449	09/10/03	09/11/03	NCA SOP	
SB-835(Q)-2 (P3I0234-05) Soil	Sampled: 09/05/03 09:49 Received: 09/05/03 17:15									
% Solids	74.8	1.00	1.00% by Weigh		1	3090449	09/10/03	09/11/03	NCA SOP	
SB-835(Q)-7 (P3I0234-06) Soil	Sampled: 09/05/03 09:58 Received: 09/05/03 17:15									
% Solids	88.3	1.00	1.00% by Weigh		1	3090449	09/10/03	09/11/03	NCA SOP	
SB-834(Q)-2 (P3I0234-07) Soil	Sampled: 09/05/03 13:11 Received: 09/05/03 17:15									
% Solids	92.8	1.00	1.00% by Weigh		1	3090449	09/10/03	09/11/03	NCA SOP	
SB-834(Q)-7.5 (P3I0234-08) Soil	Sampled: 09/05/03 13:26 Received: 09/05/03 17:15									
% Solids	78.1	1.00	1.00% by Weigh		1	3090449	09/10/03	09/11/03	NCA SOP	

North Creek Analytical - Portland

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Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Gasoline Hydrocarbons per NW TPH-Gx Method - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3090344: Prepared 09/08/03 Using EPA 5035											
Blank (3090344-BLK1)											
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg							U
Surrogate: a,a,a-TFT	2.44			"	2.50		97.6	50-150			
LCS (3090344-BS1)											
Gasoline Range Hydrocarbons	77.6	2.50	4.00	mg/kg	62.5		124	70-130			
Surrogate: a,a,a-TFT	3.61			"	2.50		144	50-150			
Duplicate (3090344-DUP1)						Source: P3H0662-04					
Gasoline Range Hydrocarbons	8.57	2.50	4.00	mg/kg dry		5.14			50.0	40	Q-14
Surrogate: a,a,a-TFT	2.95			"	2.97		99.3	50-150			
Duplicate (3090344-DUP2)						Source: P3I0264-01					
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry		ND				40	U
Surrogate: a,a,a-TFT	2.00			"	2.61		76.6	50-150			

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Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090468: Prepared 09/11/03 Using EPA 3550 Fuels

Blank (3090468-BLK1)

Diesel Range Organics	ND	12.5	25.0	mg/kg							U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"							U
<i>Surrogate: 1-Chlorooctadecane</i>	4.23			"	4.80		88.1	50-150			

LCS (3090468-BS1)

Diesel Range Organics	98.9	12.5	25.0	mg/kg	125		79.1	50-150			
Heavy Oil Range Hydrocarbons	75.6	25.0	50.0	"	75.0		101	50-150			
<i>Surrogate: 1-Chlorooctadecane</i>	4.36			"	4.80		90.8	50-150			

Duplicate (3090468-DUP1)

Source: P3I0169-01

Diesel Range Organics	ND	12.5	25.0	mg/kg dry		ND				50	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"		ND				50	U
<i>Surrogate: 1-Chlorooctadecane</i>	5.18			"	5.82		89.0	50-150			

Duplicate (3090468-DUP2)

Source: P3I0169-02

Diesel Range Organics	ND	12.5	25.0	mg/kg dry		ND				50	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"		ND				50	U
<i>Surrogate: 1-Chlorooctadecane</i>	4.87			"	5.42		89.9	50-150			

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Reported:
 11/13/03 11:17

**Total Metals per EPA 6000/7000 Series Methods - Quality Control
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3090434: Prepared 09/10/03 Using EPA 3050											
Blank (3090434-BLK2)											
Lead	ND	0.103	0.500	mg/kg							U
LCS (3090434-BS2)											
Lead	11.3	0.103	0.500	mg/kg	10.0		113	80-120			
Duplicate (3090434-DUP1) Source: P3I0234-02											
Lead	22.5	0.0888	0.431	mg/kg dry		31.5			33.3	40	D
Matrix Spike (3090434-MS1) Source: P3I0234-02											
Lead	72.1	0.0920	0.446	mg/kg dry	10.1	31.5	402	75-125			Q-14, D
Matrix Spike (3090434-MS2) Source: P3I0234-08											
Lead	18.5	0.103	0.500	mg/kg dry	11.7	3.63	127	75-125			Q-14

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Project: Astoria Area-Wide Petroleum Site
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Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090383: Prepared 09/10/03 Using EPA 5035

Blank (3090383-BLK1)

1,2-Dibromoethane	ND	11.6	50.0	ug/kg							U
1,2-Dichloroethane	ND	11.2	50.0	"							U
Benzene	ND	4.44	50.0	"							U
Toluene	ND	6.29	50.0	"							U
Ethylbenzene	ND	9.40	50.0	"							U
Xylenes (total)	ND	26.2	100	"							U
Methyl tert-butyl ether	ND	11.9	200	"							U
Naphthalene	20.0	14.1	200	"							J
1,2,4-Trimethylbenzene	ND	6.75	100	"							U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"							U
Isopropylbenzene	ND	9.55	200	"							U
n-Propylbenzene	ND	9.89	50.0	"							U
Surrogate: 4-BFB	1770			"	2000		88.5	42.6-130			
Surrogate: 1,2-DCA-d4	2190			"	2000		110	57.3-144			
Surrogate: Dibromofluoromethane	1950			"	2000		97.5	45.5-130			
Surrogate: Toluene-d8	2200			"	2000		110	42.1-144			

LCS (3090383-BS1)

Benzene	2760	4.44	50.0	ug/kg	2500		110	81.9-125			
Toluene	2660	6.29	50.0	"	2500		106	80-125			
Surrogate: 4-BFB	1920			"	2000		96.0	42.6-130			
Surrogate: 1,2-DCA-d4	2320			"	2000		116	57.3-144			
Surrogate: Dibromofluoromethane	2170			"	2000		108	45.5-130			
Surrogate: Toluene-d8	2340			"	2000		117	42.1-144			

Matrix Spike (3090383-MS1)

Source: P3I0207-01

Benzene	2670	4.44	50.0	ug/kg dry	2620	ND	102	68.5-125			
Toluene	2640	6.29	50.0	"	2620	14.7	100	70.3-125			
Surrogate: 4-BFB	1910			"	2090		91.4	42.6-130			
Surrogate: 1,2-DCA-d4	2260			"	2090		108	57.3-144			
Surrogate: Dibromofluoromethane	2070			"	2090		99.0	45.5-130			
Surrogate: Toluene-d8	2250			"	2090		108	42.1-144			

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

North Creek Analytical, Inc.
Environmental Laboratory Network



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090383: Prepared 09/10/03 Using EPA 5035

Matrix Spike Dup (3090383-MSD1)

Source: P3I0207-01

Benzene	2690	4.44	50.0 ug/kg dry		2620	ND	103	68.5-125	0.746	25	
Toluene	2600	6.29	50.0	"	2620	14.7	98.7	70.3-125	1.53	25	
Surrogate: 4-BFB	2000			"	2090		95.7	42.6-130			
Surrogate: 1,2-DCA-d4	2310			"	2090		111	57.3-144			
Surrogate: Dibromofluoromethane	2150			"	2090		103	45.5-130			
Surrogate: Toluene-d8	2340			"	2090		112	42.1-144			

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090359: Prepared 09/09/03 Using EPA 3550

Blank (3090359-BLK1)

Acenaphthene	ND	3.30	13.4	ug/kg							U
Acenaphthylene	ND	3.30	13.4	"							U
Anthracene	ND	3.30	13.4	"							U
Benzo (a) anthracene	ND	3.30	13.4	"							U
Benzo (a) pyrene	ND	3.30	13.4	"							U
Benzo (b) fluoranthene	ND	3.30	13.4	"							U
Benzo (ghi) perylene	ND	3.30	13.4	"							U
Benzo (k) fluoranthene	ND	3.30	13.4	"							U
Chrysene	ND	3.30	13.4	"							U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"							U
Fluoranthene	ND	3.30	13.4	"							U
Fluorene	ND	3.30	13.4	"							U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"							U
Naphthalene	ND	3.30	13.4	"							U
Phenanthrene	ND	3.30	13.4	"							U
Pyrene	ND	3.30	13.4	"							U
Surrogate: Fluorene-d10	66.1			"	83.3		79.4	40-150			
Surrogate: Pyrene-d10	91.1			"	83.3		109	40-150			
Surrogate: Benzo (a) pyrene-d12	78.8			"	83.3		94.6	40-150			

LCS (3090359-BS1)

Acenaphthene	140	3.30	13.4	ug/kg	167		83.8	33-139			
Benzo (a) pyrene	161	3.30	13.4	"	167		96.4	45-149			
Pyrene	151	3.30	13.4	"	167		90.4	39-138			
Surrogate: Fluorene-d10	63.2			"	83.3		75.9	40-150			
Surrogate: Pyrene-d10	78.8			"	83.3		94.6	40-150			
Surrogate: Benzo (a) pyrene-d12	73.4			"	83.3		88.1	40-150			

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090359: Prepared 09/09/03 Using EPA 3550

LCS Dup (3090359-BSD1)

Acenaphthene	145	3.30	13.4	ug/kg	167		86.8	33-139	3.51	60	
Benzo (a) pyrene	163	3.30	13.4	"	167		97.6	45-149	1.23	60	
Pyrene	153	3.30	13.4	"	167		91.6	39-138	1.32	60	
Surrogate: Fluorene-d10	65.3			"	83.3		78.4	40-150			
Surrogate: Pyrene-d10	79.7			"	83.3		95.7	40-150			
Surrogate: Benzo (a) pyrene-d12	73.9			"	83.3		88.7	40-150			

Matrix Spike (3090359-MS1)

Source: P3I0140-04

R-05

Acenaphthene	200	6.60	26.8	ug/kg dry	192	ND	104	33-139			D
Benzo (a) pyrene	196	6.60	26.8	"	192	ND	102	45-149			D
Pyrene	219	6.60	26.8	"	192	35.8	95.4	39-138			D
Surrogate: Fluorene-d10	89.1			"	96.0		92.8	40-150			D
Surrogate: Pyrene-d10	98.4			"	96.0		102	40-150			D
Surrogate: Benzo (a) pyrene-d12	84.6			"	96.0		88.1	40-150			D

Matrix Spike Dup (3090359-MSD1)

Source: P3I0140-04

R-05

Acenaphthene	207	6.60	26.8	ug/kg dry	192	ND	108	33-139	3.44	60	D
Benzo (a) pyrene	199	6.60	26.8	"	192	ND	104	45-149	1.52	60	D
Pyrene	219	6.60	26.8	"	192	35.8	95.4	39-138	0.00	60	D
Surrogate: Fluorene-d10	78.6			"	96.0		81.9	40-150			D
Surrogate: Pyrene-d10	100			"	96.0		104	40-150			D
Surrogate: Benzo (a) pyrene-d12	88.2			"	96.0		91.9	40-150			D

Batch 3090420: Prepared 09/10/03 Using EPA 3550

Blank (3090420-BLK1)

Acenaphthene	ND	3.30	13.4	ug/kg							U
Acenaphthylene	ND	3.30	13.4	"							U
Anthracene	ND	3.30	13.4	"							U
Benzo (a) anthracene	ND	3.30	13.4	"							U
Benzo (a) pyrene	ND	3.30	13.4	"							U
Benzo (b) fluoranthene	ND	3.30	13.4	"							U
Benzo (ghi) perylene	ND	3.30	13.4	"							U
Benzo (k) fluoranthene	ND	3.30	13.4	"							U
Chrysene	ND	3.30	13.4	"							U

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

North Creek Analytical, Inc.
Environmental Laboratory Network



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090420: Prepared 09/10/03 Using EPA 3550

Blank (3090420-BLK1)

Dibenzo (a,h) anthracene	ND	3.30	13.4	ug/kg							U
Fluoranthene	ND	3.30	13.4	"							U
Fluorene	ND	3.30	13.4	"							U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"							U
Naphthalene	ND	3.30	13.4	"							U
Phenanthrene	ND	3.30	13.4	"							U
Pyrene	ND	3.30	13.4	"							U

Surrogate: Fluorene-d10	62.3			"	83.3		74.8	40-150			
Surrogate: Pyrene-d10	69.2			"	83.3		83.1	40-150			
Surrogate: Benzo (a) pyrene-d12	66.8			"	83.3		80.2	40-150			

LCS (3090420-BS1)

Acenaphthene	154	3.30	13.4	ug/kg	167		92.2	33-139			
Benzo (a) pyrene	170	3.30	13.4	"	167		102	45-149			
Pyrene	150	3.30	13.4	"	167		89.8	39-138			
Surrogate: Fluorene-d10	70.2			"	83.3		84.3	40-150			
Surrogate: Pyrene-d10	77.4			"	83.3		92.9	40-150			
Surrogate: Benzo (a) pyrene-d12	76.4			"	83.3		91.7	40-150			

Matrix Spike (3090420-MS1)

Source: P3I0267-01

R-05

Acenaphthene	162	33.0	134	ug/kg dry	169	ND	95.9	33-139			D
Benzo (a) pyrene	306	33.0	134	"	169	140	98.2	45-149			D
Pyrene	517	33.0	134	"	169	313	121	39-138			D
Surrogate: Fluorene-d10	68.9			"	84.3		81.7	40-150			D
Surrogate: Pyrene-d10	83.1			"	84.3		98.6	40-150			D
Surrogate: Benzo (a) pyrene-d12	78.2			"	84.3		92.8	40-150			D

Matrix Spike Dup (3090420-MSD1)

Source: P3I0267-01

R-05

Acenaphthene	152	33.0	134	ug/kg dry	169	ND	89.9	33-139	6.37	60	D
Benzo (a) pyrene	299	33.0	134	"	169	140	94.1	45-149	2.31	60	D
Pyrene	414	33.0	134	"	169	313	59.8	39-138	22.1	60	D
Surrogate: Fluorene-d10	64.7			"	84.3		76.7	40-150			D
Surrogate: Pyrene-d10	75.1			"	84.3		89.1	40-150			D
Surrogate: Benzo (a) pyrene-d12	79.4			"	84.3		94.2	40-150			D

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

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Environmental Laboratory Network



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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 11/13/03 11:17

Percent Dry Weight (Solids) per Standard Methods - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090449: Prepared 09/10/03 Using Dry Weight

Duplicate (3090449-DUP1)

Source: P3I0330-01

% Solids	82.1	1.00	1.00	% by Weight		82.2			0.122	20	
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Duplicate (3090449-DUP2)

Source: P3I0330-02

% Solids	79.9	1.00	1.00	% by Weight		79.8			0.125	20	
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Duplicate (3090449-DUP3)

Source: P3I0330-03

% Solids	77.6	1.00	1.00	% by Weight		77.6			0.00	20	
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Duplicate (3090449-DUP4)

Source: P3I0330-04

% Solids	76.0	1.00	1.00	% by Weight		76.1			0.131	20	
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North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

Notes and Definitions

- D Data reported from a preparation or analytical dilution.
- J Estimated value.
- Q-14 The Spike Recovery and/or RPD is outside of control limits due to a non-homogeneous sample matrix.
- R-05 Reporting limits raised due to dilution necessary for analysis. Sample contains high levels of reported analyte, non-target analyte, and/or matrix interference.
- R-08 Due to matrix unable to resolve Benzofluoranthene isomers. Value reported only in Benzo(b) category represents Total Benzo(b+k)fluoranthene.
- U Analyte included in the analysis but not detected.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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13 November 2003

Tom Calabrese
EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762
RE: Astoria Area-Wide Petroleum Site

Enclosed are the results of analyses for samples received by the laboratory on 09/05/03 17:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Joy D. Chang For Brian Cone
Industrial Services Manager



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244
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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 11/13/03 11:17

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-254(C)-2	P3I0234-01	Soil	09/04/03 14:38	09/05/03 17:15
SB-254(C)-7	P3I0234-02	Soil	09/04/03 14:50	09/05/03 17:15
SB-005(A)-2.5	P3I0234-03	Soil	09/05/03 07:43	09/05/03 17:15
SB-005(A)-7	P3I0234-04	Soil	09/05/03 07:56	09/05/03 17:15
SB-835(Q)-2	P3I0234-05	Soil	09/05/03 09:49	09/05/03 17:15
SB-835(Q)-7	P3I0234-06	Soil	09/05/03 09:58	09/05/03 17:15
SB-834(Q)-2	P3I0234-07	Soil	09/05/03 13:11	09/05/03 17:15
SB-834(Q)-7.5	P3I0234-08	Soil	09/05/03 13:26	09/05/03 17:15

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Gasoline Hydrocarbons per NW TPH-Gx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-254(C)-2 (P3I0234-01) Soil Sampled: 09/04/03 14:38 Received: 09/05/03 17:15										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090344	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	109 %		50-150			"	"	"	"	
SB-254(C)-7 (P3I0234-02) Soil Sampled: 09/04/03 14:50 Received: 09/05/03 17:15										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090344	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	95.4 %		50-150			"	"	"	"	
SB-005(A)-2.5 (P3I0234-03) Soil Sampled: 09/05/03 07:43 Received: 09/05/03 17:15										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090344	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	93.6 %		50-150			"	"	"	"	
SB-005(A)-7 (P3I0234-04) Soil Sampled: 09/05/03 07:56 Received: 09/05/03 17:15										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090344	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	147 %		50-150			"	"	"	"	
SB-835(Q)-2 (P3I0234-05) Soil Sampled: 09/05/03 09:49 Received: 09/05/03 17:15										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090344	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	90.1 %		50-150			"	"	"	"	
SB-835(Q)-7 (P3I0234-06) Soil Sampled: 09/05/03 09:58 Received: 09/05/03 17:15										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090344	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	71.4 %		50-150			"	"	"	"	
SB-834(Q)-2 (P3I0234-07) Soil Sampled: 09/05/03 13:11 Received: 09/05/03 17:15										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090344	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	113 %		50-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 11/13/03 11:17

Gasoline Hydrocarbons per NW TPH-Gx Method
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-834(Q)-7.5 (P3I0234-08) Soil Sampled: 09/05/03 13:26 Received: 09/05/03 17:15										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090344	09/08/03	09/10/03	NW TPH-G	U
Surrogate: a,a,a-TFT	102 %		50-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-254(C)-2 (P3I0234-01) Soil Sampled: 09/04/03 14:38 Received: 09/05/03 17:15										
Diesel Range Organics	ND	125	250 mg/kg dry		10	3090468	09/11/03	09/12/03	NWTPH-Dx	R-05, D, U
Heavy Oil Range Hydrocarbons	1010	250	500	"	"	"	"	"	"	D
<i>Surrogate: 1-Chlorooctadecane</i>	93.2 %		50-150			"	"	"	"	D
SB-254(C)-7 (P3I0234-02) Soil Sampled: 09/04/03 14:50 Received: 09/05/03 17:15										
Diesel Range Organics	ND	12.5	25.0 mg/kg dry		1	3090468	09/11/03	09/11/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	90.2 %		50-150			"	"	"	"	
SB-005(A)-2.5 (P3I0234-03) Soil Sampled: 09/05/03 07:43 Received: 09/05/03 17:15										
Diesel Range Organics	ND	12.5	25.0 mg/kg dry		1	3090468	09/11/03	09/12/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	84.7 %		50-150			"	"	"	"	
SB-005(A)-7 (P3I0234-04) Soil Sampled: 09/05/03 07:56 Received: 09/05/03 17:15										
Diesel Range Organics	ND	12.5	25.0 mg/kg dry		1	3090468	09/11/03	09/12/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	90.8 %		50-150			"	"	"	"	
SB-835(Q)-2 (P3I0234-05) Soil Sampled: 09/05/03 09:49 Received: 09/05/03 17:15										
Diesel Range Organics	ND	12.5	25.0 mg/kg dry		1	3090468	09/11/03	09/12/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	107	25.0	50.0	"	"	"	"	"	"	
<i>Surrogate: 1-Chlorooctadecane</i>	90.7 %		50-150			"	"	"	"	
SB-835(Q)-7 (P3I0234-06) Soil Sampled: 09/05/03 09:58 Received: 09/05/03 17:15										
Diesel Range Organics	ND	12.5	25.0 mg/kg dry		1	3090468	09/11/03	09/12/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	91.9 %		50-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-834(Q)-2 (P3I0234-07) Soil Sampled: 09/05/03 13:11 Received: 09/05/03 17:15										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090468	09/11/03	09/12/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	90.7 %		50-150			"	"	"	"	
SB-834(Q)-7.5 (P3I0234-08) Soil Sampled: 09/05/03 13:26 Received: 09/05/03 17:15										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090468	09/11/03	09/12/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	80.8 %		50-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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 Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 11/13/03 11:17

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-254(C)-2 (P3I0234-01) Soil Sampled: 09/04/03 14:38 Received: 09/05/03 17:15										
Lead	34.1	0.0928	0.450	mg/kg dry	1	3090434	09/10/03	09/11/03	EPA 6020	D
SB-254(C)-7 (P3I0234-02) Soil Sampled: 09/04/03 14:50 Received: 09/05/03 17:15										
Lead	31.5	0.103	0.500	mg/kg dry	1	3090434	09/10/03	09/11/03	EPA 6020	
SB-005(A)-2.5 (P3I0234-03) Soil Sampled: 09/05/03 07:43 Received: 09/05/03 17:15										
Lead	6.56	0.0866	0.420	mg/kg dry	1	3090434	09/10/03	09/11/03	EPA 6020	D
SB-005(A)-7 (P3I0234-04) Soil Sampled: 09/05/03 07:56 Received: 09/05/03 17:15										
Lead	3.24	0.103	0.500	mg/kg dry	1	3090434	09/10/03	09/11/03	EPA 6020	
SB-835(Q)-2 (P3I0234-05) Soil Sampled: 09/05/03 09:49 Received: 09/05/03 17:15										
Lead	17.9	0.0628	0.305	mg/kg dry	1	3090434	09/10/03	09/11/03	EPA 6020	D
SB-835(Q)-7 (P3I0234-06) Soil Sampled: 09/05/03 09:58 Received: 09/05/03 17:15										
Lead	2.49	0.103	0.500	mg/kg dry	1	3090434	09/10/03	09/11/03	EPA 6020	
SB-834(Q)-2 (P3I0234-07) Soil Sampled: 09/05/03 13:11 Received: 09/05/03 17:15										
Lead	3.21	0.103	0.500	mg/kg dry	1	3090434	09/10/03	09/11/03	EPA 6020	
SB-834(Q)-7.5 (P3I0234-08) Soil Sampled: 09/05/03 13:26 Received: 09/05/03 17:15										
Lead	3.63	0.103	0.500	mg/kg dry	1	3090434	09/10/03	09/11/03	EPA 6020	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-254(C)-2 (P3I0234-01) Soil Sampled: 09/04/03 14:38 Received: 09/05/03 17:15

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090383	09/10/03	09/12/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	25.5	14.1	200	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	<i>84.7 %</i>		<i>42.6-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 1,2-DCA-d4</i>	<i>91.9 %</i>		<i>57.3-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>87.8 %</i>		<i>45.5-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>	<i>96.4 %</i>		<i>42.1-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

SB-254(C)-7 (P3I0234-02) Soil Sampled: 09/04/03 14:50 Received: 09/05/03 17:15

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090383	09/10/03	09/12/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	<i>92.5 %</i>		<i>42.6-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 1,2-DCA-d4</i>	<i>98.7 %</i>		<i>57.3-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>95.1 %</i>		<i>45.5-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>	<i>107 %</i>		<i>42.1-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

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Environmental Laboratory Network



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-005(A)-2.5 (P3I0234-03) Soil Sampled: 09/05/03 07:43 Received: 09/05/03 17:15

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090383	09/10/03	09/12/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	99.1 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	106 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	104 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	115 %		42.1-144			"	"	"	"	

SB-005(A)-7 (P3I0234-04) Soil Sampled: 09/05/03 07:56 Received: 09/05/03 17:15

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090383	09/10/03	09/12/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	16.7	14.1	200	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	92.8 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	97.8 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	92.4 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	106 %		42.1-144			"	"	"	"	

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Environmental Laboratory Network

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-835(Q)-2 (P310234-05) Soil Sampled: 09/05/03 09:49 Received: 09/05/03 17:15

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090383	09/10/03	09/12/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	79.0 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	85.4 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	80.5 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	91.8 %		42.1-144			"	"	"	"	

SB-835(Q)-7 (P310234-06) Soil Sampled: 09/05/03 09:58 Received: 09/05/03 17:15

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090383	09/10/03	09/12/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	92.1 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	100 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	92.1 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	104 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-834(Q)-2 (P3I0234-07) Soil Sampled: 09/05/03 13:11 Received: 09/05/03 17:15

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090383	09/10/03	09/17/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	11.9	9.40	50.0	"	"	"	"	"	"	J
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	80.8	14.1	200	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	33.4	6.75	100	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	10.8	9.33	50.0	"	"	"	"	"	"	J
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	12.9	9.89	50.0	"	"	"	"	"	"	J
<i>Surrogate: 4-BFB</i>	97.7 %		42.6-130			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	103 %		57.3-144			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	98.1 %		45.5-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	109 %		42.1-144			"	"	"	"	

SB-834(Q)-7.5 (P3I0234-08) Soil Sampled: 09/05/03 13:26 Received: 09/05/03 17:15

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090383	09/10/03	09/17/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	127	14.1	200	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	16.6	6.75	100	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	82.4 %		42.6-130			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	84.4 %		57.3-144			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	79.7 %		45.5-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	87.5 %		42.1-144			"	"	"	"	

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-254(C)-2 (P3I0234-01) Soil Sampled: 09/04/03 14:38 Received: 09/05/03 17:15										
Acenaphthene	20.0	16.5	67.0	ug/kg dry	2	3090359	09/09/03	09/17/03	EPA 8270m	J, D
Acenaphthylene	ND	16.5	67.0	"	"	"	"	"	"	D, U
Anthracene	59.8	16.5	67.0	"	"	"	"	"	"	J, D
Benzo (a) anthracene	117	16.5	67.0	"	"	"	"	"	"	D
Benzo (a) pyrene	167	16.5	67.0	"	"	"	"	"	"	D
Benzo (b) fluoranthene	249	16.5	67.0	"	"	"	"	"	"	R-08, D
Benzo (ghi) perylene	158	16.5	67.0	"	"	"	"	"	"	D
Benzo (k) fluoranthene	ND	16.5	67.0	"	"	"	"	"	"	R-08, D, U
Chrysene	199	16.5	67.0	"	"	"	"	"	"	D
Dibenzo (a,h) anthracene	43.9	16.5	67.0	"	"	"	"	"	"	J, D
Fluoranthene	215	16.5	67.0	"	"	"	"	"	"	D
Fluorene	26.7	16.5	67.0	"	"	"	"	"	"	J, D
Indeno (1,2,3-cd) pyrene	100	16.5	67.0	"	"	"	"	"	"	D
Naphthalene	ND	16.5	67.0	"	"	"	"	"	"	D, U
Phenanthrene	172	16.5	67.0	"	"	"	"	"	"	D
Pyrene	263	16.5	67.0	"	"	"	"	"	"	D
Surrogate: Fluorene-d10	79.5 %		40-150			"	"	"	"	D
Surrogate: Pyrene-d10	103 %		40-150			"	"	"	"	D
Surrogate: Benzo (a) pyrene-d12	100 %		40-150			"	"	"	"	D

SB-254(C)-7 (P3I0234-02) Soil Sampled: 09/04/03 14:50 Received: 09/05/03 17:15										
Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090359	09/09/03	09/16/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-254(C)-7 (P310234-02) Soil Sampled: 09/04/03 14:50 Received: 09/05/03 17:15										
Naphthalene	ND	3.30	13.4	ug/kg dry	1	3090359	09/09/03	09/16/03	EPA 8270m	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	71.5 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	91.9 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	84.8 %		40-150			"	"	"	"	
SB-005(A)-2.5 (P310234-03) Soil Sampled: 09/05/03 07:43 Received: 09/05/03 17:15										
Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090359	09/09/03	09/16/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	13.4	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	13.4	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	78.9 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	97.3 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	89.7 %		40-150			"	"	"	"	

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-005(A)-7 (P3I0234-04) Soil Sampled: 09/05/03 07:56 Received: 09/05/03 17:15										
Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090359	09/09/03	09/16/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	4.69	3.30	13.4	"	"	"	"	"	"	J
Benzo (b) fluoranthene	ND	13.4	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	5.58	3.30	13.4	"	"	"	"	"	"	J
Benzo (k) fluoranthene	ND	13.4	13.4	"	"	"	"	"	"	U
Chrysene	4.90	3.30	13.4	"	"	"	"	"	"	J
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	7.53	3.30	13.4	"	"	"	"	"	"	J
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	3.76	3.30	13.4	"	"	"	"	"	"	J
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	8.71	3.30	13.4	"	"	"	"	"	"	J
<i>Surrogate: Fluorene-d10</i>	<i>79.8 %</i>		<i>40-150</i>			"	"	"	"	
<i>Surrogate: Pyrene-d10</i>	<i>95.9 %</i>		<i>40-150</i>			"	"	"	"	
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>87.3 %</i>		<i>40-150</i>			"	"	"	"	

SB-835(Q)-2 (P3I0234-05) Soil Sampled: 09/05/03 09:49 Received: 09/05/03 17:15

Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090359	09/09/03	09/17/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	10.8	3.30	13.4	"	"	"	"	"	"	J
Benzo (a) pyrene	16.9	3.30	13.4	"	"	"	"	"	"	
Benzo (b) fluoranthene	20.5	3.30	13.4	"	"	"	"	"	"	
Benzo (ghi) perylene	23.2	3.30	13.4	"	"	"	"	"	"	
Benzo (k) fluoranthene	16.2	3.30	13.4	"	"	"	"	"	"	
Chrysene	24.4	3.30	13.4	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	4.98	3.30	13.4	"	"	"	"	"	"	J
Fluoranthene	22.9	3.30	13.4	"	"	"	"	"	"	
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U

North Creek Analytical - Portland

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Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-835(Q)-2 (P3I0234-05) Soil Sampled: 09/05/03 09:49 Received: 09/05/03 17:15										
Indeno (1,2,3-cd) pyrene	14.9	3.30	13.4	ug/kg dry	1	3090359	09/09/03	09/17/03	EPA 8270m	
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	11.7	3.30	13.4	"	"	"	"	"	"	J
Pyrene	24.4	3.30	13.4	"	"	"	"	"	"	
<i>Surrogate: Fluorene-d10</i>	<i>91.0 %</i>		<i>40-150</i>			"	"	"	"	
<i>Surrogate: Pyrene-d10</i>	<i>105 %</i>		<i>40-150</i>			"	"	"	"	
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>102 %</i>		<i>40-150</i>			"	"	"	"	
SB-835(Q)-7 (P3I0234-06) Soil Sampled: 09/05/03 09:58 Received: 09/05/03 17:15										
Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090359	09/09/03	09/16/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
<i>Surrogate: Fluorene-d10</i>	<i>80.6 %</i>		<i>40-150</i>			"	"	"	"	
<i>Surrogate: Pyrene-d10</i>	<i>97.4 %</i>		<i>40-150</i>			"	"	"	"	
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>90.7 %</i>		<i>40-150</i>			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-834(Q)-2 (P3I0234-07) Soil Sampled: 09/05/03 13:11 Received: 09/05/03 17:15										
Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090359	09/09/03	09/16/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	76.1 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	98.2 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	90.2 %		40-150			"	"	"	"	

SB-834(Q)-7.5 (P3I0234-08) Soil Sampled: 09/05/03 13:26 Received: 09/05/03 17:15										
Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090420	09/10/03	09/16/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

North Creek Analytical, Inc.
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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 11/13/03 11:17

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-834(Q)-7.5 (P3I0234-08) Soil Sampled: 09/05/03 13:26 Received: 09/05/03 17:15										
Naphthalene	ND	3.30	13.4	ug/kg dry	1	3090420	09/10/03	09/16/03	EPA 8270m	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	83.0 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	102 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	91.8 %		40-150			"	"	"	"	

North Creek Analytical - Portland

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 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 11/13/03 11:17

**Percent Dry Weight (Solids) per Standard Methods
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-254(C)-2 (P3I0234-01) Soil Sampled: 09/04/03 14:38 Received: 09/05/03 17:15										
% Solids	90.0	1.00	1.00% by Weigh		1	3090449	09/10/03	09/11/03	NCA SOP	
SB-254(C)-7 (P3I0234-02) Soil Sampled: 09/04/03 14:50 Received: 09/05/03 17:15										
% Solids	88.6	1.00	1.00% by Weigh		1	3090449	09/10/03	09/11/03	NCA SOP	
SB-005(A)-2.5 (P3I0234-03) Soil Sampled: 09/05/03 07:43 Received: 09/05/03 17:15										
% Solids	94.3	1.00	1.00% by Weigh		1	3090449	09/10/03	09/11/03	NCA SOP	
SB-005(A)-7 (P3I0234-04) Soil Sampled: 09/05/03 07:56 Received: 09/05/03 17:15										
% Solids	89.7	1.00	1.00% by Weigh		1	3090449	09/10/03	09/11/03	NCA SOP	
SB-835(Q)-2 (P3I0234-05) Soil Sampled: 09/05/03 09:49 Received: 09/05/03 17:15										
% Solids	74.8	1.00	1.00% by Weigh		1	3090449	09/10/03	09/11/03	NCA SOP	
SB-835(Q)-7 (P3I0234-06) Soil Sampled: 09/05/03 09:58 Received: 09/05/03 17:15										
% Solids	88.3	1.00	1.00% by Weigh		1	3090449	09/10/03	09/11/03	NCA SOP	
SB-834(Q)-2 (P3I0234-07) Soil Sampled: 09/05/03 13:11 Received: 09/05/03 17:15										
% Solids	92.8	1.00	1.00% by Weigh		1	3090449	09/10/03	09/11/03	NCA SOP	
SB-834(Q)-7.5 (P3I0234-08) Soil Sampled: 09/05/03 13:26 Received: 09/05/03 17:15										
% Solids	78.1	1.00	1.00% by Weigh		1	3090449	09/10/03	09/11/03	NCA SOP	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Gasoline Hydrocarbons per NW TPH-Gx Method - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3090344: Prepared 09/08/03 Using EPA 5035											
Blank (3090344-BLK1)											
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg							U
Surrogate: a,a,a-TFT	2.44			"	2.50		97.6	50-150			
LCS (3090344-BS1)											
Gasoline Range Hydrocarbons	77.6	2.50	4.00	mg/kg	62.5		124	70-130			
Surrogate: a,a,a-TFT	3.61			"	2.50		144	50-150			
Duplicate (3090344-DUP1)						Source: P3H0662-04					
Gasoline Range Hydrocarbons	8.57	2.50	4.00	mg/kg dry		5.14			50.0	40	Q-14
Surrogate: a,a,a-TFT	2.95			"	2.97		99.3	50-150			
Duplicate (3090344-DUP2)						Source: P3I0264-01					
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry		ND				40	U
Surrogate: a,a,a-TFT	2.00			"	2.61		76.6	50-150			

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Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 11/13/03 11:17

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090468: Prepared 09/11/03 Using EPA 3550 Fuels

Blank (3090468-BLK1)

Diesel Range Organics	ND	12.5	25.0	mg/kg							U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"							U
Surrogate: 1-Chlorooctadecane	4.23			"	4.80		88.1	50-150			

LCS (3090468-BS1)

Diesel Range Organics	98.9	12.5	25.0	mg/kg	125		79.1	50-150			
Heavy Oil Range Hydrocarbons	75.6	25.0	50.0	"	75.0		101	50-150			
Surrogate: 1-Chlorooctadecane	4.36			"	4.80		90.8	50-150			

Duplicate (3090468-DUP1)

Source: P3I0169-01

Diesel Range Organics	ND	12.5	25.0	mg/kg dry		ND				50	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"		ND				50	U
Surrogate: 1-Chlorooctadecane	5.18			"	5.82		89.0	50-150			

Duplicate (3090468-DUP2)

Source: P3I0169-02

Diesel Range Organics	ND	12.5	25.0	mg/kg dry		ND				50	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"		ND				50	U
Surrogate: 1-Chlorooctadecane	4.87			"	5.42		89.9	50-150			

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Project: Astoria Area-Wide Petroleum Site
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 Project Manager: Tom Calabrese

Reported:
 11/13/03 11:17

**Total Metals per EPA 6000/7000 Series Methods - Quality Control
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3090434: Prepared 09/10/03 Using EPA 3050											
Blank (3090434-BLK2)											
Lead	ND	0.103	0.500	mg/kg							U
LCS (3090434-BS2)											
Lead	11.3	0.103	0.500	mg/kg	10.0		113	80-120			
Duplicate (3090434-DUP1) Source: P3I0234-02											
Lead	22.5	0.0888	0.431	mg/kg dry		31.5			33.3	40	D
Matrix Spike (3090434-MS1) Source: P3I0234-02											
Lead	72.1	0.0920	0.446	mg/kg dry	10.1	31.5	402	75-125			Q-14, D
Matrix Spike (3090434-MS2) Source: P3I0234-08											
Lead	18.5	0.103	0.500	mg/kg dry	11.7	3.63	127	75-125			Q-14

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Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

**Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090383: Prepared 09/10/03 Using EPA 5035

Blank (3090383-BLK1)

1,2-Dibromoethane	ND	11.6	50.0	ug/kg							U
1,2-Dichloroethane	ND	11.2	50.0	"							U
Benzene	ND	4.44	50.0	"							U
Toluene	ND	6.29	50.0	"							U
Ethylbenzene	ND	9.40	50.0	"							U
Xylenes (total)	ND	26.2	100	"							U
Methyl tert-butyl ether	ND	11.9	200	"							U
Naphthalene	20.0	14.1	200	"							J
1,2,4-Trimethylbenzene	ND	6.75	100	"							U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"							U
Isopropylbenzene	ND	9.55	200	"							U
n-Propylbenzene	ND	9.89	50.0	"							U
Surrogate: 4-BFB	1770			"	2000		88.5	42.6-130			
Surrogate: 1,2-DCA-d4	2190			"	2000		110	57.3-144			
Surrogate: Dibromofluoromethane	1950			"	2000		97.5	45.5-130			
Surrogate: Toluene-d8	2200			"	2000		110	42.1-144			

LCS (3090383-BS1)

Benzene	2760	4.44	50.0	ug/kg	2500		110	81.9-125			
Toluene	2660	6.29	50.0	"	2500		106	80-125			
Surrogate: 4-BFB	1920			"	2000		96.0	42.6-130			
Surrogate: 1,2-DCA-d4	2320			"	2000		116	57.3-144			
Surrogate: Dibromofluoromethane	2170			"	2000		108	45.5-130			
Surrogate: Toluene-d8	2340			"	2000		117	42.1-144			

Matrix Spike (3090383-MS1)

Source: P3I0207-01

Benzene	2670	4.44	50.0	ug/kg dry	2620	ND	102	68.5-125			
Toluene	2640	6.29	50.0	"	2620	14.7	100	70.3-125			
Surrogate: 4-BFB	1910			"	2090		91.4	42.6-130			
Surrogate: 1,2-DCA-d4	2260			"	2090		108	57.3-144			
Surrogate: Dibromofluoromethane	2070			"	2090		99.0	45.5-130			
Surrogate: Toluene-d8	2250			"	2090		108	42.1-144			

North Creek Analytical - Portland

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Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 11/13/03 11:17

**Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090383: Prepared 09/10/03 Using EPA 5035

Matrix Spike Dup (3090383-MSD1)

Source: P3I0207-01

Benzene	2690	4.44	50.0 ug/kg dry		2620	ND	103	68.5-125	0.746	25	
Toluene	2600	6.29	50.0	"	2620	14.7	98.7	70.3-125	1.53	25	
Surrogate: 4-BFB	2000			"	2090		95.7	42.6-130			
Surrogate: 1,2-DCA-d4	2310			"	2090		111	57.3-144			
Surrogate: Dibromofluoromethane	2150			"	2090		103	45.5-130			
Surrogate: Toluene-d8	2340			"	2090		112	42.1-144			

North Creek Analytical - Portland

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Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090359: Prepared 09/09/03 Using EPA 3550

Blank (3090359-BLK1)

Acenaphthene	ND	3.30	13.4	ug/kg							U
Acenaphthylene	ND	3.30	13.4	"							U
Anthracene	ND	3.30	13.4	"							U
Benzo (a) anthracene	ND	3.30	13.4	"							U
Benzo (a) pyrene	ND	3.30	13.4	"							U
Benzo (b) fluoranthene	ND	3.30	13.4	"							U
Benzo (ghi) perylene	ND	3.30	13.4	"							U
Benzo (k) fluoranthene	ND	3.30	13.4	"							U
Chrysene	ND	3.30	13.4	"							U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"							U
Fluoranthene	ND	3.30	13.4	"							U
Fluorene	ND	3.30	13.4	"							U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"							U
Naphthalene	ND	3.30	13.4	"							U
Phenanthrene	ND	3.30	13.4	"							U
Pyrene	ND	3.30	13.4	"							U
Surrogate: Fluorene-d10	66.1			"	83.3		79.4	40-150			
Surrogate: Pyrene-d10	91.1			"	83.3		109	40-150			
Surrogate: Benzo (a) pyrene-d12	78.8			"	83.3		94.6	40-150			

LCS (3090359-BS1)

Acenaphthene	140	3.30	13.4	ug/kg	167		83.8	33-139			
Benzo (a) pyrene	161	3.30	13.4	"	167		96.4	45-149			
Pyrene	151	3.30	13.4	"	167		90.4	39-138			
Surrogate: Fluorene-d10	63.2			"	83.3		75.9	40-150			
Surrogate: Pyrene-d10	78.8			"	83.3		94.6	40-150			
Surrogate: Benzo (a) pyrene-d12	73.4			"	83.3		88.1	40-150			

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090359: Prepared 09/09/03 Using EPA 3550

LCS Dup (3090359-BSD1)

Acenaphthene	145	3.30	13.4	ug/kg	167		86.8	33-139	3.51	60	
Benzo (a) pyrene	163	3.30	13.4	"	167		97.6	45-149	1.23	60	
Pyrene	153	3.30	13.4	"	167		91.6	39-138	1.32	60	
Surrogate: Fluorene-d10	65.3			"	83.3		78.4	40-150			
Surrogate: Pyrene-d10	79.7			"	83.3		95.7	40-150			
Surrogate: Benzo (a) pyrene-d12	73.9			"	83.3		88.7	40-150			

Matrix Spike (3090359-MS1)

Source: P3I0140-04

R-05

Acenaphthene	200	6.60	26.8	ug/kg dry	192	ND	104	33-139			D
Benzo (a) pyrene	196	6.60	26.8	"	192	ND	102	45-149			D
Pyrene	219	6.60	26.8	"	192	35.8	95.4	39-138			D
Surrogate: Fluorene-d10	89.1			"	96.0		92.8	40-150			D
Surrogate: Pyrene-d10	98.4			"	96.0		102	40-150			D
Surrogate: Benzo (a) pyrene-d12	84.6			"	96.0		88.1	40-150			D

Matrix Spike Dup (3090359-MSD1)

Source: P3I0140-04

R-05

Acenaphthene	207	6.60	26.8	ug/kg dry	192	ND	108	33-139	3.44	60	D
Benzo (a) pyrene	199	6.60	26.8	"	192	ND	104	45-149	1.52	60	D
Pyrene	219	6.60	26.8	"	192	35.8	95.4	39-138	0.00	60	D
Surrogate: Fluorene-d10	78.6			"	96.0		81.9	40-150			D
Surrogate: Pyrene-d10	100			"	96.0		104	40-150			D
Surrogate: Benzo (a) pyrene-d12	88.2			"	96.0		91.9	40-150			D

Batch 3090420: Prepared 09/10/03 Using EPA 3550

Blank (3090420-BLK1)

Acenaphthene	ND	3.30	13.4	ug/kg							U
Acenaphthylene	ND	3.30	13.4	"							U
Anthracene	ND	3.30	13.4	"							U
Benzo (a) anthracene	ND	3.30	13.4	"							U
Benzo (a) pyrene	ND	3.30	13.4	"							U
Benzo (b) fluoranthene	ND	3.30	13.4	"							U
Benzo (ghi) perylene	ND	3.30	13.4	"							U
Benzo (k) fluoranthene	ND	3.30	13.4	"							U
Chrysene	ND	3.30	13.4	"							U

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Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090420: Prepared 09/10/03 Using EPA 3550

Blank (3090420-BLK1)

Dibenzo (a,h) anthracene	ND	3.30	13.4	ug/kg							U
Fluoranthene	ND	3.30	13.4	"							U
Fluorene	ND	3.30	13.4	"							U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"							U
Naphthalene	ND	3.30	13.4	"							U
Phenanthrene	ND	3.30	13.4	"							U
Pyrene	ND	3.30	13.4	"							U

Surrogate: Fluorene-d10	62.3			"	83.3		74.8	40-150			
Surrogate: Pyrene-d10	69.2			"	83.3		83.1	40-150			
Surrogate: Benzo (a) pyrene-d12	66.8			"	83.3		80.2	40-150			

LCS (3090420-BS1)

Acenaphthene	154	3.30	13.4	ug/kg	167		92.2	33-139			
Benzo (a) pyrene	170	3.30	13.4	"	167		102	45-149			
Pyrene	150	3.30	13.4	"	167		89.8	39-138			
Surrogate: Fluorene-d10	70.2			"	83.3		84.3	40-150			
Surrogate: Pyrene-d10	77.4			"	83.3		92.9	40-150			
Surrogate: Benzo (a) pyrene-d12	76.4			"	83.3		91.7	40-150			

Matrix Spike (3090420-MS1)

Source: P3I0267-01

R-05

Acenaphthene	162	33.0	134	ug/kg dry	169	ND	95.9	33-139			D
Benzo (a) pyrene	306	33.0	134	"	169	140	98.2	45-149			D
Pyrene	517	33.0	134	"	169	313	121	39-138			D
Surrogate: Fluorene-d10	68.9			"	84.3		81.7	40-150			D
Surrogate: Pyrene-d10	83.1			"	84.3		98.6	40-150			D
Surrogate: Benzo (a) pyrene-d12	78.2			"	84.3		92.8	40-150			D

Matrix Spike Dup (3090420-MSD1)

Source: P3I0267-01

R-05

Acenaphthene	152	33.0	134	ug/kg dry	169	ND	89.9	33-139	6.37	60	D
Benzo (a) pyrene	299	33.0	134	"	169	140	94.1	45-149	2.31	60	D
Pyrene	414	33.0	134	"	169	313	59.8	39-138	22.1	60	D
Surrogate: Fluorene-d10	64.7			"	84.3		76.7	40-150			D
Surrogate: Pyrene-d10	75.1			"	84.3		89.1	40-150			D
Surrogate: Benzo (a) pyrene-d12	79.4			"	84.3		94.2	40-150			D

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Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 11/13/03 11:17

Percent Dry Weight (Solids) per Standard Methods - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090449: Prepared 09/10/03 Using Dry Weight

Duplicate (3090449-DUP1)

Source: P3I0330-01

% Solids	82.1	1.00	1.00	% by Weight		82.2			0.122	20	
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Duplicate (3090449-DUP2)

Source: P3I0330-02

% Solids	79.9	1.00	1.00	% by Weight		79.8			0.125	20	
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Duplicate (3090449-DUP3)

Source: P3I0330-03

% Solids	77.6	1.00	1.00	% by Weight		77.6			0.00	20	
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Duplicate (3090449-DUP4)

Source: P3I0330-04

% Solids	76.0	1.00	1.00	% by Weight		76.1			0.131	20	
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Joy D. Chang For Brian Cone, Industrial Services Manager

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Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
11/13/03 11:17

Notes and Definitions

- D Data reported from a preparation or analytical dilution.
- J Estimated value.
- Q-14 The Spike Recovery and/or RPD is outside of control limits due to a non-homogeneous sample matrix.
- R-05 Reporting limits raised due to dilution necessary for analysis. Sample contains high levels of reported analyte, non-target analyte, and/or matrix interference.
- R-08 Due to matrix unable to resolve Benzofluoranthene isomers. Value reported only in Benzo(b) category represents Total Benzo(b+k)fluoranthene.
- U Analyte included in the analysis but not detected.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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SAIC 1220 SW Morrison Suite 500 Portland, OR 97205	Project: Chevron #20-6195 Astoria, OR Project Number: N/A Project Manager: Gerry Koschal	Reported: 04/27/04 14:44
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ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB257 (c) 8	P4C1020-01	Soil	03/31/04 13:00	03/31/04 15:35
SB257 (c) W	P4C1020-02	Water	03/31/04 13:00	03/31/04 15:35
SB258 (c) 8.5	P4C1020-03	Soil	03/31/04 12:45	03/31/04 15:35
SB258 (c) W	P4C1020-04	Water	03/31/04 12:45	03/31/04 15:35
SB259 (c) 8.5	P4C1020-05	Soil	03/31/04 12:30	03/31/04 15:35
SB259 (c) W	P4C1020-06	Water	03/31/04 12:30	03/31/04 15:35
SB256 (c) 6	P4C1020-07	Soil	03/31/04 12:00	03/31/04 15:35

North Creek Analytical - Portland

Crystal Jones, Project Manager

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SAIC 1220 SW Morrison Suite 500 Portland, OR 97205	Project: Chevron #20-6195 Astoria, OR Project Number: N/A Project Manager: Gerry Koschal	Reported: 04/27/04 14:44
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**Gasoline Hydrocarbons per NW TPH-Gx Method
 North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SB256 (c) 6 (P4C1020-07RE3) Soil						Sampled: 03/31/04	Received: 03/31/04		A-03
Gasoline Range Hydrocarbons	6.23	4.00	mg/kg dry	1	NW TPH-Gx	04/19/04	04/23/04	4040961	O-04
<i>Surr: a,a,a-TFT</i>	<i>72.8 %</i>	<i>50-150</i>							<i>O-04</i>

North Creek Analytical - Portland

Crystal Jones, Project Manager

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SAIC 1220 SW Morrison Suite 500 Portland, OR 97205	Project: Chevron #20-6195 Astoria, OR Project Number: N/A Project Manager: Gerry Koschal	Reported: 04/27/04 14:44
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Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SB256 (c) 6 (P4C1020-07) Soil						Sampled: 03/31/04 Received: 03/31/04			
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	04/02/04	04/02/04	4040068	
Heavy Oil Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
<i>Surr: 1-Chlorooctadecane</i>	103 %	50-150							

North Creek Analytical - Portland

Crystal Jones, Project Manager

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SAIC 1220 SW Morrison Suite 500 Portland, OR 97205	Project: Chevron #20-6195 Astoria, OR Project Number: N/A Project Manager: Gerry Koschal	Reported: 04/27/04 14:44
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**Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SB257 (c) 8 (P4C1020-01) Soil						Sampled: 03/31/04 Received: 03/31/04			
Chromium	3.48	0.410	mg/kg dry	1	EPA 6020	04/09/04	04/10/04	4040355	
Hexavalent Chromium	ND	10.0	"	10	EPA 3060A	04/08/04	04/14/04	4040318	
SB258 (c) 8.5 (P4C1020-03) Soil						Sampled: 03/31/04 Received: 03/31/04			
Chromium	16.3	0.376	mg/kg dry	1	EPA 6020	04/09/04	04/10/04	4040355	
Hexavalent Chromium	ND	10.0	"	10	EPA 3060A	04/08/04	04/14/04	4040318	
SB259 (c) 8.5 (P4C1020-05) Soil						Sampled: 03/31/04 Received: 03/31/04			
Chromium	12.9	0.413	mg/kg dry	1	EPA 6020	04/09/04	04/10/04	4040355	
Hexavalent Chromium	ND	10.0	"	10	EPA 3060A	04/08/04	04/14/04	4040318	
SB256 (c) 6 (P4C1020-07) Soil						Sampled: 03/31/04 Received: 03/31/04			
Arsenic	2.19	0.403	mg/kg dry	1	EPA 6020	04/09/04	04/10/04	4040355	
Barium	37.5	0.403	"	"	"	"	"	"	
Cadmium	ND	0.403	"	"	"	"	"	"	
Chromium	6.81	0.403	"	"	"	"	"	"	
Lead	2.68	0.403	"	"	"	"	"	"	
Mercury	ND	0.0714	"	"	EPA 7471A	04/01/04	04/01/04	4040013	
Selenium	ND	0.403	"	"	EPA 6020	04/09/04	04/10/04	4040355	
Silver	ND	0.403	"	"	"	"	"	"	

North Creek Analytical - Portland

Crystal Jones, Project Manager

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SAIC 1220 SW Morrison Suite 500 Portland, OR 97205	Project: Chevron #20-6195 Astoria, OR Project Number: N/A Project Manager: Gerry Koschal	Reported: 04/27/04 14:44
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**Dissolved Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SB257 (c) W (P4C1020-02) Water						Sampled: 03/31/04 Received: 03/31/04			
Chromium	ND	0.00100	mg/l	1	EPA 6020	04/05/04	04/06/04	4040164	
SB258 (c) W (P4C1020-04) Water						Sampled: 03/31/04 Received: 03/31/04			
Chromium	0.0106	0.00100	mg/l	1	EPA 6020	04/05/04	04/06/04	4040164	
SB259 (c) W (P4C1020-06) Water						Sampled: 03/31/04 Received: 03/31/04			
Chromium	0.120	0.00100	mg/l	1	EPA 6020	04/05/04	04/06/04	4040164	

North Creek Analytical - Portland

Crystal Jones, Project Manager

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SAIC 1220 SW Morrison Suite 500 Portland, OR 97205	Project: Chevron #20-6195 Astoria, OR Project Number: N/A Project Manager: Gerry Koschal	Reported: 04/27/04 14:44
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Dissolved Hexavalent Chromium per EPA Method 7195
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SB257 (c) W (P4C1020-02) Water						Sampled: 03/31/04 Received: 03/31/04			
Hexavalent Chromium (dissolved)	ND	0.0100	mg/l	1	7195 Diss.	04/01/04	04/02/04	4040018	
SB258 (c) W (P4C1020-04) Water						Sampled: 03/31/04 Received: 03/31/04			
Hexavalent Chromium (dissolved)	ND	0.0100	mg/l	1	7195 Diss.	04/01/04	04/02/04	4040018	
SB259 (c) W (P4C1020-06) Water						Sampled: 03/31/04 Received: 03/31/04			
Hexavalent Chromium (dissolved)	0.0126	0.0100	mg/l	1	7195 Diss.	04/01/04	04/02/04	4040018	

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Polychlorinated Biphenyls per EPA Method 8082
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SB256 (c) 6 (P4C1020-07) Soil						Sampled: 03/31/04 Received: 03/31/04			
Aroclor 1016	ND	67.0	ug/kg dry	1	EPA 8082	04/01/04	04/06/04	4040012	
Aroclor 1221	ND	134	"	"	"	"	"	"	
Aroclor 1232	ND	67.0	"	"	"	"	"	"	
Aroclor 1242	ND	67.0	"	"	"	"	"	"	
Aroclor 1248	ND	67.0	"	"	"	"	"	"	
Aroclor 1254	ND	67.0	"	"	"	"	"	"	
Aroclor 1260	ND	67.0	"	"	"	"	"	"	
<i>Surr: 2,4,5,6-Tetrachloro-m-xylene</i>	95.2 %	36-140							
<i>Surr: Decachlorobiphenyl</i>	92.7 %	16-149							

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Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
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SB256 (c) 6 (P4C1020-07) Soil

Sampled: 03/31/04 Received: 03/31/04

Acetone	ND	2500	ug/kg dry	1	EPA 8260B	04/01/04	04/03/04	4040062	
Benzene	ND	100	"	"	"	"	"	"	
Bromobenzene	ND	100	"	"	"	"	"	"	
Bromochloromethane	ND	100	"	"	"	"	"	"	
Bromodichloromethane	ND	100	"	"	"	"	"	"	
Bromoform	ND	100	"	"	"	"	"	"	
Bromomethane	ND	500	"	"	"	"	"	"	
2-Butanone	ND	1000	"	"	"	"	"	"	
n-Butylbenzene	ND	500	"	"	"	"	"	"	
sec-Butylbenzene	ND	100	"	"	"	"	"	"	
tert-Butylbenzene	ND	100	"	"	"	"	"	"	
Carbon disulfide	ND	1000	"	"	"	"	"	"	
Carbon tetrachloride	ND	100	"	"	"	"	"	"	
Chlorobenzene	ND	100	"	"	"	"	"	"	
Chloroethane	ND	100	"	"	"	"	"	"	
Chloroform	ND	100	"	"	"	"	"	"	
Chloromethane	ND	500	"	"	"	"	"	"	
2-Chlorotoluene	ND	100	"	"	"	"	"	"	
4-Chlorotoluene	ND	100	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	500	"	"	"	"	"	"	
Dibromochloromethane	ND	100	"	"	"	"	"	"	
1,2-Dibromoethane	ND	100	"	"	"	"	"	"	
Dibromomethane	ND	100	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	100	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	100	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	500	"	"	"	"	"	"	
1,1-Dichloroethane	ND	100	"	"	"	"	"	"	
1,2-Dichloroethane	ND	100	"	"	"	"	"	"	
1,1-Dichloroethene	ND	100	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	100	"	"	"	"	"	"	
1,2-Dichloropropane	ND	100	"	"	"	"	"	"	
1,3-Dichloropropane	ND	100	"	"	"	"	"	"	
2,2-Dichloropropane	ND	100	"	"	"	"	"	"	
1,1-Dichloropropene	ND	100	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	100	"	"	"	"	"	"	

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Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
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SB256 (c) 6 (P4C1020-07) Soil

Sampled: 03/31/04 Received: 03/31/04

trans-1,3-Dichloropropene	ND	100	ug/kg dry	1	EPA 8260B	04/01/04	04/03/04	4040062	
Ethylbenzene	ND	100	"	"	"	"	"	"	
Hexachlorobutadiene	ND	200	"	"	"	"	"	"	
2-Hexanone	ND	1000	"	"	"	"	"	"	
Isopropylbenzene	ND	200	"	"	"	"	"	"	
p-Isopropyltoluene	ND	200	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	100	"	"	"	"	"	"	
Methylene chloride	ND	500	"	"	"	"	"	"	
Naphthalene	ND	200	"	"	"	"	"	"	
n-Propylbenzene	ND	100	"	"	"	"	"	"	
Styrene	ND	100	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	100	"	"	"	"	"	"	
Tetrachloroethene	ND	100	"	"	"	"	"	"	
Toluene	ND	100	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	100	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	100	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	100	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	100	"	"	"	"	"	"	
Trichloroethene	ND	100	"	"	"	"	"	"	
Trichlorofluoromethane	ND	100	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	100	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	100	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	100	"	"	"	"	"	"	
Vinyl chloride	ND	100	"	"	"	"	"	"	
o-Xylene	ND	100	"	"	"	"	"	"	
m,p-Xylene	ND	200	"	"	"	"	"	"	

Surr: 4-BFB	87.0 %	42.6-130
Surr: 1,2-DCA-d4	91.6 %	57.3-144
Surr: Dibromofluoromethane	87.0 %	45.5-130
Surr: Toluene-d8	89.7 %	42.1-144

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Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SB256 (c) 6 (P4C1020-07) Soil						Sampled: 03/31/04 Received: 03/31/04			
Acenaphthene	ND	13.4	ug/kg dry	1	EPA 8270m	04/01/04	04/09/04	4040010	
Acenaphthylene	ND	13.4	"	"	"	"	"	"	
Anthracene	ND	13.4	"	"	"	"	"	"	
Benzo (a) anthracene	ND	13.4	"	"	"	"	"	"	
Benzo (a) pyrene	ND	13.4	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	13.4	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	13.4	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	13.4	"	"	"	"	"	"	
Chrysene	ND	13.4	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	13.4	"	"	"	"	"	"	
Fluoranthene	ND	13.4	"	"	"	"	"	"	
Fluorene	ND	13.4	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	13.4	"	"	"	"	"	"	
Naphthalene	ND	13.4	"	"	"	"	"	"	
Phenanthrene	ND	13.4	"	"	"	"	"	"	
Pyrene	ND	13.4	"	"	"	"	"	"	
<i>Surr: Fluorene-d10</i>	83.6 %	40-150							
<i>Surr: Pyrene-d10</i>	98.2 %	40-150							
<i>Surr: Benzo (a) pyrene-d12</i>	91.2 %	40-150							

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**Percent Dry Weight (Solids) per Standard Methods
North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SB257 (c) 8 (P4C1020-01) Soil					Sampled: 03/31/04 Received: 03/31/04				
% Solids	76.7	1.00 % by Weight		1	NCA SOP	04/05/04	04/06/04	4040175	
SB258 (c) 8.5 (P4C1020-03) Soil					Sampled: 03/31/04 Received: 03/31/04				
% Solids	77.8	1.00 % by Weight		1	NCA SOP	04/05/04	04/06/04	4040175	
SB259 (c) 8.5 (P4C1020-05) Soil					Sampled: 03/31/04 Received: 03/31/04				
% Solids	78.1	1.00 % by Weight		1	NCA SOP	04/05/04	04/06/04	4040175	
SB256 (c) 6 (P4C1020-07) Soil					Sampled: 03/31/04 Received: 03/31/04				
% Solids	76.4	1.00 % by Weight		1	NCA SOP	04/05/04	04/06/04	4040175	

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Gasoline Hydrocarbons per NW TPH-Gx Method - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040042 - EPA 5035

Blank (4040042-BLK1)				Prepared: 04/01/04 Analyzed: 04/02/04						
Gasoline Range Hydrocarbons	ND	4.00	mg/kg							
<i>Surr: a,a,a-TFT</i>	2.34		"	2.50		93.6	50-150			

LCS (4040042-BS1)				Prepared: 04/01/04 Analyzed: 04/02/04						
Gasoline Range Hydrocarbons	42.2	4.00	mg/kg	50.0		84.4	70-130			
<i>Surr: a,a,a-TFT</i>	2.45		"	2.50		98.0	50-150			

Duplicate (4040042-DUP1)				Source: P4C0923-01		Prepared: 04/01/04 Analyzed: 04/05/04				
Gasoline Range Hydrocarbons	11700	400	mg/kg dry		14500			21.4	40	
<i>Surr: a,a,a-TFT</i>	46.1		"	3.26		>300%	50-150			S-09

Batch 4040744 - EPA 5035

Blank (4040744-BLK1)				Prepared: 04/19/04 Analyzed: 04/20/04						
Gasoline Range Hydrocarbons	ND	4.00	mg/kg							
<i>Surr: a,a,a-TFT</i>	1.72		"	2.50		68.8	50-150			

LCS (4040744-BS1)				Prepared: 04/19/04 Analyzed: 04/20/04						
Gasoline Range Hydrocarbons	44.6	4.00	mg/kg	50.0		89.2	70-130			
<i>Surr: a,a,a-TFT</i>	2.57		"	2.50		103	50-150			

Duplicate (4040744-DUP1)				Source: P4C1020-07RE2		Prepared: 04/19/04 Analyzed: 04/20/04				
Gasoline Range Hydrocarbons	37.5	4.00	mg/kg dry		35.7			4.92	40	
<i>Surr: a,a,a-TFT</i>	4.42		"	3.27		135	50-150			

Matrix Spike (4040744-MS1)				Source: P4C1020-07RE2		Prepared: 04/19/04 Analyzed: 04/20/04				
Gasoline Range Hydrocarbons	90.5	4.00	mg/kg dry	65.4	35.7	83.8	65-130			
<i>Surr: a,a,a-TFT</i>	2.34		"	3.27		71.6	50-150			

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Gasoline Hydrocarbons per NW TPH-Gx Method - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040961 - EPA 5035										
Blank (4040961-BLK1)					Prepared & Analyzed: 04/23/04					
Gasoline Range Hydrocarbons	ND	2.00	mg/kg							
Surr: a,a,a-TFT	1.19		"	1.25		95.2	50-150			
LCS (4040961-BS2)					Prepared & Analyzed: 04/23/04					
Gasoline Range Hydrocarbons	40.5	4.00	mg/kg	50.0		81.0	70-130			
Surr: a,a,a-TFT	2.42		"	2.50		96.8	50-150			
LCS Dup (4040961-BSD2)					Prepared & Analyzed: 04/23/04					
Gasoline Range Hydrocarbons	42.0	4.00	mg/kg	50.0		84.0	70-130	3.64	40	
Surr: a,a,a-TFT	2.46		"	2.50		98.4	50-150			
Duplicate (4040961-DUP1)					Source: P4C1020-07RE3 Prepared & Analyzed: 04/23/04					
Gasoline Range Hydrocarbons	2.80	4.00	mg/kg dry		6.23			76.0	40	Q-14
Surr: a,a,a-TFT	2.41		"	3.27		73.7	50-150			

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Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040068 - EPA 3550 Fuels

Blank (4040068-BLK1)				Prepared & Analyzed: 04/02/04						
Diesel Range Organics	ND	25.0	mg/kg							
Heavy Oil Range Hydrocarbons	ND	50.0	"							
<i>Surr: 1-Chlorooctadecane</i>	4.47		"	4.80		93.1	50-150			

LCS (4040068-BS1)				Prepared & Analyzed: 04/02/04						
Diesel Range Organics	111	25.0	mg/kg	125		88.8	50-150			
Heavy Oil Range Hydrocarbons	79.7	50.0	"	75.0		106	50-150			
<i>Surr: 1-Chlorooctadecane</i>	4.60		"	4.80		95.8	50-150			

Duplicate (4040068-DUP1)				Source: P4C0897-01		Prepared & Analyzed: 04/02/04				
Diesel Range Organics	6410	250	mg/kg dry		6770			5.46	50	
Heavy Oil Range Hydrocarbons	3220	500	"		3330			3.36	50	
<i>Surr: 1-Chlorooctadecane</i>	18.4		"	5.35		>300%	50-150			S-02

Duplicate (4040068-DUP2)				Source: P4C0897-02		Prepared & Analyzed: 04/02/04				
Diesel Range Organics	566	25.0	mg/kg dry		475			17.5	50	
Heavy Oil Range Hydrocarbons	ND	50.0	"		ND			NA	50	
<i>Surr: 1-Chlorooctadecane</i>	4.98		"	5.32		93.6	50-150			

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Total Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040013 - EPA 7471

Blank (4040013-BLK1) Prepared & Analyzed: 04/01/04

Mercury	ND	0.100	mg/kg							
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LCS (4040013-BS1) Prepared & Analyzed: 04/01/04

Mercury	0.996	0.100	mg/kg	1.00		99.6	80-120			
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Duplicate (4040013-DUP1) Source: P4C1005-01 Prepared & Analyzed: 04/01/04

Mercury	0.158	0.0735	mg/kg dry		0.106			39.4	40	
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Matrix Spike (4040013-MS1) Source: P4C1005-01 Prepared & Analyzed: 04/01/04

Mercury	1.12	0.0610	mg/kg dry	1.02	0.106	99.4	75-125			
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Matrix Spike (4040013-MS2) Source: P4C1005-02 Prepared & Analyzed: 04/01/04

Mercury	1.26	0.0758	mg/kg dry	1.21	0.0411	101	75-125			
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Batch 4040318 - EPA 3060A Cr6

Blank (4040318-BLK1) Prepared: 04/08/04 Analyzed: 04/14/04

Hexavalent Chromium	ND	10.0	mg/kg							
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LCS (4040318-BS1) Prepared: 04/08/04 Analyzed: 04/14/04

Hexavalent Chromium	46.6	10.0	mg/kg	50.0		93.2	80-120			
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LCS (4040318-BS2) Prepared: 04/08/04 Analyzed: 04/14/04

Hexavalent Chromium	48.4	10.0	mg/kg	50.0		96.8	80-120			
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LCS (4040318-BS3) Prepared: 04/08/04 Analyzed: 04/14/04

Hexavalent Chromium	48.1	10.0	mg/kg	50.0		96.2	80-120			
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North Creek Analytical - Portland

Crystal Jones, Project Manager

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SAIC 1220 SW Morrison Suite 500 Portland, OR 97205	Project: Chevron #20-6195 Astoria, OR Project Number: N/A Project Manager: Gerry Koschal	Reported: 04/27/04 14:44
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Total Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040318 - EPA 3060A Cr6

LCS Dup (4040318-BSD1)

Prepared: 04/08/04 Analyzed: 04/14/04

Hexavalent Chromium	46.9	10.0	mg/kg	50.0		93.8	80-120	0.642	20	
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Duplicate (4040318-DUP1)

Source: P4C1020-01

Prepared: 04/08/04 Analyzed: 04/14/04

Hexavalent Chromium	ND	10.0	mg/kg dry		ND			NA	40	
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Matrix Spike (4040318-MS1)

Source: P4C1020-01

Prepared: 04/08/04 Analyzed: 04/14/04

Hexavalent Chromium	60.3	10.0	mg/kg dry	62.1	ND	97.1	75-125			
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Batch 4040355 - EPA 3050

Blank (4040355-BLK1)

Prepared: 04/09/04 Analyzed: 04/10/04

Arsenic	ND	0.500	mg/kg							
Barium	ND	0.500	"							
Cadmium	ND	0.500	"							
Chromium	ND	0.500	"							
Lead	ND	0.500	"							
Selenium	ND	0.500	"							
Silver	ND	0.500	"							

LCS (4040355-BS1)

Prepared: 04/09/04 Analyzed: 04/10/04

Arsenic	9.19	0.500	mg/kg	10.0		91.9	80-120			
Barium	9.06	0.500	"	10.0		90.6	80-120			
Cadmium	8.95	0.500	"	10.0		89.5	80-120			
Chromium	9.88	0.500	"	10.0		98.8	80-120			
Lead	9.36	0.500	"	10.0		93.6	80-120			
Selenium	9.04	0.500	"	10.0		90.4	80-120			
Silver	4.97	0.500	"	5.00		99.4	80-120			

North Creek Analytical - Portland

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SAIC 1220 SW Morrison Suite 500 Portland, OR 97205	Project: Chevron #20-6195 Astoria, OR Project Number: N/A Project Manager: Gerry Koschal	Reported: 04/27/04 14:44
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Total Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040355 - EPA 3050

LCS Dup (4040355-BSD1)

Prepared: 04/09/04 Analyzed: 04/10/04

Arsenic	9.40	0.500	mg/kg	10.0		94.0	80-120	2.26	20	
Barium	9.09	0.500	"	10.0		90.9	80-120	0.331	20	
Cadmium	9.04	0.500	"	10.0		90.4	80-120	1.00	20	
Chromium	10.1	0.500	"	10.0		101	80-120	2.20	20	
Lead	9.34	0.500	"	10.0		93.4	80-120	0.214	20	
Selenium	9.80	0.500	"	10.0		98.0	80-120	8.07	20	
Silver	5.20	0.500	"	5.00		104	80-120	4.52	20	

Duplicate (4040355-DUP1)

Source: P4C1020-01

Prepared: 04/09/04 Analyzed: 04/10/04

Arsenic	1.90	0.446	mg/kg dry		1.38			31.7	40	
Barium	45.7	0.446	"		17.7			88.3	40	Q-14
Cadmium	ND	0.446	"		ND			NA	40	
Chromium	8.28	0.446	"		3.48			81.6	40	Q-14
Lead	7.83	0.446	"		3.78			69.8	40	Q-14
Selenium	ND	0.446	"		0.684				40	
Silver	ND	0.446	"		ND			NA	40	

Matrix Spike (4040355-MS1)

Source: P4C1020-01

Prepared: 04/09/04 Analyzed: 04/10/04

Arsenic	12.2	0.385	mg/kg dry	10.0	1.38	108	75-125			
Barium	52.2	0.385	"	10.0	17.7	>300%	75-125			Q-14
Cadmium	10.1	0.385	"	10.0	ND	101	75-125			
Chromium	18.8	0.385	"	10.0	3.48	153	75-125			Q-14
Lead	12.5	0.385	"	10.0	3.78	87.2	75-125			
Selenium	10.3	0.385	"	10.0	0.684	96.2	75-125			
Silver	5.54	0.385	"	5.01	ND	111	75-125			

Matrix Spike (4040355-MS2)

Source: P4C1020-03

Prepared: 04/09/04 Analyzed: 04/10/04

Arsenic	12.1	0.388	mg/kg dry	9.96	1.92	102	75-125			
Barium	37.7	0.388	"	9.96	35.7	20.1	75-125			Q-14
Cadmium	9.85	0.388	"	9.96	ND	98.9	75-125			
Chromium	28.9	0.388	"	9.96	16.3	127	75-125			Q-14
Lead	13.0	0.388	"	9.96	2.65	104	75-125			
Selenium	10.8	0.388	"	9.96	ND	108	75-125			
Silver	5.64	0.388	"	4.98	ND	113	75-125			

North Creek Analytical - Portland

Crystal Jones, Project Manager

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Dissolved Metals per EPA 6000/7000 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040164 - EPA 200/3005 Diss

Blank (4040164-BLK1) Prepared: 04/05/04 Analyzed: 04/06/04

Chromium	ND	0.00100	mg/l							
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LCS (4040164-BS1) Prepared: 04/05/04 Analyzed: 04/06/04

Chromium	0.0990	0.00100	mg/l	0.100		99.0	80-120			
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LCS Dup (4040164-BSD1) Prepared: 04/05/04 Analyzed: 04/06/04

Chromium	0.110	0.00100	mg/l	0.100		110	80-120	10.5	20	
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Duplicate (4040164-DUP1) Source: P4D0086-01 Prepared: 04/05/04 Analyzed: 04/06/04

Chromium	ND	0.00100	mg/l		ND			NA	20	
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Matrix Spike (4040164-MS1) Source: P4D0086-01 Prepared: 04/05/04 Analyzed: 04/06/04

Chromium	0.0994	0.00100	mg/l	0.100	ND	99.4	75-125			
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Matrix Spike (4040164-MS2) Source: P4D0086-02 Prepared: 04/05/04 Analyzed: 04/06/04

Chromium	0.0978	0.00100	mg/l	0.100	ND	97.8	75-125			
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Dissolved Hexavalent Chromium per EPA Method 7195 - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040018 - EPA 7195

Blank (4040018-BLK1)

Prepared: 04/01/04 Analyzed: 04/02/04

Hexavalent Chromium (dissolved) ND 0.0100 mg/l

LCS (4040018-BS1)

Prepared: 04/01/04 Analyzed: 04/02/04

Hexavalent Chromium (dissolved) 0.970 0.0100 mg/l 1.00 97.0 85-115

Duplicate (4040018-DUP1)

Source: P4C1020-02

Prepared: 04/01/04 Analyzed: 04/02/04

Hexavalent Chromium (dissolved) ND 0.0100 mg/l ND NA 20

Matrix Spike (4040018-MS1)

Source: P4C1020-02

Prepared: 04/01/04 Analyzed: 04/02/04

Hexavalent Chromium (dissolved) 0.901 0.0100 mg/l 1.00 ND 90.1 80-120

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Polychlorinated Biphenyls per EPA Method 8082 - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040012 - EPA 3550

Blank (4040012-BLK1)

Prepared: 04/01/04 Analyzed: 04/06/04

Aroclor 1016	ND	67.0	ug/kg							
Aroclor 1221	ND	134	"							
Aroclor 1232	ND	67.0	"							
Aroclor 1242	ND	67.0	"							
Aroclor 1248	ND	67.0	"							
Aroclor 1254	ND	67.0	"							
Aroclor 1260	ND	67.0	"							
<i>Surr: 2,4,5,6-Tetrachloro-m-xylene</i>	34.4		"	33.3		103	36-140			
<i>Surr: Decachlorobiphenyl</i>	25.2		"	33.3		75.7	16-149			

LCS (4040012-BS1)

Prepared: 04/01/04 Analyzed: 04/06/04

Aroclor 1016	334	67.0	ug/kg	333		100	57-135			
Aroclor 1260	318	67.0	"	333		95.5	60-135			
<i>Surr: 2,4,5,6-Tetrachloro-m-xylene</i>	33.7		"	33.3		101	36-140			
<i>Surr: Decachlorobiphenyl</i>	29.3		"	33.3		88.0	16-149			

Matrix Spike (4040012-MS1)

Source: P4C0948-04

Prepared: 04/01/04 Analyzed: 04/06/04

Aroclor 1016	348	67.0	ug/kg dry	367	ND	94.8	37-145			
Aroclor 1260	262	67.0	"	367	ND	71.4	25-144			
<i>Surr: 2,4,5,6-Tetrachloro-m-xylene</i>	36.4		"	36.7		99.2	36-140			
<i>Surr: Decachlorobiphenyl</i>	40.2		"	36.7		110	16-149			

Matrix Spike Dup (4040012-MSD1)

Source: P4C0948-04

Prepared: 04/01/04 Analyzed: 04/06/04

Aroclor 1016	349	67.0	ug/kg dry	367	ND	95.1	37-145	0.287	26	
Aroclor 1260	257	67.0	"	367	ND	70.0	25-144	1.93	30	
<i>Surr: 2,4,5,6-Tetrachloro-m-xylene</i>	37.1		"	36.7		101	36-140			
<i>Surr: Decachlorobiphenyl</i>	41.4		"	36.7		113	16-149			

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Volatile Organic Compounds per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040062 - EPA 5035

Blank (4040062-BLK1)

Prepared: 04/01/04 Analyzed: 04/02/04

Acetone	ND	2500	ug/kg							
Benzene	ND	100	"							
Bromobenzene	ND	100	"							
Bromochloromethane	ND	100	"							
Bromodichloromethane	ND	100	"							
Bromoform	ND	100	"							
Bromomethane	ND	500	"							
2-Butanone	ND	1000	"							
n-Butylbenzene	ND	500	"							
sec-Butylbenzene	ND	100	"							
tert-Butylbenzene	ND	100	"							
Carbon disulfide	ND	1000	"							
Carbon tetrachloride	ND	100	"							
Chlorobenzene	ND	100	"							
Chloroethane	ND	100	"							
Chloroform	ND	100	"							
Chloromethane	ND	500	"							
2-Chlorotoluene	ND	100	"							
4-Chlorotoluene	ND	100	"							
1,2-Dibromo-3-chloropropane	ND	500	"							
Dibromochloromethane	ND	100	"							
1,2-Dibromoethane	ND	100	"							
Dibromomethane	ND	100	"							
1,2-Dichlorobenzene	ND	100	"							
1,3-Dichlorobenzene	ND	100	"							
1,4-Dichlorobenzene	ND	100	"							
Dichlorodifluoromethane	ND	500	"							
1,1-Dichloroethane	ND	100	"							
1,2-Dichloroethane	ND	100	"							
1,1-Dichloroethene	ND	100	"							
cis-1,2-Dichloroethene	ND	100	"							
trans-1,2-Dichloroethene	ND	100	"							
1,2-Dichloropropane	ND	100	"							
1,3-Dichloropropane	ND	100	"							
2,2-Dichloropropane	ND	100	"							
1,1-Dichloropropene	ND	100	"							

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Volatile Organic Compounds per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040062 - EPA 5035

Blank (4040062-BLK1)

Prepared: 04/01/04 Analyzed: 04/02/04

cis-1,3-Dichloropropene	ND	100	ug/kg							
trans-1,3-Dichloropropene	ND	100	"							
Ethylbenzene	ND	100	"							
Hexachlorobutadiene	ND	200	"							
2-Hexanone	ND	1000	"							
Isopropylbenzene	ND	200	"							
p-Isopropyltoluene	ND	200	"							
4-Methyl-2-pentanone	ND	500	"							
Methyl tert-butyl ether	ND	100	"							
Methylene chloride	ND	500	"							
Naphthalene	ND	200	"							
n-Propylbenzene	ND	100	"							
Styrene	ND	100	"							
1,1,1,2-Tetrachloroethane	ND	100	"							
1,1,2,2-Tetrachloroethane	ND	100	"							
Tetrachloroethene	ND	100	"							
Toluene	ND	100	"							
1,2,3-Trichlorobenzene	ND	100	"							
1,2,4-Trichlorobenzene	ND	100	"							
1,1,1-Trichloroethane	ND	100	"							
1,1,2-Trichloroethane	ND	100	"							
Trichloroethene	ND	100	"							
Trichlorofluoromethane	ND	100	"							
1,2,3-Trichloropropane	ND	100	"							
1,2,4-Trimethylbenzene	ND	100	"							
1,3,5-Trimethylbenzene	ND	100	"							
Vinyl chloride	ND	100	"							
o-Xylene	ND	100	"							
m,p-Xylene	ND	200	"							
Surr: 4-BFB	2160		"	2000		108	42.6-130			
Surr: 1,2-DCA-d4	2140		"	2000		107	57.3-144			
Surr: Dibromofluoromethane	2120		"	2000		106	45.5-130			
Surr: Toluene-d8	2190		"	2000		110	42.1-144			

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Crystal Jones, Project Manager

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Volatile Organic Compounds per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040062 - EPA 5035

LCS (4040062-BS1)

Prepared: 04/01/04 Analyzed: 04/02/04

Benzene	1940	100	ug/kg	2000		97.0	81.9-125			
Chlorobenzene	2060	100	"	2000		103	79.2-125			
1,1-Dichloroethene	1900	100	"	2000		95.0	66.1-125			
Toluene	2080	100	"	2000		104	80-125			
Trichloroethene	2070	100	"	2000		104	76-125			
Surr: 4-BFB	2190		"	2000		110	42.6-130			
Surr: 1,2-DCA-d4	2210		"	2000		110	57.3-144			
Surr: Dibromofluoromethane	2160		"	2000		108	45.5-130			
Surr: Toluene-d8	2260		"	2000		113	42.1-144			

Matrix Spike (4040062-MS1)

Source: P4C0897-01

Prepared: 04/01/04 Analyzed: 04/05/04

Benzene	2220	100	ug/kg dry	2230	ND	99.6	68.5-125			
Chlorobenzene	2390	100	"	2230	ND	107	65.9-125			
1,1-Dichloroethene	2300	100	"	2230	ND	103	55.8-125			
Toluene	2350	100	"	2230	18.9	105	70.3-125			
Trichloroethene	2250	100	"	2230	ND	101	65.5-125			
Surr: 4-BFB	2300		"	2230		103	42.6-130			
Surr: 1,2-DCA-d4	2150		"	2230		96.4	57.3-144			
Surr: Dibromofluoromethane	2260		"	2230		101	45.5-130			
Surr: Toluene-d8	2230		"	2230		100	42.1-144			

Matrix Spike Dup (4040062-MSD1)

Source: P4C0897-01

Prepared: 04/01/04 Analyzed: 04/05/04

Benzene	2180	100	ug/kg dry	2230	ND	97.8	68.5-125	1.82	25	
Chlorobenzene	2400	100	"	2230	ND	108	65.9-125	0.418	25	
1,1-Dichloroethene	2270	100	"	2230	ND	102	55.8-125	1.31	25	
Toluene	2330	100	"	2230	18.9	104	70.3-125	0.855	25	
Trichloroethene	2190	100	"	2230	ND	98.2	65.5-125	2.70	25	
Surr: 4-BFB	2290		"	2230		103	42.6-130			
Surr: 1,2-DCA-d4	2140		"	2230		96.0	57.3-144			
Surr: Dibromofluoromethane	2260		"	2230		101	45.5-130			
Surr: Toluene-d8	2250		"	2230		101	42.1-144			

North Creek Analytical - Portland

Crystal Jones, Project Manager

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SAIC 1220 SW Morrison Suite 500 Portland, OR 97205	Project: Chevron #20-6195 Astoria, OR Project Number: N/A Project Manager: Gerry Koschal	Reported: 04/27/04 14:44
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Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040010 - EPA 3550

Blank (4040010-BLK1)

Prepared: 04/01/04 Analyzed: 04/02/04

Acenaphthene	ND	13.4	ug/kg							
Acenaphthylene	ND	13.4	"							
Anthracene	ND	13.4	"							
Benzo (a) anthracene	ND	13.4	"							
Benzo (a) pyrene	ND	13.4	"							
Benzo (b) fluoranthene	ND	13.4	"							
Benzo (ghi) perylene	ND	13.4	"							
Benzo (k) fluoranthene	ND	13.4	"							
Chrysene	ND	13.4	"							
Dibenzo (a,h) anthracene	ND	13.4	"							
Fluoranthene	ND	13.4	"							
Fluorene	ND	13.4	"							
Indeno (1,2,3-cd) pyrene	ND	13.4	"							
Naphthalene	ND	13.4	"							
Phenanthrene	ND	13.4	"							
Pyrene	ND	13.4	"							
<i>Surr: Fluorene-d10</i>	57.0		"	83.3		68.4	40-150			
<i>Surr: Pyrene-d10</i>	75.1		"	83.3		90.2	40-150			
<i>Surr: Benzo (a) pyrene-d12</i>	70.7		"	83.3		84.9	40-150			

LCS (4040010-BS1)

Prepared: 04/01/04 Analyzed: 04/02/04

Acenaphthene	119	13.4	ug/kg	167		71.3	33-139			
Benzo (a) pyrene	147	13.4	"	167		88.0	45-149			
Pyrene	134	13.4	"	167		80.2	39-138			
<i>Surr: Fluorene-d10</i>	60.9		"	83.3		73.1	40-150			
<i>Surr: Pyrene-d10</i>	71.1		"	83.3		85.4	40-150			
<i>Surr: Benzo (a) pyrene-d12</i>	72.7		"	83.3		87.3	40-150			

North Creek Analytical - Portland

Crystal Jones, Project Manager

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SAIC 1220 SW Morrison Suite 500 Portland, OR 97205	Project: Chevron #20-6195 Astoria, OR Project Number: N/A Project Manager: Gerry Koschal	Reported: 04/27/04 14:44
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Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040010 - EPA 3550

Matrix Spike (4040010-MS1)	Source: P4C0897-01			Prepared: 04/01/04		Analyzed: 04/05/04				
Acenaphthene	472	268	ug/kg dry	186	693	-119	33-139			Q-99
Benzo (a) pyrene	206	268	"	186	ND	111	45-149			
Pyrene	577	268	"	186	838	-140	39-138			Q-99
<i>Surr: Fluorene-d10</i>	<i>ND</i>		<i>"</i>	<i>92.9</i>		<i>NR</i>	<i>40-150</i>			<i>S-01</i>
<i>Surr: Pyrene-d10</i>	<i>ND</i>		<i>"</i>	<i>92.9</i>		<i>NR</i>	<i>40-150</i>			<i>S-01</i>
<i>Surr: Benzo (a) pyrene-d12</i>	<i>77.5</i>		<i>"</i>	<i>92.9</i>		<i>83.4</i>	<i>40-150</i>			

Matrix Spike Dup (4040010-MSD1)	Source: P4C0897-01			Prepared: 04/01/04		Analyzed: 04/05/04				
Acenaphthene	602	268	ug/kg dry	186	693	-48.9	33-139	24.2	60	Q-99
Benzo (a) pyrene	214	268	"	186	ND	115	45-149	3.81	60	
Pyrene	730	268	"	186	838	-58.1	39-138	23.4	60	Q-99
<i>Surr: Fluorene-d10</i>	<i>ND</i>		<i>"</i>	<i>92.9</i>		<i>NR</i>	<i>40-150</i>			<i>S-01</i>
<i>Surr: Pyrene-d10</i>	<i>ND</i>		<i>"</i>	<i>92.9</i>		<i>NR</i>	<i>40-150</i>			<i>S-01</i>
<i>Surr: Benzo (a) pyrene-d12</i>	<i>79.4</i>		<i>"</i>	<i>92.9</i>		<i>85.5</i>	<i>40-150</i>			

North Creek Analytical - Portland

Crystal Jones, Project Manager

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SAIC 1220 SW Morrison Suite 500 Portland, OR 97205	Project: Chevron #20-6195 Astoria, OR Project Number: N/A Project Manager: Gerry Koschal	Reported: 04/27/04 14:44
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Percent Dry Weight (Solids) per Standard Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040175 - Dry Weight

Duplicate (4040175-DUP1)	Source: P4C1006-01	Prepared: 04/05/04	Analyzed: 04/06/04		
% Solids	92.8	1.00% by Weight	92.9	0.108	20
Duplicate (4040175-DUP2)	Source: P4C1006-02	Prepared: 04/05/04	Analyzed: 04/06/04		
% Solids	92.5	1.00% by Weight	92.1	0.433	20
Duplicate (4040175-DUP3)	Source: P4C1006-03	Prepared: 04/05/04	Analyzed: 04/06/04		
% Solids	91.5	1.00% by Weight	91.7	0.218	20

North Creek Analytical - Portland

Crystal Jones, Project Manager

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SAIC 1220 SW Morrison Suite 500 Portland, OR 97205	Project: Chevron #20-6195 Astoria, OR Project Number: N/A Project Manager: Gerry Koschal	Reported: 04/27/04 14:44
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Notes and Definitions

- A-03 Sample was extracted many times due to QC failures. Only the last run is reported.
- O-04 This sample was analyzed outside the EPA recommended holding time.
- Q-14 The matrix spike recovery, and/or RPD, for this QC sample is outside of control limits due to a non-homogeneous sample matrix.
- Q-99 The spike recovery, and/or RPD, for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
- S-01 The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present.
- S-09 Surrogate recovery is outside control limits due to matrix interference.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
- wet Sample results reported on a wet weight basis (as received)
- RPD Relative Percent Difference

North Creek Analytical - Portland

Crystal Jones, Project Manager

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12 November 2003

Tom Calabrese
EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762
RE: Astoria Area-Wide Petroleum Site

Enclosed are the results of analyses for samples received by the laboratory on 09/11/03 09:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Joy D. Chang For Brian Cone
Industrial Services Manager



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-328(D)-2	P3I0433-01	Soil	09/10/03 12:10	09/11/03 09:00
SB-328(D)-5	P3I0433-02	Soil	09/10/03 12:15	09/11/03 09:00
SB-320(D)-2	P3I0433-03	Soil	09/10/03 10:40	09/11/03 09:00
SB-320(D)-5	P3I0433-04	Soil	09/10/03 10:50	09/11/03 09:00
SB-327(D)-2	P3I0433-05	Soil	09/10/03 13:40	09/11/03 09:00
SB-327(D)-5	P3I0433-06	Soil	09/10/03 13:45	09/11/03 09:00
SB-327(D)-10	P3I0433-07	Soil	09/10/03 13:50	09/11/03 09:00
SB-327(D)-15	P3I0433-08	Soil	09/10/03 13:55	09/11/03 09:00
SB-328(D)-10	P3I0433-09	Soil	09/10/03 12:20	09/11/03 09:00
SB-328(D)-15	P3I0433-10	Soil	09/10/03 12:25	09/11/03 09:00
SB-324(D)-DUP	P3I0433-11	Soil	09/10/03 11:40	09/11/03 09:00
SB-325(D)-2	P3I0433-12	Soil	09/10/03 14:30	09/11/03 09:00
SB-325(D)-5	P3I0433-13	Soil	09/10/03 14:35	09/11/03 09:00
SB-325(D)-10	P3I0433-14	Soil	09/10/03 14:40	09/11/03 09:00
SB-325(D)-15	P3I0433-15	Soil	09/10/03 14:45	09/11/03 09:00
SB-325(D)-DUP	P3I0433-16	Soil	09/10/03 15:00	09/11/03 09:00
SB-017(A)-7.5	P3I0433-17	Soil	09/08/03 11:30	09/11/03 09:00
SB-632(N)-7.5	P3I0433-18	Soil	09/08/03 16:41	09/11/03 09:00
SB-321(D)-2	P3I0433-19	Soil	09/09/03 10:34	09/11/03 09:00
SB-321(D)-5	P3I0433-20	Soil	09/09/03 10:41	09/11/03 09:00
SB-326(D)-2	P3I0433-21	Soil	09/09/03 16:30	09/11/03 09:00
SB-326(D)-5	P3I0433-22	Soil	09/09/03 16:36	09/11/03 09:00
SB-326(D)-10	P3I0433-23	Soil	09/09/03 16:42	09/11/03 09:00
SB-322(D)-2	P3I0433-24	Soil	09/10/03 09:25	09/11/03 09:00
SB-322(D)-5	P3I0433-25	Soil	09/10/03 09:35	09/11/03 09:00
SB-323(D)-7	P3I0433-26	Soil	09/10/03 10:44	09/11/03 09:00
SB-015(A)-7	P3I0433-27	Soil	09/10/03 12:09	09/11/03 09:00
SB-324(D)-2	P3I0433-28	Soil	09/10/03 11:15	09/11/03 09:00
SB-324(D)-5	P3I0433-29	Soil	09/10/03 11:20	09/11/03 09:00

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

North Creek Analytical, Inc.
Environmental Laboratory Network



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-324(D)-10	P3I0433-30	Soil	09/10/03 11:25	09/11/03 09:00
SB-324(D)-15	P3I0433-31	Soil	09/10/03 11:30	09/11/03 09:00

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Gasoline Hydrocarbons per NW TPH-Gx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-328(D)-2 (P3I0433-01) Soil Sampled: 09/10/03 12:10 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090545	09/12/03	09/18/03	NW TPH-G	U
Surrogate: a,a,a-TFT	105 %		50-150			"	"	"	"	
SB-328(D)-5 (P3I0433-02) Soil Sampled: 09/10/03 12:15 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	67.9	2.50	4.00	mg/kg dry	1	3090545	09/12/03	09/18/03	NW TPH-G	
Surrogate: a,a,a-TFT	135 %		50-150			"	"	"	"	
SB-320(D)-2 (P3I0433-03) Soil Sampled: 09/10/03 10:40 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090545	09/12/03	09/18/03	NW TPH-G	U
Surrogate: a,a,a-TFT	76.6 %		50-150			"	"	"	"	
SB-320(D)-5 (P3I0433-04) Soil Sampled: 09/10/03 10:50 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090545	09/12/03	09/18/03	NW TPH-G	U
Surrogate: a,a,a-TFT	83.4 %		50-150			"	"	"	"	
SB-327(D)-2 (P3I0433-05) Soil Sampled: 09/10/03 13:40 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	2.78	2.50	4.00	mg/kg dry	1	3090545	09/12/03	09/18/03	NW TPH-G	J
Surrogate: a,a,a-TFT	101 %		50-150			"	"	"	"	
SB-327(D)-5 (P3I0433-06) Soil Sampled: 09/10/03 13:45 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	6.22	2.50	4.00	mg/kg dry	1	3090545	09/12/03	09/18/03	NW TPH-G	
Surrogate: a,a,a-TFT	102 %		50-150			"	"	"	"	
SB-327(D)-10 (P3I0433-07) Soil Sampled: 09/10/03 13:50 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	758	50.0	80.0	mg/kg dry	20	3090545	09/12/03	09/18/03	NW TPH-G	D
Surrogate: a,a,a-TFT	128 %		50-150			"	"	"	"	D

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Gasoline Hydrocarbons per NW TPH-Gx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-327(D)-15 (P3I0433-08) Soil Sampled: 09/10/03 13:55 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	390	25.0	40.0	mg/kg dry	10	3090545	09/12/03	09/18/03	NW TPH-G	D
Surrogate: a,a,a-TFT	133 %		50-150			"	"	"	"	D
SB-328(D)-10 (P3I0433-09) Soil Sampled: 09/10/03 12:20 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	1360	50.0	80.0	mg/kg dry	20	3090545	09/12/03	09/18/03	NW TPH-G	D
Surrogate: a,a,a-TFT	115 %		50-150			"	"	"	"	D
SB-328(D)-15 (P3I0433-10) Soil Sampled: 09/10/03 12:25 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	11.4	2.50	4.00	mg/kg dry	1	3090545	09/12/03	09/18/03	NW TPH-G	
Surrogate: a,a,a-TFT	91.4 %		50-150			"	"	"	"	
SB-324(D)-DUP (P3I0433-11) Soil Sampled: 09/10/03 11:40 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	366	25.0	40.0	mg/kg dry	10	3090545	09/12/03	09/18/03	NW TPH-G	D
Surrogate: a,a,a-TFT	106 %		50-150			"	"	"	"	D
SB-325(D)-2 (P3I0433-12) Soil Sampled: 09/10/03 14:30 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	5.53	2.50	4.00	mg/kg dry	1	3090545	09/12/03	09/18/03	NW TPH-G	
Surrogate: a,a,a-TFT	86.5 %		50-150			"	"	"	"	
SB-325(D)-5 (P3I0433-13) Soil Sampled: 09/10/03 14:35 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090545	09/12/03	09/18/03	NW TPH-G	U
Surrogate: a,a,a-TFT	91.3 %		50-150			"	"	"	"	
SB-325(D)-10 (P3I0433-14) Soil Sampled: 09/10/03 14:40 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090545	09/12/03	09/18/03	NW TPH-G	U
Surrogate: a,a,a-TFT	95.6 %		50-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Gasoline Hydrocarbons per NW TPH-Gx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-325(D)-15 (P3I0433-15) Soil Sampled: 09/10/03 14:45 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	6.05	2.50	4.00	mg/kg dry	1	3090545	09/12/03	09/18/03	NW TPH-G	
Surrogate: a,a,a-TFT	93.0 %		50-150			"	"	"	"	
SB-325(D)-DUP (P3I0433-16) Soil Sampled: 09/10/03 15:00 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	3.17	2.50	4.00	mg/kg dry	1	3090546	09/12/03	09/18/03	NW TPH-G	J
Surrogate: a,a,a-TFT	100 %		50-150			"	"	"	"	
SB-017(A)-7.5 (P3I0433-17) Soil Sampled: 09/08/03 11:30 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry	1	3090546	09/12/03	09/18/03	NW TPH-G	U
Surrogate: a,a,a-TFT	93.0 %		50-150			"	"	"	"	
SB-632(N)-7.5 (P3I0433-18) Soil Sampled: 09/08/03 16:41 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	1690	50.0	80.0	mg/kg dry	20	3090546	09/12/03	09/19/03	NW TPH-G	D
Surrogate: a,a,a-TFT	170 %		50-150			"	"	"	"	S-09, D
SB-321(D)-2 (P3I0433-19) Soil Sampled: 09/09/03 10:34 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	392	25.0	40.0	mg/kg dry	10	3090546	09/12/03	09/19/03	NW TPH-G	D
Surrogate: a,a,a-TFT	117 %		50-150			"	"	"	"	D
SB-321(D)-5 (P3I0433-20) Soil Sampled: 09/09/03 10:41 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	1530	50.0	80.0	mg/kg dry	20	3090546	09/12/03	09/19/03	NW TPH-G	D
Surrogate: a,a,a-TFT	NR		50-150			"	"	"	"	S-09, D
SB-326(D)-2 (P3I0433-21) Soil Sampled: 09/09/03 16:30 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	31.6	2.50	4.00	mg/kg dry	1	3090546	09/12/03	09/19/03	NW TPH-G	
Surrogate: a,a,a-TFT	86.0 %		50-150			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
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Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 11/12/03 14:48

Gasoline Hydrocarbons per NW TPH-Gx Method
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-326(D)-5 (P3I0433-22) Soil Sampled: 09/09/03 16:36 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	870	50.0	80.0 mg/kg dry		20	3090546	09/12/03	09/19/03	NW TPH-G	D
Surrogate: a,a,a-TFT	124 %		50-150			"	"	"	"	D
SB-326(D)-10 (P3I0433-23) Soil Sampled: 09/09/03 16:42 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	1920	25.0	40.0 mg/kg dry		10	3090546	09/12/03	09/19/03	NW TPH-G	D
Surrogate: a,a,a-TFT	191 %		50-150			"	"	"	"	S-09, D
SB-322(D)-2 (P3I0433-24) Soil Sampled: 09/10/03 09:25 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	4.31	2.50	4.00 mg/kg dry		1	3090546	09/12/03	09/19/03	NW TPH-G	
Surrogate: a,a,a-TFT	95.2 %		50-150			"	"	"	"	
SB-322(D)-5 (P3I0433-25) Soil Sampled: 09/10/03 09:35 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	4.61	2.50	4.00 mg/kg dry		1	3090546	09/12/03	09/19/03	NW TPH-G	
Surrogate: a,a,a-TFT	75.1 %		50-150			"	"	"	"	
SB-323(D)-7 (P3I0433-26) Soil Sampled: 09/10/03 10:44 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	2.61	2.50	4.00 mg/kg dry		1	3090546	09/12/03	09/19/03	NW TPH-G	J
Surrogate: a,a,a-TFT	71.3 %		50-150			"	"	"	"	
SB-015(A)-7 (P3I0433-27) Soil Sampled: 09/10/03 12:09 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	695	25.0	40.0 mg/kg dry		10	3090546	09/12/03	09/19/03	NW TPH-G	D
Surrogate: a,a,a-TFT	125 %		50-150			"	"	"	"	D
SB-324(D)-2 (P3I0433-28) Soil Sampled: 09/10/03 11:15 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	2.75	2.50	4.00 mg/kg dry		1	3090546	09/12/03	09/19/03	NW TPH-G	J
Surrogate: a,a,a-TFT	77.6 %		50-150			"	"	"	"	

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Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 11/12/03 14:48

Gasoline Hydrocarbons per NW TPH-Gx Method
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-324(D)-5 (P3I0433-29) Soil Sampled: 09/10/03 11:20 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	2.63	2.50	4.00	mg/kg dry	1	3090546	09/12/03	09/19/03	NW TPH-G	J
<i>Surrogate: a,a,a-TFT</i>	82.4 %		50-150			"	"	"	"	
SB-324(D)-10 (P3I0433-30) Soil Sampled: 09/10/03 11:25 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	586	50.0	80.0	mg/kg dry	20	3090546	09/12/03	09/19/03	NW TPH-G	D
<i>Surrogate: a,a,a-TFT</i>	92.9 %		50-150			"	"	"	"	D
SB-324(D)-15 (P3I0433-31) Soil Sampled: 09/10/03 11:30 Received: 09/11/03 09:00										
Gasoline Range Hydrocarbons	162	2.50	4.00	mg/kg dry	1	3090546	09/12/03	09/19/03	NW TPH-G	
<i>Surrogate: a,a,a-TFT</i>	100 %		50-150			"	"	"	"	

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EnviroLogic Resources, Inc.
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Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-328(D)-2 (P3I0433-01) Soil Sampled: 09/10/03 12:10 Received: 09/11/03 09:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090657	09/16/03	09/17/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	48.1	25.0	50.0	"	"	"	"	"	"	J
<i>Surrogate: 1-Chlorooctadecane</i>	99.0 %		50-150			"	"	"	"	
SB-328(D)-5 (P3I0433-02) Soil Sampled: 09/10/03 12:15 Received: 09/11/03 09:00										
Diesel Range Organics	21.3	12.5	25.0	mg/kg dry	1	3090657	09/16/03	09/17/03	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	104	25.0	50.0	"	"	"	"	"	"	
<i>Surrogate: 1-Chlorooctadecane</i>	98.3 %		50-150			"	"	"	"	
SB-320(D)-2 (P3I0433-03) Soil Sampled: 09/10/03 10:40 Received: 09/11/03 09:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090657	09/16/03	09/17/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	82.1 %		50-150			"	"	"	"	
SB-320(D)-5 (P3I0433-04) Soil Sampled: 09/10/03 10:50 Received: 09/11/03 09:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090657	09/16/03	09/17/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	86.4 %		50-150			"	"	"	"	
SB-327(D)-2 (P3I0433-05) Soil Sampled: 09/10/03 13:40 Received: 09/11/03 09:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090657	09/16/03	09/17/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	98.4 %		50-150			"	"	"	"	
SB-327(D)-5 (P3I0433-06) Soil Sampled: 09/10/03 13:45 Received: 09/11/03 09:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090657	09/16/03	09/17/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	80.0 %		50-150			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-327(D)-10 (P3I0433-07) Soil Sampled: 09/10/03 13:50 Received: 09/11/03 09:00										
Diesel Range Organics	9640	250	500 mg/kg dry		20	3090657	09/16/03	09/17/03	NWTPH-Dx	D
Heavy Oil Range Hydrocarbons	ND	500	1000	"	"	"	"	"	"	R-05, D, U
Surrogate: 1-Chlorooctadecane	115 %		50-150			"	"	"	"	D
SB-327(D)-15 (P3I0433-08) Soil Sampled: 09/10/03 13:55 Received: 09/11/03 09:00										
Diesel Range Organics	22.0	12.5	25.0 mg/kg dry		1	3090657	09/16/03	09/17/03	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	88.9 %		50-150			"	"	"	"	
SB-328(D)-10 (P3I0433-09) Soil Sampled: 09/10/03 12:20 Received: 09/11/03 09:00										
Diesel Range Organics	3580	12.5	25.0 mg/kg dry		1	3090657	09/16/03	09/17/03	NWTPH-Dx	
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	121 %		50-150			"	"	"	"	
SB-328(D)-15 (P3I0433-10) Soil Sampled: 09/10/03 12:25 Received: 09/11/03 09:00										
Diesel Range Organics	22.8	12.5	25.0 mg/kg dry		1	3090657	09/16/03	09/17/03	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	93.4 %		50-150			"	"	"	"	
SB-324(D)-DUP (P3I0433-11) Soil Sampled: 09/10/03 11:40 Received: 09/11/03 09:00										
Diesel Range Organics	592	125	250 mg/kg dry		10	3090657	09/16/03	09/17/03	NWTPH-Dx	D
Heavy Oil Range Hydrocarbons	1500	250	500	"	"	"	"	"	"	D
Surrogate: 1-Chlorooctadecane	98.6 %		50-150			"	"	"	"	D
SB-325(D)-2 (P3I0433-12) Soil Sampled: 09/10/03 14:30 Received: 09/11/03 09:00										
Diesel Range Organics	ND	12.5	25.0 mg/kg dry		1	3090690	09/17/03	09/18/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	92.1 %		50-150			"	"	"	"	

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EnviroLogic Resources, Inc.
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Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-325(D)-5 (P3I0433-13) Soil Sampled: 09/10/03 14:35 Received: 09/11/03 09:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090690	09/17/03	09/18/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	93.0 %		50-150			"	"	"	"	
SB-325(D)-10 (P3I0433-14) Soil Sampled: 09/10/03 14:40 Received: 09/11/03 09:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090690	09/17/03	09/18/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	94.3 %		50-150			"	"	"	"	
SB-325(D)-15 (P3I0433-15) Soil Sampled: 09/10/03 14:45 Received: 09/11/03 09:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090690	09/17/03	09/18/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	95.0 %		50-150			"	"	"	"	
SB-325(D)-DUP (P3I0433-16) Soil Sampled: 09/10/03 15:00 Received: 09/11/03 09:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090690	09/17/03	09/18/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	92.5 %		50-150			"	"	"	"	
SB-017(A)-7.5 (P3I0433-17) Soil Sampled: 09/08/03 11:30 Received: 09/11/03 09:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090690	09/17/03	09/18/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	86.9 %		50-150			"	"	"	"	
SB-632(N)-7.5 (P3I0433-18) Soil Sampled: 09/08/03 16:41 Received: 09/11/03 09:00										
Diesel Range Organics	282	12.5	25.0	mg/kg dry	1	3090690	09/17/03	09/18/03	NWTPH-Dx	A-101
Heavy Oil Range Hydrocarbons	36.5	25.0	50.0	"	"	"	"	"	"	J
Surrogate: 1-Chlorooctadecane	91.3 %		50-150			"	"	"	"	

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-321(D)-2 (P3I0433-19) Soil Sampled: 09/09/03 10:34 Received: 09/11/03 09:00										
Diesel Range Organics	1780	500	1000	mg/kg dry	40	3090690	09/17/03	09/18/03	NWTPH-Dx	D
Heavy Oil Range Hydrocarbons	3560	1000	2000	"	"	"	"	"	"	D
Surrogate: 1-Chlorooctadecane	NR		50-150			"	"	"	"	S-01, D
SB-321(D)-5 (P3I0433-20) Soil Sampled: 09/09/03 10:41 Received: 09/11/03 09:00										
Diesel Range Organics	6370	500	1000	mg/kg dry	40	3090690	09/17/03	09/18/03	NWTPH-Dx	D
Heavy Oil Range Hydrocarbons	19200	1000	2000	"	"	"	"	"	"	D
Surrogate: 1-Chlorooctadecane	NR		50-150			"	"	"	"	S-01, D
SB-326(D)-2 (P3I0433-21) Soil Sampled: 09/09/03 16:30 Received: 09/11/03 09:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090690	09/17/03	09/18/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	91.7 %		50-150			"	"	"	"	
SB-326(D)-5 (P3I0433-22) Soil Sampled: 09/09/03 16:36 Received: 09/11/03 09:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090690	09/17/03	09/18/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	47.2	25.0	50.0	"	"	"	"	"	"	J
Surrogate: 1-Chlorooctadecane	85.2 %		50-150			"	"	"	"	
SB-326(D)-10 (P3I0433-23) Soil Sampled: 09/09/03 16:42 Received: 09/11/03 09:00										
Diesel Range Organics	202	12.5	25.0	mg/kg dry	1	3090690	09/17/03	09/18/03	NWTPH-Dx	
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	87.3 %		50-150			"	"	"	"	
SB-322(D)-2 (P3I0433-24) Soil Sampled: 09/10/03 09:25 Received: 09/11/03 09:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090690	09/17/03	09/18/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	27.8	25.0	50.0	"	"	"	"	"	"	J
Surrogate: 1-Chlorooctadecane	94.8 %		50-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-322(D)-5 (P3I0433-25) Soil Sampled: 09/10/03 09:35 Received: 09/11/03 09:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090690	09/17/03	09/18/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	80.9 %		50-150			"	"	"	"	
SB-323(D)-7 (P3I0433-26) Soil Sampled: 09/10/03 10:44 Received: 09/11/03 09:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090690	09/17/03	09/18/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	81.4 %		50-150			"	"	"	"	
SB-015(A)-7 (P3I0433-27) Soil Sampled: 09/10/03 12:09 Received: 09/11/03 09:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090690	09/17/03	09/18/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	72.6 %		50-150			"	"	"	"	
SB-324(D)-2 (P3I0433-28) Soil Sampled: 09/10/03 11:15 Received: 09/11/03 09:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090690	09/17/03	09/18/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	83.3 %		50-150			"	"	"	"	
SB-324(D)-5 (P3I0433-29) Soil Sampled: 09/10/03 11:20 Received: 09/11/03 09:00										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	3090690	09/17/03	09/18/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	89.6 %		50-150			"	"	"	"	
SB-324(D)-10 (P3I0433-30) Soil Sampled: 09/10/03 11:25 Received: 09/11/03 09:00										
Diesel Range Organics	4630	12.5	25.0	mg/kg dry	1	3090690	09/17/03	09/18/03	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	94.1 %		50-150			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 11/12/03 14:48

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-324(D)-15 (P3I0433-31) Soil Sampled: 09/10/03 11:30 Received: 09/11/03 09:00										
Diesel Range Organics	433	62.5	125	mg/kg dry	5	3090690	09/17/03	09/18/03	NWTPH-Dx	D
Heavy Oil Range Hydrocarbons	ND	125	250	"	"	"	"	"	"	D, U
Surrogate: 1-Chlorooctadecane	99.2 %		50-150			"	"	"	"	D

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 Project Manager: Tom Calabrese

Reported:
 11/12/03 14:48

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-632(N)-7.5 (P310433-18) Soil **Sampled: 09/08/03 16:41** **Received: 09/11/03 09:00**

Lead	27.7	0.0797	0.376	mg/kg dry	1	3090670	09/16/03	09/21/03	EPA 6020	D
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North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-328(D)-2 (P3I0433-01) Soil Sampled: 09/10/03 12:10 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090607	09/15/03	09/17/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	31.0	14.1	200	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	65.4 %		42.6-130			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	69.6 %		57.3-144			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	60.7 %		45.5-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	72.9 %		42.1-144			"	"	"	"	

SB-328(D)-5 (P3I0433-02) Soil Sampled: 09/10/03 12:15 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090607	09/15/03	09/17/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	49.3	9.40	50.0	"	"	"	"	"	"	J
Xylenes (total)	37.0	26.2	100	"	"	"	"	"	"	J
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	23.4	14.1	200	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	88.8	6.75	100	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	40.7	9.33	50.0	"	"	"	"	"	"	J
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	37.0	9.89	50.0	"	"	"	"	"	"	J
<i>Surrogate: 4-BFB</i>	63.6 %		42.6-130			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	62.8 %		57.3-144			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	57.9 %		45.5-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	67.6 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

North Creek Analytical, Inc.
Environmental Laboratory Network



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-320(D)-2 (P3I0433-03RE1) Soil Sampled: 09/10/03 10:40 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090911	09/22/03	09/22/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	20.4	14.1	200	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	33.4	6.75	100	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	83.5 %		42.6-130			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	86.6 %		57.3-144			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	80.1 %		45.5-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	85.9 %		42.1-144			"	"	"	"	

SB-320(D)-5 (P3I0433-04) Soil Sampled: 09/10/03 10:50 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090607	09/15/03	09/17/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	55.9 %		42.6-130			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	62.4 %		57.3-144			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	54.5 %		45.5-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	66.3 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
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Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-327(D)-2 (P3I0433-05) Soil Sampled: 09/10/03 13:40 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090607	09/15/03	09/17/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	32.9	14.1	200	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	<i>60.5 %</i>		<i>42.6-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 1,2-DCA-d4</i>	<i>62.8 %</i>		<i>57.3-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>56.5 %</i>		<i>45.5-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>	<i>68.0 %</i>		<i>42.1-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

SB-327(D)-5 (P3I0433-06) Soil Sampled: 09/10/03 13:45 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090607	09/15/03	09/17/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	<i>64.3 %</i>		<i>42.6-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 1,2-DCA-d4</i>	<i>65.6 %</i>		<i>57.3-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>58.1 %</i>		<i>45.5-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>	<i>71.0 %</i>		<i>42.1-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-327(D)-10 (P3I0433-07RE1) Soil Sampled: 09/10/03 13:50 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	23.2	100	ug/kg dry	2	3090911	09/22/03	09/22/03	EPA 8260B	D, U
1,2-Dichloroethane	ND	22.4	100	"	"	"	"	"	"	D, U
Benzene	ND	8.88	100	"	"	"	"	"	"	D, U
Toluene	ND	12.6	100	"	"	"	"	"	"	D, U
Ethylbenzene	158	18.8	100	"	"	"	"	"	"	D
Xylenes (total)	652	52.4	200	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	23.8	400	"	"	"	"	"	"	D, U
Naphthalene	2850	28.2	400	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	8150	13.5	200	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	1190	18.7	100	"	"	"	"	"	"	D
Isopropylbenzene	655	19.1	400	"	"	"	"	"	"	D
n-Propylbenzene	1220	19.8	100	"	"	"	"	"	"	D
Surrogate: 4-BFB	97.3 %		42.6-130			"	"	"	"	D
Surrogate: 1,2-DCA-d4	96.9 %		57.3-144			"	"	"	"	D
Surrogate: Dibromofluoromethane	93.7 %		45.5-130			"	"	"	"	D
Surrogate: Toluene-d8	97.6 %		42.1-144			"	"	"	"	D

SB-327(D)-15 (P3I0433-08) Soil Sampled: 09/10/03 13:55 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	58.0	250	ug/kg dry	5	3090607	09/15/03	09/20/03	EPA 8260B	D, U
1,2-Dichloroethane	ND	56.0	250	"	"	"	"	"	"	D, U
Benzene	ND	22.2	250	"	"	"	"	"	"	D, U
Toluene	93.2	31.4	250	"	"	"	"	"	"	J, D
Ethylbenzene	10100	47.0	250	"	"	"	"	"	"	D
Xylenes (total)	7420	131	500	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	59.5	1000	"	"	"	"	"	"	D, U
Naphthalene	4190	70.5	1000	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	40800	33.8	500	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	5590	46.6	250	"	"	"	"	"	"	D
Isopropylbenzene	1810	47.8	1000	"	"	"	"	"	"	D
n-Propylbenzene	7490	49.4	250	"	"	"	"	"	"	D
Surrogate: 4-BFB	74.7 %		42.6-130			"	"	"	"	D
Surrogate: 1,2-DCA-d4	69.1 %		57.3-144			"	"	"	"	D
Surrogate: Dibromofluoromethane	57.9 %		45.5-130			"	"	"	"	D
Surrogate: Toluene-d8	84.5 %		42.1-144			"	"	"	"	D

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-328(D)-10 (P3I0433-09) Soil Sampled: 09/10/03 12:20 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	116	500	ug/kg dry	10	3090607	09/15/03	09/20/03	EPA 8260B	D, U
1,2-Dichloroethane	ND	112	500	"	"	"	"	"	"	D, U
Benzene	472	44.4	500	"	"	"	"	"	"	J, D
Toluene	211	62.9	500	"	"	"	"	"	"	J, D
Ethylbenzene	695	94.0	500	"	"	"	"	"	"	D
Xylenes (total)	385	262	1000	"	"	"	"	"	"	J, D
Methyl tert-butyl ether	ND	119	2000	"	"	"	"	"	"	D, U
Naphthalene	9580	141	2000	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	77000	67.5	1000	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	13100	93.3	500	"	"	"	"	"	"	D
Isopropylbenzene	3180	95.5	2000	"	"	"	"	"	"	D
n-Propylbenzene	12400	98.9	500	"	"	"	"	"	"	D
Surrogate: 4-BFB	72.2 %		42.6-130			"	"	"	"	D
Surrogate: 1,2-DCA-d4	59.7 %		57.3-144			"	"	"	"	D
Surrogate: Dibromofluoromethane	52.4 %		45.5-130			"	"	"	"	D
Surrogate: Toluene-d8	73.0 %		42.1-144			"	"	"	"	D

SB-328(D)-15 (P3I0433-10RE1) Soil Sampled: 09/10/03 12:25 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090911	09/22/03	09/22/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	41.4	4.44	50.0	"	"	"	"	"	"	J
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	51.5	9.40	50.0	"	"	"	"	"	"	R-09
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	110	14.1	200	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	313	6.75	100	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	109	9.33	50.0	"	"	"	"	"	"	
Isopropylbenzene	36.4	9.55	200	"	"	"	"	"	"	J
n-Propylbenzene	153	9.89	50.0	"	"	"	"	"	"	
Surrogate: 4-BFB	95.6 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	92.0 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	91.6 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	99.2 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-324(D)-DUP (P3I0433-11) Soil Sampled: 09/10/03 11:40 Received: 09/11/03 09:00										
1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090607	09/15/03	09/17/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	156	4.44	50.0	"	"	"	"	"	"	
Toluene	45.7	6.29	50.0	"	"	"	"	"	"	J
Ethylbenzene	972	9.40	50.0	"	"	"	"	"	"	
Xylenes (total)	1390	26.2	100	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	2590	14.1	200	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	7290	6.75	100	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	860	9.33	50.0	"	"	"	"	"	"	
Isopropylbenzene	485	9.55	200	"	"	"	"	"	"	
n-Propylbenzene	1430	9.89	50.0	"	"	"	"	"	"	
Surrogate: 4-BFB	65.6 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	65.6 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	58.5 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	71.4 %		42.1-144			"	"	"	"	

SB-325(D)-2 (P3I0433-12) Soil Sampled: 09/10/03 14:30 Received: 09/11/03 09:00										
1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090607	09/15/03	09/19/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	63.3 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	58.5 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	57.7 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	72.2 %		42.1-144			"	"	"	"	

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-325(D)-5 (P3I0433-13RE1) Soil Sampled: 09/10/03 14:35 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090911	09/22/03	09/22/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	98.8 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	98.4 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	93.4 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	104 %		42.1-144			"	"	"	"	

SB-325(D)-10 (P3I0433-14RE1) Soil Sampled: 09/10/03 14:40 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090911	09/22/03	09/22/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	14.1	14.1	200	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	97.5 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	97.0 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	91.5 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	101 %		42.1-144			"	"	"	"	

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-325(D)-15 (P3I0433-15RE1) Soil Sampled: 09/10/03 14:45 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090911	09/22/03	09/22/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	95.6 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	90.4 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	90.4 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	98.0 %		42.1-144			"	"	"	"	

SB-325(D)-DUP (P3I0433-16) Soil Sampled: 09/10/03 15:00 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090610	09/15/03	09/19/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	61.8 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	57.3 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	55.7 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	70.7 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

North Creek Analytical, Inc.
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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-017(A)-7.5 (P3I0433-17) Soil Sampled: 09/08/03 11:30 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090610	09/15/03	09/19/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	50.3	6.75	100	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	<i>63.3 %</i>		<i>42.6-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 1,2-DCA-d4</i>	<i>59.8 %</i>		<i>57.3-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>55.5 %</i>		<i>45.5-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>	<i>71.6 %</i>		<i>42.1-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

SB-632(N)-7.5 (P3I0433-18RE1) Soil Sampled: 09/08/03 16:41 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	116	500	ug/kg dry	10	3090911	09/22/03	09/22/03	EPA 8260B	D, U
1,2-Dichloroethane	ND	112	500	"	"	"	"	"	"	D, U
Benzene	ND	44.4	500	"	"	"	"	"	"	D, U
Toluene	ND	62.9	500	"	"	"	"	"	"	D, U
Ethylbenzene	12400	94.0	500	"	"	"	"	"	"	D
Xylenes (total)	63800	262	1000	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	119	2000	"	"	"	"	"	"	D, U
Naphthalene	38900	141	2000	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	152000	67.5	1000	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	36800	93.3	500	"	"	"	"	"	"	D
Isopropylbenzene	4180	95.5	2000	"	"	"	"	"	"	D
n-Propylbenzene	16600	98.9	500	"	"	"	"	"	"	D
<i>Surrogate: 4-BFB</i>	<i>117 %</i>		<i>42.6-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>D</i>
<i>Surrogate: 1,2-DCA-d4</i>	<i>96.7 %</i>		<i>57.3-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>D</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>91.2 %</i>		<i>45.5-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>D</i>
<i>Surrogate: Toluene-d8</i>	<i>96.0 %</i>		<i>42.1-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>D</i>

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-321(D)-2 (P3I0433-19) Soil Sampled: 09/09/03 10:34 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090610	09/15/03	09/20/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	45.6	4.44	50.0	"	"	"	"	"	"	J
Toluene	93.3	6.29	50.0	"	"	"	"	"	"	
Ethylbenzene	1900	9.40	50.0	"	"	"	"	"	"	
Xylenes (total)	4150	26.2	100	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	10300	6.75	100	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	187	9.33	50.0	"	"	"	"	"	"	
Isopropylbenzene	313	9.55	200	"	"	"	"	"	"	
n-Propylbenzene	1140	9.89	50.0	"	"	"	"	"	"	
<i>Surrogate: 4-BFB</i>	65.6 %		42.6-130			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	65.6 %		57.3-144			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	61.8 %		45.5-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	80.2 %		42.1-144			"	"	"	"	

SB-321(D)-5 (P3I0433-20RE1) Soil Sampled: 09/09/03 10:41 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	58.0	250	ug/kg dry	5	3090911	09/22/03	09/22/03	EPA 8260B	D, U
1,2-Dichloroethane	ND	56.0	250	"	"	"	"	"	"	D, U
Benzene	563	22.2	250	"	"	"	"	"	"	D
Toluene	1450	31.4	250	"	"	"	"	"	"	D
Ethylbenzene	3520	47.0	250	"	"	"	"	"	"	D
Xylenes (total)	31600	131	500	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	59.5	1000	"	"	"	"	"	"	D, U
Naphthalene	285	70.5	1000	"	"	"	"	"	"	J, D
1,2,4-Trimethylbenzene	39500	33.8	500	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	22200	46.6	250	"	"	"	"	"	"	D
Isopropylbenzene	3760	47.8	1000	"	"	"	"	"	"	D
n-Propylbenzene	14100	49.4	250	"	"	"	"	"	"	D
<i>Surrogate: 4-BFB</i>	92.6 %		42.6-130			"	"	"	"	D
<i>Surrogate: 1,2-DCA-d4</i>	90.5 %		57.3-144			"	"	"	"	D
<i>Surrogate: Dibromofluoromethane</i>	92.6 %		45.5-130			"	"	"	"	D
<i>Surrogate: Toluene-d8</i>	95.9 %		42.1-144			"	"	"	"	D

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-326(D)-2 (P3I0433-21RE1) Soil Sampled: 09/09/03 16:30 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090911	09/22/03	09/22/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	68.9	4.44	50.0	"	"	"	"	"	"	
Toluene	74.4	6.29	50.0	"	"	"	"	"	"	
Ethylbenzene	23.4	9.40	50.0	"	"	"	"	"	"	J
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	34.4	14.1	200	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	123	6.75	100	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	53.7	9.33	50.0	"	"	"	"	"	"	R-09
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	28.9	9.89	50.0	"	"	"	"	"	"	J
Surrogate: 4-BFB	93.8 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	96.4 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	92.0 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	101 %		42.1-144			"	"	"	"	

SB-326(D)-5 (P3I0433-22RE1) Soil Sampled: 09/09/03 16:36 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	58.0	250	ug/kg dry	5	3090911	09/22/03	09/22/03	EPA 8260B	D, U
1,2-Dichloroethane	ND	56.0	250	"	"	"	"	"	"	D, U
Benzene	599	22.2	250	"	"	"	"	"	"	D
Toluene	ND	31.4	250	"	"	"	"	"	"	D, U
Ethylbenzene	7910	47.0	250	"	"	"	"	"	"	D
Xylenes (total)	19400	131	500	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	59.5	1000	"	"	"	"	"	"	D, U
Naphthalene	1240	70.5	1000	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	22500	33.8	500	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	8020	46.6	250	"	"	"	"	"	"	D
Isopropylbenzene	1060	47.8	1000	"	"	"	"	"	"	D
n-Propylbenzene	4210	49.4	250	"	"	"	"	"	"	D
Surrogate: 4-BFB	87.0 %		42.6-130			"	"	"	"	D
Surrogate: 1,2-DCA-d4	88.6 %		57.3-144			"	"	"	"	D
Surrogate: Dibromofluoromethane	81.0 %		45.5-130			"	"	"	"	D
Surrogate: Toluene-d8	92.4 %		42.1-144			"	"	"	"	D

North Creek Analytical - Portland

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Environmental Laboratory Network



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-326(D)-10 (P3I0433-23RE1) Soil Sampled: 09/09/03 16:42 Received: 09/11/03 09:00										
1,2-Dibromoethane	ND	58.0	250	ug/kg dry	5	3090911	09/22/03	09/22/03	EPA 8260B	D, U
1,2-Dichloroethane	ND	56.0	250	"	"	"	"	"	"	D, U
Benzene	639	22.2	250	"	"	"	"	"	"	D
Toluene	75.2	31.4	250	"	"	"	"	"	"	J, D
Ethylbenzene	9620	47.0	250	"	"	"	"	"	"	D
Xylenes (total)	23300	131	500	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	59.5	1000	"	"	"	"	"	"	D, U
Naphthalene	1320	70.5	1000	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	26600	33.8	500	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	9670	46.6	250	"	"	"	"	"	"	D
Isopropylbenzene	1280	47.8	1000	"	"	"	"	"	"	D
n-Propylbenzene	5190	49.4	250	"	"	"	"	"	"	D
<i>Surrogate: 4-BFB</i>	<i>94.0 %</i>		<i>42.6-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>D</i>
<i>Surrogate: 1,2-DCA-d4</i>	<i>88.4 %</i>		<i>57.3-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>D</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>85.4 %</i>		<i>45.5-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>D</i>
<i>Surrogate: Toluene-d8</i>	<i>91.0 %</i>		<i>42.1-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>D</i>
SB-322(D)-2 (P3I0433-24) Soil Sampled: 09/10/03 09:25 Received: 09/11/03 09:00										
1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090610	09/15/03	09/21/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	<i>65.6 %</i>		<i>42.6-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 1,2-DCA-d4</i>	<i>63.3 %</i>		<i>57.3-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>56.4 %</i>		<i>45.5-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>	<i>77.5 %</i>		<i>42.1-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-322(D)-5 (P3I0433-25RE1) Soil Sampled: 09/10/03 09:35 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090911	09/22/03	09/22/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	27.3	14.1	200	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	93.8 %		42.6-130			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	90.4 %		57.3-144			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	86.2 %		45.5-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	95.4 %		42.1-144			"	"	"	"	

SB-323(D)-7 (P3I0433-26RE1) Soil Sampled: 09/10/03 10:44 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090911	09/22/03	09/22/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	83.9 %		42.6-130			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	83.9 %		57.3-144			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	80.7 %		45.5-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	88.7 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

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Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-015(A)-7 (P3I0433-27RE1) Soil Sampled: 09/10/03 12:09 Received: 09/11/03 09:00										
1,2-Dibromoethane	ND	58.0	250	ug/kg dry	5	3090911	09/22/03	09/22/03	EPA 8260B	D, U
1,2-Dichloroethane	ND	56.0	250	"	"	"	"	"	"	D, U
Benzene	116	22.2	250	"	"	"	"	"	"	J, D
Toluene	7400	31.4	250	"	"	"	"	"	"	D
Ethylbenzene	11700	47.0	250	"	"	"	"	"	"	D
Xylenes (total)	64600	131	500	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	59.5	1000	"	"	"	"	"	"	D, U
Naphthalene	15700	70.5	1000	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	44100	33.8	500	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	11600	46.6	250	"	"	"	"	"	"	D
Isopropylbenzene	1410	47.8	1000	"	"	"	"	"	"	D
n-Propylbenzene	5610	49.4	250	"	"	"	"	"	"	D
Surrogate: 4-BFB	97.1 %		42.6-130			"	"	"	"	D
Surrogate: 1,2-DCA-d4	83.7 %		57.3-144			"	"	"	"	D
Surrogate: Dibromofluoromethane	79.2 %		45.5-130			"	"	"	"	D
Surrogate: Toluene-d8	86.9 %		42.1-144			"	"	"	"	D
SB-324(D)-2 (P3I0433-28RE1) Soil Sampled: 09/10/03 11:15 Received: 09/11/03 09:00										
1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090911	09/22/03	09/22/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	218	14.1	200	"	"	"	"	"	"	R-09
1,2,4-Trimethylbenzene	52.6	6.75	100	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	116 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	114 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	111 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	125 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-324(D)-5 (P3I0433-29RE1) Soil Sampled: 09/10/03 11:20 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090911	09/22/03	09/22/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	50.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	29.9	14.1	200	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	18.7	6.75	100	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	98.0 %		42.6-130			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	96.0 %		57.3-144			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	93.2 %		45.5-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	102 %		42.1-144			"	"	"	"	

SB-324(D)-10 (P3I0433-30RE1) Soil Sampled: 09/10/03 11:25 Received: 09/11/03 09:00

1,2-Dibromoethane	ND	23.2	100	ug/kg dry	2	3090911	09/22/03	09/23/03	EPA 8260B	D, U
1,2-Dichloroethane	ND	22.4	100	"	"	"	"	"	"	D, U
Benzene	141	8.88	100	"	"	"	"	"	"	D
Toluene	ND	12.6	100	"	"	"	"	"	"	D, U
Ethylbenzene	381	18.8	100	"	"	"	"	"	"	D
Xylenes (total)	1320	52.4	200	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	23.8	400	"	"	"	"	"	"	D, U
Naphthalene	791	28.2	400	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	18200	13.5	200	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	410	18.7	100	"	"	"	"	"	"	D
Isopropylbenzene	1380	19.1	400	"	"	"	"	"	"	D
n-Propylbenzene	3430	19.8	100	"	"	"	"	"	"	D
<i>Surrogate: 4-BFB</i>	95.4 %		42.6-130			"	"	"	"	D
<i>Surrogate: 1,2-DCA-d4</i>	100 %		57.3-144			"	"	"	"	D
<i>Surrogate: Dibromofluoromethane</i>	90.4 %		45.5-130			"	"	"	"	D
<i>Surrogate: Toluene-d8</i>	96.6 %		42.1-144			"	"	"	"	D

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-324(D)-15 (P3I0433-31RE1) Soil Sampled: 09/10/03 11:30 Received: 09/11/03 09:00										
1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	3090911	09/22/03	09/23/03	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	32.8	4.44	50.0	"	"	"	"	"	"	J
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	298	9.40	50.0	"	"	"	"	"	"	
Xylenes (total)	179	26.2	100	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	413	14.1	200	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	824	6.75	100	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	146	9.33	50.0	"	"	"	"	"	"	
Isopropylbenzene	64.4	9.55	200	"	"	"	"	"	"	J
n-Propylbenzene	191	9.89	50.0	"	"	"	"	"	"	
Surrogate: 4-BFB	101 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	96.4 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	91.7 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	105 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-017(A)-7.5 (P3I0433-17) Soil Sampled: 09/08/03 11:30 Received: 09/11/03 09:00										
Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090585	09/15/03	09/17/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Naphthalene	6.59	3.30	13.4	"	"	"	"	"	"	J
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	87.5 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	106 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	95.8 %		40-150			"	"	"	"	

SB-632(N)-7.5 (P3I0433-18) Soil Sampled: 09/08/03 16:41 Received: 09/11/03 09:00										R-05
Acenaphthene	ND	33.0	134	ug/kg dry	10	3090585	09/15/03	09/18/03	EPA 8270m	D, U
Acenaphthylene	ND	33.0	134	"	"	"	"	"	"	D, U
Anthracene	ND	33.0	134	"	"	"	"	"	"	D, U
Benzo (a) anthracene	ND	33.0	134	"	"	"	"	"	"	D, U
Benzo (a) pyrene	ND	33.0	134	"	"	"	"	"	"	D, U
Benzo (b) fluoranthene	ND	33.0	134	"	"	"	"	"	"	D, U
Benzo (ghi) perylene	ND	33.0	134	"	"	"	"	"	"	D, U
Benzo (k) fluoranthene	ND	33.0	134	"	"	"	"	"	"	D, U
Chrysene	ND	33.0	134	"	"	"	"	"	"	D, U
Dibenzo (a,h) anthracene	ND	33.0	134	"	"	"	"	"	"	D, U
Fluoranthene	ND	33.0	134	"	"	"	"	"	"	D, U
Fluorene	58.9	33.0	134	"	"	"	"	"	"	J, D
Indeno (1,2,3-cd) pyrene	ND	33.0	134	"	"	"	"	"	"	D, U

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Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-632(N)-7.5 (P3I0433-18) Soil Sampled: 09/08/03 16:41 Received: 09/11/03 09:00 R-05										
Naphthalene	36600	660	2680	ug/kg dry	200	3090585	09/15/03	09/18/03	EPA 8270m	D
Phenanthrene	71.4	33.0	134	"	10	"	"	09/18/03	"	J, D
Pyrene	ND	33.0	134	"	"	"	"	"	"	D, U
Surrogate: Fluorene-d10	83.8 %		40-150			"	"	"	"	D
Surrogate: Pyrene-d10	104 %		40-150			"	"	"	"	D
Surrogate: Benzo (a) pyrene-d12	93.8 %		40-150			"	"	"	"	D
SB-323(D)-7 (P3I0433-26) Soil Sampled: 09/10/03 10:44 Received: 09/11/03 09:00										
Acenaphthene	ND	3.30	13.4	ug/kg dry	1	3090585	09/15/03	09/18/03	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	72.9 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	83.9 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	77.7 %		40-150			"	"	"	"	

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Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-015(A)-7 (P3I0433-27) Soil Sampled: 09/10/03 12:09 Received: 09/11/03 09:00 R-05										
Acenaphthene	ND	33.0	134	ug/kg dry	10	3090585	09/15/03	09/18/03	EPA 8270m	D, U
Acenaphthylene	ND	33.0	134	"	"	"	"	"	"	D, U
Anthracene	ND	33.0	134	"	"	"	"	"	"	D, U
Benzo (a) anthracene	ND	33.0	134	"	"	"	"	"	"	D, U
Benzo (a) pyrene	ND	33.0	134	"	"	"	"	"	"	D, U
Benzo (b) fluoranthene	ND	33.0	134	"	"	"	"	"	"	D, U
Benzo (ghi) perylene	ND	33.0	134	"	"	"	"	"	"	D, U
Benzo (k) fluoranthene	ND	33.0	134	"	"	"	"	"	"	D, U
Chrysene	ND	33.0	134	"	"	"	"	"	"	D, U
Dibenzo (a,h) anthracene	ND	33.0	134	"	"	"	"	"	"	D, U
Fluoranthene	ND	33.0	134	"	"	"	"	"	"	D, U
Fluorene	ND	33.0	134	"	"	"	"	"	"	D, U
Indeno (1,2,3-cd) pyrene	ND	33.0	134	"	"	"	"	"	"	D, U
Naphthalene	7060	330	1340	"	100	"	"	09/18/03	"	D
Phenanthrene	ND	33.0	134	"	10	"	"	09/18/03	"	D, U
Pyrene	ND	33.0	134	"	"	"	"	"	"	D, U
Surrogate: Fluorene-d10	83.9 %		40-150			"	"	"	"	D
Surrogate: Pyrene-d10	105 %		40-150			"	"	"	"	D
Surrogate: Benzo (a) pyrene-d12	95.4 %		40-150			"	"	"	"	D

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 11/12/03 14:48

**Percent Dry Weight (Solids) per Standard Methods
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-328(D)-2 (P3I0433-01) Soil	Sampled: 09/10/03 12:10 Received: 09/11/03 09:00									
% Solids	93.6	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-328(D)-5 (P3I0433-02) Soil	Sampled: 09/10/03 12:15 Received: 09/11/03 09:00									
% Solids	81.1	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-320(D)-2 (P3I0433-03) Soil	Sampled: 09/10/03 10:40 Received: 09/11/03 09:00									
% Solids	68.8	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-320(D)-5 (P3I0433-04) Soil	Sampled: 09/10/03 10:50 Received: 09/11/03 09:00									
% Solids	71.7	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-327(D)-2 (P3I0433-05) Soil	Sampled: 09/10/03 13:40 Received: 09/11/03 09:00									
% Solids	78.9	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-327(D)-5 (P3I0433-06) Soil	Sampled: 09/10/03 13:45 Received: 09/11/03 09:00									
% Solids	82.8	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-327(D)-10 (P3I0433-07) Soil	Sampled: 09/10/03 13:50 Received: 09/11/03 09:00									
% Solids	78.5	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-327(D)-15 (P3I0433-08) Soil	Sampled: 09/10/03 13:55 Received: 09/11/03 09:00									
% Solids	85.8	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-328(D)-10 (P3I0433-09) Soil	Sampled: 09/10/03 12:20 Received: 09/11/03 09:00									
% Solids	80.6	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
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Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Percent Dry Weight (Solids) per Standard Methods
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-328(D)-15 (P3I0433-10) Soil Sampled: 09/10/03 12:25 Received: 09/11/03 09:00										
% Solids	79.6	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-324(D)-DUP (P3I0433-11) Soil Sampled: 09/10/03 11:40 Received: 09/11/03 09:00										
% Solids	83.2	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-325(D)-2 (P3I0433-12) Soil Sampled: 09/10/03 14:30 Received: 09/11/03 09:00										
% Solids	80.6	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-325(D)-5 (P3I0433-13) Soil Sampled: 09/10/03 14:35 Received: 09/11/03 09:00										
% Solids	77.7	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-325(D)-10 (P3I0433-14) Soil Sampled: 09/10/03 14:40 Received: 09/11/03 09:00										
% Solids	84.9	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-325(D)-15 (P3I0433-15) Soil Sampled: 09/10/03 14:45 Received: 09/11/03 09:00										
% Solids	79.9	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-325(D)-DUP (P3I0433-16) Soil Sampled: 09/10/03 15:00 Received: 09/11/03 09:00										
% Solids	81.4	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-017(A)-7.5 (P3I0433-17) Soil Sampled: 09/08/03 11:30 Received: 09/11/03 09:00										
% Solids	87.5	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-632(N)-7.5 (P3I0433-18) Soil Sampled: 09/08/03 16:41 Received: 09/11/03 09:00										
% Solids	73.4	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	

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EnviroLogic Resources, Inc.
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Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Percent Dry Weight (Solids) per Standard Methods
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-321(D)-2 (P3I0433-19) Soil	Sampled: 09/09/03 10:34 Received: 09/11/03 09:00									
% Solids	94.3	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-321(D)-5 (P3I0433-20) Soil	Sampled: 09/09/03 10:41 Received: 09/11/03 09:00									
% Solids	82.5	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-326(D)-2 (P3I0433-21) Soil	Sampled: 09/09/03 16:30 Received: 09/11/03 09:00									
% Solids	72.6	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-326(D)-5 (P3I0433-22) Soil	Sampled: 09/09/03 16:36 Received: 09/11/03 09:00									
% Solids	63.4	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-326(D)-10 (P3I0433-23) Soil	Sampled: 09/09/03 16:42 Received: 09/11/03 09:00									
% Solids	66.5	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-322(D)-2 (P3I0433-24) Soil	Sampled: 09/10/03 09:25 Received: 09/11/03 09:00									
% Solids	91.6	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-322(D)-5 (P3I0433-25) Soil	Sampled: 09/10/03 09:35 Received: 09/11/03 09:00									
% Solids	77.0	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-323(D)-7 (P3I0433-26) Soil	Sampled: 09/10/03 10:44 Received: 09/11/03 09:00									
% Solids	73.0	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-015(A)-7 (P3I0433-27) Soil	Sampled: 09/10/03 12:09 Received: 09/11/03 09:00									
% Solids	81.8	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
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Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Percent Dry Weight (Solids) per Standard Methods
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-324(D)-2 (P3I0433-28) Soil Sampled: 09/10/03 11:15 Received: 09/11/03 09:00										
% Solids	77.9	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-324(D)-5 (P3I0433-29) Soil Sampled: 09/10/03 11:20 Received: 09/11/03 09:00										
% Solids	80.2	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-324(D)-10 (P3I0433-30) Soil Sampled: 09/10/03 11:25 Received: 09/11/03 09:00										
% Solids	76.6	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	
SB-324(D)-15 (P3I0433-31) Soil Sampled: 09/10/03 11:30 Received: 09/11/03 09:00										
% Solids	79.2	1.00	1.00% by Weigh		1	3090665	09/16/03	09/17/03	NCA SOP	

North Creek Analytical - Portland

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Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Gasoline Hydrocarbons per NW TPH-Gx Method - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090545: Prepared 09/12/03 Using EPA 5035

Blank (3090545-BLK1)

Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg							U
Surrogate: a,a,a-TFT	3.16			"	2.50		126	50-150			

LCS (3090545-BS1)

Gasoline Range Hydrocarbons	79.9	2.50	4.00	mg/kg	62.5		128	70-130			
Surrogate: a,a,a-TFT	3.07			"	2.50		123	50-150			

Duplicate (3090545-DUP1)

Source: P3I0405-01

Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry		ND			40		U
Surrogate: a,a,a-TFT	0.0132			"	2.99		0.441	50-150			A-01a

Duplicate (3090545-DUP2)

Source: P3I0433-01

Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg dry		ND			40		U
Surrogate: a,a,a-TFT	2.80			"	2.67		105	50-150			

Batch 3090546: Prepared 09/12/03 Using EPA 5035

Blank (3090546-BLK1)

Gasoline Range Hydrocarbons	ND	2.50	4.00	mg/kg							U
Surrogate: a,a,a-TFT	2.67			"	2.50		107	50-150			

LCS (3090546-BS1)

Gasoline Range Hydrocarbons	69.0	2.50	4.00	mg/kg	62.5		110	70-130			
Surrogate: a,a,a-TFT	3.28			"	2.50		131	50-150			

Duplicate (3090546-DUP1)

Source: P3I0433-16

Gasoline Range Hydrocarbons	3.43	2.50	4.00	mg/kg dry		3.17			7.88	40	J
Surrogate: a,a,a-TFT	3.42			"	3.07		111	50-150			

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
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Project: Astoria Area-Wide Petroleum Site
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 Project Manager: Tom Calabrese

Reported:
 11/12/03 14:48

Gasoline Hydrocarbons per NW TPH-Gx Method - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090546: Prepared 09/12/03 Using EPA 5035

Duplicate (3090546-DUP2)

Source: P3I0433-20

Gasoline Range Hydrocarbons	1490	50.0	80.0 mg/kg dry			1530			2.65	40	D
Surrogate: a,a,a-TFT	11.6			"	3.03		NR	50-150			S-09, D

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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North Creek Analytical, Inc.
 Environmental Laboratory Network



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Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090657: Prepared 09/16/03 Using EPA 3550 Fuels

Blank (3090657-BLK1)

Diesel Range Organics	ND	12.5	25.0	mg/kg							U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"							U
Surrogate: 1-Chlorooctadecane	4.55			"	4.80		94.8	50-150			

LCS (3090657-BS1)

Diesel Range Organics	110	12.5	25.0	mg/kg	125		88.0	50-150			
Heavy Oil Range Hydrocarbons	74.1	25.0	50.0	"	75.0		98.8	50-150			
Surrogate: 1-Chlorooctadecane	4.62			"	4.80		96.2	50-150			

Duplicate (3090657-DUP1)

Source: P3I0433-01

Diesel Range Organics	ND	12.5	25.0	mg/kg dry		ND				50	U
Heavy Oil Range Hydrocarbons	54.3	25.0	50.0	"		48.1			12.1	50	
Surrogate: 1-Chlorooctadecane	4.98			"	5.13		97.1	50-150			

Duplicate (3090657-DUP2)

Source: P3I0433-02

Diesel Range Organics	18.6	12.5	25.0	mg/kg dry		21.3			13.5	50	J
Heavy Oil Range Hydrocarbons	69.4	25.0	50.0	"		104			39.9	50	
Surrogate: 1-Chlorooctadecane	5.08			"	5.92		85.8	50-150			

Batch 3090690: Prepared 09/17/03 Using EPA 3550 Fuels

Blank (3090690-BLK1)

Diesel Range Organics	ND	12.5	25.0	mg/kg							U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"							U
Surrogate: 1-Chlorooctadecane	4.55			"	4.80		94.8	50-150			

LCS (3090690-BS1)

Diesel Range Organics	107	12.5	25.0	mg/kg	125		85.6	50-150			
Heavy Oil Range Hydrocarbons	68.0	25.0	50.0	"	75.0		90.7	50-150			
Surrogate: 1-Chlorooctadecane	4.82			"	4.80		100	50-150			

North Creek Analytical - Portland

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Project: Astoria Area-Wide Petroleum Site
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 Project Manager: Tom Calabrese

Reported:
 11/12/03 14:48

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090690: Prepared 09/17/03 Using EPA 3550 Fuels

Duplicate (3090690-DUP1)

Source: P3I0433-12

Diesel Range Organics	ND	12.5	25.0 mg/kg dry			ND				50	U
Heavy Oil Range Hydrocarbons	36.8	25.0	50.0	"		ND				50	J
<i>Surrogate: 1-Chlorooctadecane</i>	5.21			"	5.95		87.6	50-150			

Duplicate (3090690-DUP2)

Source: P3I0433-13

Diesel Range Organics	ND	12.5	25.0 mg/kg dry			ND				50	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"		ND				50	U
<i>Surrogate: 1-Chlorooctadecane</i>	5.89			"	6.18		95.3	50-150			

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 11/12/03 14:48

Total Metals per EPA 6000/7000 Series Methods - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3090670: Prepared 09/16/03 Using EPA 3050											
Blank (3090670-BLK2)											
Lead	0.335	0.106	0.500	mg/kg							J
LCS (3090670-BS2)											
Lead	11.6	0.106	0.500	mg/kg	10.0		116	80-120			
Duplicate (3090670-DUP1) Source: P3I0375-01											
Lead	30.0	0.106	0.500	mg/kg dry		17.8			51.0	40	Q-14
Matrix Spike (3090670-MS1) Source: P3I0375-01											
Lead	15.2	0.453	2.14	mg/kg dry	9.44	17.8	-27.5	75-125			Q-14, D

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090607: Prepared 09/15/03 Using EPA 5035

Blank (3090607-BLK1)

1,2-Dibromoethane	ND	11.6	50.0	ug/kg							U
1,2-Dichloroethane	ND	11.2	50.0	"							U
Benzene	ND	4.44	50.0	"							U
Toluene	ND	6.29	50.0	"							U
Ethylbenzene	ND	9.40	50.0	"							U
Xylenes (total)	ND	26.2	100	"							U
Methyl tert-butyl ether	ND	11.9	200	"							U
Naphthalene	23.0	14.1	200	"							J
1,2,4-Trimethylbenzene	ND	6.75	100	"							U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"							U
Isopropylbenzene	ND	9.55	200	"							U
n-Propylbenzene	ND	9.89	50.0	"							U
Surrogate: 4-BFB	1360			"	2000		68.0	42.6-130			
Surrogate: 1,2-DCA-d4	1440			"	2000		72.0	57.3-144			
Surrogate: Dibromofluoromethane	1270			"	2000		63.5	45.5-130			
Surrogate: Toluene-d8	1550			"	2000		77.5	42.1-144			

LCS (3090607-BS1)

Benzene	2540	4.44	50.0	ug/kg	2500		102	81.9-125			
Toluene	2520	6.29	50.0	"	2500		101	80-125			
Surrogate: 4-BFB	1440			"	2000		72.0	42.6-130			
Surrogate: 1,2-DCA-d4	1480			"	2000		74.0	57.3-144			
Surrogate: Dibromofluoromethane	1320			"	2000		66.0	45.5-130			
Surrogate: Toluene-d8	1580			"	2000		79.0	42.1-144			

Matrix Spike (3090607-MS1)

Source: P3I0433-01

Benzene	2590	4.44	50.0	ug/kg dry	2670	ND	97.0	68.5-125			
Toluene	2590	6.29	50.0	"	2670	ND	97.0	70.3-125			
Surrogate: 4-BFB	1480			"	2140		69.2	42.6-130			
Surrogate: 1,2-DCA-d4	1460			"	2140		68.2	57.3-144			
Surrogate: Dibromofluoromethane	1330			"	2140		62.1	45.5-130			
Surrogate: Toluene-d8	1570			"	2140		73.4	42.1-144			

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090607: Prepared 09/15/03 Using EPA 5035

Matrix Spike Dup (3090607-MSD1)

Source: P3I0433-01

Benzene	2670	4.44	50.0	ug/kg dry	2670	ND	100	68.5-125	3.04	25	
Toluene	2640	6.29	50.0	"	2670	ND	98.9	70.3-125	1.91	25	
<i>Surrogate: 4-BFB</i>	<i>1470</i>			"	<i>2140</i>		<i>68.7</i>	<i>42.6-130</i>			
<i>Surrogate: 1,2-DCA-d4</i>	<i>1520</i>			"	<i>2140</i>		<i>71.0</i>	<i>57.3-144</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>1330</i>			"	<i>2140</i>		<i>62.1</i>	<i>45.5-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>1610</i>			"	<i>2140</i>		<i>75.2</i>	<i>42.1-144</i>			

Batch 3090610: Prepared 09/15/03 Using EPA 5035

Blank (3090610-BLK1)

1,2-Dibromoethane	ND	11.6	50.0	ug/kg							U
1,2-Dichloroethane	ND	11.2	50.0	"							U
Benzene	30.0	4.44	50.0	"							J
Toluene	28.0	6.29	50.0	"							J
Ethylbenzene	ND	9.40	50.0	"							U
Xylenes (total)	ND	26.2	100	"							U
Methyl tert-butyl ether	ND	11.9	200	"							U
Naphthalene	ND	14.1	200	"							U
1,2,4-Trimethylbenzene	ND	6.75	100	"							U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"							U
Isopropylbenzene	ND	9.55	200	"							U
n-Propylbenzene	ND	9.89	50.0	"							U
<i>Surrogate: 4-BFB</i>	<i>1340</i>			"	<i>2000</i>		<i>67.0</i>	<i>42.6-130</i>			
<i>Surrogate: 1,2-DCA-d4</i>	<i>1330</i>			"	<i>2000</i>		<i>66.5</i>	<i>57.3-144</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>1270</i>			"	<i>2000</i>		<i>63.5</i>	<i>45.5-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>1600</i>			"	<i>2000</i>		<i>80.0</i>	<i>42.1-144</i>			

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Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090610: Prepared 09/15/03 Using EPA 5035

LCS (3090610-BS1)

Benzene	2640	4.44	50.0	ug/kg	2500		106	81.9-125			
Toluene	2820	6.29	50.0	"	2500		113	80-125			
Surrogate: 4-BFB	1390			"	2000		69.5	42.6-130			
Surrogate: 1,2-DCA-d4	1320			"	2000		66.0	57.3-144			
Surrogate: Dibromofluoromethane	1260			"	2000		63.0	45.5-130			
Surrogate: Toluene-d8	1590			"	2000		79.5	42.1-144			

Matrix Spike (3090610-MS1)

Source: P3I0433-15

Benzene	2940	4.44	50.0	ug/kg dry	3130	ND	93.9	68.5-125			
Toluene	3200	6.29	50.0	"	3130	ND	102	70.3-125			
Surrogate: 4-BFB	1520			"	2500		60.8	42.6-130			
Surrogate: 1,2-DCA-d4	1420			"	2500		56.8	57.3-144			S-09
Surrogate: Dibromofluoromethane	1380			"	2500		55.2	45.5-130			
Surrogate: Toluene-d8	1740			"	2500		69.6	42.1-144			

Matrix Spike Dup (3090610-MSD1)

Source: P3I0433-15

Benzene	2930	4.44	50.0	ug/kg dry	3130	ND	93.6	68.5-125	0.341	25	
Toluene	3150	6.29	50.0	"	3130	ND	101	70.3-125	1.57	25	
Surrogate: 4-BFB	1510			"	2500		60.4	42.6-130			
Surrogate: 1,2-DCA-d4	1420			"	2500		56.8	57.3-144			S-09
Surrogate: Dibromofluoromethane	1350			"	2500		54.0	45.5-130			
Surrogate: Toluene-d8	1710			"	2500		68.4	42.1-144			

Batch 3090911: Prepared 09/22/03 Using EPA 5035

Blank (3090911-BLK1)

1,2-Dibromoethane	ND	11.6	50.0	ug/kg							U
1,2-Dichloroethane	ND	11.2	50.0	"							U
Benzene	ND	4.44	50.0	"							U
Toluene	ND	6.29	50.0	"							U
Ethylbenzene	ND	9.40	50.0	"							U
Xylenes (total)	ND	26.2	100	"							U
Methyl tert-butyl ether	ND	11.9	200	"							U
Naphthalene	ND	14.1	200	"							U
1,2,4-Trimethylbenzene	ND	6.75	100	"							U

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

**Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090911: Prepared 09/22/03 Using EPA 5035

Blank (3090911-BLK1)

1,3,5-Trimethylbenzene	ND	9.33	50.0	ug/kg							U
Isopropylbenzene	ND	9.55	200	"							U
n-Propylbenzene	ND	9.89	50.0	"							U
<i>Surrogate: 4-BFB</i>	2020			"	2000		101	42.6-130			
<i>Surrogate: 1,2-DCA-d4</i>	2030			"	2000		102	57.3-144			
<i>Surrogate: Dibromofluoromethane</i>	1870			"	2000		93.5	45.5-130			
<i>Surrogate: Toluene-d8</i>	2140			"	2000		107	42.1-144			

LCS (3090911-BS1)

Benzene	2540	4.44	50.0	ug/kg	2500		102	81.9-125			
Toluene	2500	6.29	50.0	"	2500		100	80-125			
<i>Surrogate: 4-BFB</i>	2020			"	2000		101	42.6-130			
<i>Surrogate: 1,2-DCA-d4</i>	2030			"	2000		102	57.3-144			
<i>Surrogate: Dibromofluoromethane</i>	1890			"	2000		94.5	45.5-130			
<i>Surrogate: Toluene-d8</i>	2120			"	2000		106	42.1-144			

Matrix Spike (3090911-MS1)

Source: P3I0433-03RE1

Benzene	2890	4.44	50.0	ug/kg dry	3640	ND	79.4	68.5-125			
Toluene	2860	6.29	50.0	"	3640	ND	78.6	70.3-125			
<i>Surrogate: 4-BFB</i>	2430			"	2910		83.5	42.6-130			
<i>Surrogate: 1,2-DCA-d4</i>	2310			"	2910		79.4	57.3-144			
<i>Surrogate: Dibromofluoromethane</i>	2120			"	2910		72.9	45.5-130			
<i>Surrogate: Toluene-d8</i>	2440			"	2910		83.8	42.1-144			

Matrix Spike Dup (3090911-MSD1)

Source: P3I0433-03RE1

Benzene	3070	4.44	50.0	ug/kg dry	3640	ND	84.3	68.5-125	6.04	25	
Toluene	3050	6.29	50.0	"	3640	ND	83.8	70.3-125	6.43	25	
<i>Surrogate: 4-BFB</i>	2420			"	2910		83.2	42.6-130			
<i>Surrogate: 1,2-DCA-d4</i>	2510			"	2910		86.3	57.3-144			
<i>Surrogate: Dibromofluoromethane</i>	2240			"	2910		77.0	45.5-130			
<i>Surrogate: Toluene-d8</i>	2540			"	2910		87.3	42.1-144			

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Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090585: Prepared 09/15/03 Using EPA 3550

Blank (3090585-BLK1)

Acenaphthene	ND	3.30	13.4	ug/kg							U
Acenaphthylene	ND	3.30	13.4	"							U
Anthracene	ND	3.30	13.4	"							U
Benzo (a) anthracene	ND	3.30	13.4	"							U
Benzo (a) pyrene	ND	3.30	13.4	"							U
Benzo (b) fluoranthene	ND	3.30	13.4	"							U
Benzo (ghi) perylene	ND	3.30	13.4	"							U
Benzo (k) fluoranthene	ND	3.30	13.4	"							U
Chrysene	ND	3.30	13.4	"							U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"							U
Fluoranthene	ND	3.30	13.4	"							U
Fluorene	ND	3.30	13.4	"							U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"							U
Naphthalene	ND	3.30	13.4	"							U
Phenanthrene	ND	3.30	13.4	"							U
Pyrene	ND	3.30	13.4	"							U
Surrogate: Fluorene-d10	72.4			"	83.3		86.9	40-150			
Surrogate: Pyrene-d10	87.0			"	83.3		104	40-150			
Surrogate: Benzo (a) pyrene-d12	80.8			"	83.3		97.0	40-150			

LCS (3090585-BS1)

Acenaphthene	151	3.30	13.4	ug/kg	167		90.4	33-139			
Benzo (a) pyrene	172	3.30	13.4	"	167		103	45-149			
Pyrene	153	3.30	13.4	"	167		91.6	39-138			
Surrogate: Fluorene-d10	72.5			"	83.3		87.0	40-150			
Surrogate: Pyrene-d10	82.4			"	83.3		98.9	40-150			
Surrogate: Benzo (a) pyrene-d12	79.6			"	83.3		95.6	40-150			

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 Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 11/12/03 14:48

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090585: Prepared 09/15/03 Using EPA 3550

Matrix Spike (3090585-MS1)				Source: P3I0461-01						R-05	
Acenaphthene	491	33.0	134 ug/kg dry	209	245	118	33-139				D
Benzo (a) pyrene	382	33.0	134 "	209	223	76.1	45-149				D
Pyrene	885	33.0	134 "	209	666	105	39-138				D
Surrogate: Fluorene-d10	152		"	104		146	40-150				D
Surrogate: Pyrene-d10	116		"	104		112	40-150				D
Surrogate: Benzo (a) pyrene-d12	80.2		"	104		77.1	40-150				D
Matrix Spike Dup (3090585-MSD1)				Source: P3I0461-01						R-05	
Acenaphthene	343	33.0	134 ug/kg dry	209	245	46.9	33-139	35.5	60		D
Benzo (a) pyrene	404	33.0	134 "	209	223	86.6	45-149	5.60	60		D
Pyrene	837	33.0	134 "	209	666	81.8	39-138	5.57	60		D
Surrogate: Fluorene-d10	111		"	104		107	40-150				D
Surrogate: Pyrene-d10	97.7		"	104		93.9	40-150				D
Surrogate: Benzo (a) pyrene-d12	82.8		"	104		79.6	40-150				D

North Creek Analytical - Portland

Joy D. Chang For Brian Cone, Industrial Services Manager

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 11/12/03 14:48

Percent Dry Weight (Solids) per Standard Methods - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3090665: Prepared 09/16/03 Using Dry Weight

Duplicate (3090665-DUP1)

Source: P3I0433-24

% Solids	91.4	1.00	1.00	% by Weight		91.6			0.219	20	
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Duplicate (3090665-DUP2)

Source: P3I0433-25

% Solids	76.3	1.00	1.00	% by Weight		77.0			0.913	20	
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Duplicate (3090665-DUP3)

Source: P3I0333-04

% Solids	74.5	1.00	1.00	% by Weight		74.6			0.134	20	
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Duplicate (3090665-DUP4)

Source: P3I0596-04

% Solids	82.6	1.00	1.00	% by Weight		82.3			0.364	20	
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P.O. Box 80762
Portland OR, 97280-0762

Project: Astoria Area-Wide Petroleum Site
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
11/12/03 14:48

Notes and Definitions

- A-01 Detected hydrocarbons appear to be due to a light, diesel-range product such as kerosene or jet fuel as well as diesel.
- A-01a The surrogate recovery is outside the control limit. Review of associated batch QC indicates the recovery for this surrogate does not represent an out-of-control condition for the batch.
- D Data reported from a preparation or analytical dilution.
- J Estimated value.
- Q-14 The Spike Recovery and/or RPD is outside of control limits due to a non-homogeneous sample matrix.
- R-05 Reporting limits raised due to dilution necessary for analysis. Sample contains high levels of reported analyte, non-target analyte, and/or matrix interference.
- R-09 Analyte detected below MRL in sample extract. Percent solids calculation raised result above MRL. Result reported as Estimated Value.
- S-01 The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
- S-09 Surrogate recovery is outside control limits due to matrix interference.
- U Analyte included in the analysis but not detected.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

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Hart Crowser Five Centerpointe Drive Lake Oswego, OR 97035	Project: Astoria Area-Wide Petroleum Site Project Number: 15227 Project Manager: Leon Lahiere	Reported: 04/23/04 14:35
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ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-915(s)-5.0	P4D0071-01	Soil	03/31/04 10:20	04/01/04 14:00
SB-916(s)-5.0	P4D0071-02	Soil	03/31/04 09:30	04/01/04 14:00
SB-917(s)-5.0	P4D0071-03	Soil	03/31/04 09:50	04/01/04 14:00
SB-918(s)-5.0	P4D0071-04	Soil	03/31/04 10:46	04/01/04 14:00
SB-919(s)-5.0	P4D0071-05	Soil	03/31/04 11:05	04/01/04 14:00

North Creek Analytical - Portland

Crystal Jones For Lisa Domenighini, Project Manager

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Hart Crowser
Five Centerpointe Drive
Lake Oswego, OR 97035

Project: Astoria Area-Wide Petroleum Site
Project Number: 15227
Project Manager: Leon Lahiere

Reported:
04/23/04 14:35

**Hydrocarbon Identification per NW-TPH Methodology
North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SB-915(s)-5.0 (P4D0071-01) Soil						Sampled: 03/31/04 Received: 04/01/04			
Gasoline Range Hydrocarbons	ND	20.0	mg/kg dry	1	NWTPH HC	04/05/04	04/05/04	4040126	
Diesel Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Heavy Oil Range Hydrocarbons	DET	100	"	"	"	"	"	"	
<i>Surr: 1-Chlorooctadecane</i>	117 %	50-150							
SB-916(s)-5.0 (P4D0071-02) Soil						Sampled: 03/31/04 Received: 04/01/04			
Gasoline Range Hydrocarbons	ND	20.0	mg/kg dry	1	NWTPH HC	04/05/04	04/05/04	4040126	
Diesel Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Heavy Oil Range Hydrocarbons	ND	100	"	"	"	"	"	"	
<i>Surr: 1-Chlorooctadecane</i>	119 %	50-150							
SB-917(s)-5.0 (P4D0071-03) Soil						Sampled: 03/31/04 Received: 04/01/04			
Gasoline Range Hydrocarbons	ND	20.0	mg/kg dry	1	NWTPH HC	04/05/04	04/05/04	4040126	
Diesel Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Heavy Oil Range Hydrocarbons	ND	100	"	"	"	"	"	"	
<i>Surr: 1-Chlorooctadecane</i>	120 %	50-150							
SB-918(s)-5.0 (P4D0071-04) Soil						Sampled: 03/31/04 Received: 04/01/04			
Gasoline Range Hydrocarbons	ND	20.0	mg/kg dry	1	NWTPH HC	04/05/04	04/05/04	4040126	
Diesel Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Heavy Oil Range Hydrocarbons	ND	100	"	"	"	"	"	"	
<i>Surr: 1-Chlorooctadecane</i>	115 %	50-150							
SB-919(s)-5.0 (P4D0071-05) Soil						Sampled: 03/31/04 Received: 04/01/04			
Gasoline Range Hydrocarbons	ND	20.0	mg/kg dry	1	NWTPH HC	04/05/04	04/05/04	4040126	
Diesel Range Hydrocarbons	ND	50.0	"	"	"	"	"	"	
Heavy Oil Range Hydrocarbons	ND	100	"	"	"	"	"	"	
<i>Surr: 1-Chlorooctadecane</i>	122 %	50-150							

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Crystal Jones For Lisa Domenighini, Project Manager

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Hart Crowser Five Centerpointe Drive Lake Oswego, OR 97035	Project: Astoria Area-Wide Petroleum Site Project Number: 15227 Project Manager: Leon Lahiere	Reported: 04/23/04 14:35
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Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SB-915(s)-5.0 (P4D0071-01) Soil					Sampled: 03/31/04 Received: 04/01/04				
Diesel Range Organics	ND	25.0	mg/kg dry	1	NWTPH-Dx	04/09/04	04/12/04	4040340	
Heavy Oil Range Hydrocarbons	294	50.0	"	"	"	"	"	"	
<i>Surr: 1-Chlorooctadecane</i>	96.2 %	50-150							

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Crystal Jones For Lisa Domenighini, Project Manager

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Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SB-915(s)-5.0 (P4D0071-01) Soil						Sampled: 03/31/04 Received: 04/01/04		R-05	
Acenaphthene	ND	67.0	ug/kg dry	2	EPA 8270m	04/14/04	04/16/04	4040522	
Acenaphthylene	ND	67.0	"	"	"	"	"	"	
Anthracene	ND	67.0	"	"	"	"	"	"	
Benzo (a) anthracene	ND	67.0	"	"	"	"	"	"	
Benzo (a) pyrene	ND	67.0	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	67.0	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	67.0	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	67.0	"	"	"	"	"	"	
Chrysene	ND	67.0	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	67.0	"	"	"	"	"	"	
Fluoranthene	ND	67.0	"	"	"	"	"	"	
Fluorene	ND	67.0	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	67.0	"	"	"	"	"	"	
Naphthalene	ND	67.0	"	"	"	"	"	"	
Phenanthrene	ND	67.0	"	"	"	"	"	"	
Pyrene	ND	67.0	"	"	"	"	"	"	
<i>Surr: Fluorene-d10</i>	77.3 %	40-150							
<i>Surr: Pyrene-d10</i>	89.6 %	40-150							
<i>Surr: Benzo (a) pyrene-d12</i>	80.9 %	40-150							

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Crystal Jones For Lisa Domenighini, Project Manager

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Hart Crowser Five Centerpointe Drive Lake Oswego, OR 97035	Project: Astoria Area-Wide Petroleum Site Project Number: 15227 Project Manager: Leon Lahiere	Reported: 04/23/04 14:35
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**Percent Dry Weight (Solids) per Standard Methods
 North Creek Analytical - Portland**

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SB-915(s)-5.0 (P4D0071-01) Soil						Sampled: 03/31/04 Received: 04/01/04			
% Solids	85.9	1.00 % by Weight		1	NCA SOP	04/07/04	04/08/04	4040273	
SB-916(s)-5.0 (P4D0071-02) Soil						Sampled: 03/31/04 Received: 04/01/04			
% Solids	82.1	1.00 % by Weight		1	NCA SOP	04/07/04	04/08/04	4040273	
SB-917(s)-5.0 (P4D0071-03) Soil						Sampled: 03/31/04 Received: 04/01/04			
% Solids	82.1	1.00 % by Weight		1	NCA SOP	04/07/04	04/08/04	4040273	
SB-918(s)-5.0 (P4D0071-04) Soil						Sampled: 03/31/04 Received: 04/01/04			
% Solids	87.4	1.00 % by Weight		1	NCA SOP	04/07/04	04/08/04	4040273	
SB-919(s)-5.0 (P4D0071-05) Soil						Sampled: 03/31/04 Received: 04/01/04			
% Solids	85.9	1.00 % by Weight		1	NCA SOP	04/07/04	04/08/04	4040273	

North Creek Analytical - Portland

Crystal Jones For Lisa Domenighini, Project Manager

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Hart Crowser Five Centerpointe Drive Lake Oswego, OR 97035	Project: Astoria Area-Wide Petroleum Site Project Number: 15227 Project Manager: Leon Lahiere	Reported: 04/23/04 14:35
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Hydrocarbon Identification per NW-TPH Methodology - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040126 - TPH-HCID Extraction

Blank (4040126-BLK1)		Prepared & Analyzed: 04/05/04								
Gasoline Range Hydrocarbons	ND	20.0	mg/kg							
Diesel Range Hydrocarbons	ND	50.0	"							
Heavy Oil Range Hydrocarbons	ND	100	"							
<i>Surr: 1-Chlorooctadecane</i>	<i>DET</i>		"	<i>9.60</i>		<i>125</i>	<i>50-150</i>			

Duplicate (4040126-DUP1)		Source: P4D0045-13		Prepared: 04/05/04 Analyzed: 04/06/04						
Gasoline Range Hydrocarbons	14.0	20.0	mg/kg dry		29.2			70.4	50	Q-16
Diesel Range Hydrocarbons	ND	50.0	"		13.6				50	
Heavy Oil Range Hydrocarbons	ND	100	"		ND			NA	50	
<i>Surr: 1-Chlorooctadecane</i>	<i>DET</i>		"	<i>12.3</i>		<i>109</i>	<i>50-150</i>			

Duplicate (4040126-DUP2)		Source: P4D0045-14		Prepared & Analyzed: 04/05/04						
Gasoline Range Hydrocarbons	ND	20.0	mg/kg dry		ND			NA	50	
Diesel Range Hydrocarbons	ND	50.0	"		ND			NA	50	
Heavy Oil Range Hydrocarbons	ND	100	"		ND			NA	50	
<i>Surr: 1-Chlorooctadecane</i>	<i>DET</i>		"	<i>13.0</i>		<i>98.5</i>	<i>50-150</i>			

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Hart Crowser Five Centerpointe Drive Lake Oswego, OR 97035	Project: Astoria Area-Wide Petroleum Site Project Number: 15227 Project Manager: Leon Lahiere	Reported: 04/23/04 14:35
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Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040340 - EPA 3550 Fuels

Blank (4040340-BLK1)				Prepared & Analyzed: 04/09/04						
Diesel Range Organics	ND	25.0	mg/kg							
Heavy Oil Range Hydrocarbons	ND	50.0	"							
<i>Surr: 1-Chlorooctadecane</i>	4.29		"	4.80		89.4	50-150			

LCS (4040340-BS1)				Prepared & Analyzed: 04/09/04						
Diesel Range Organics	123	25.0	mg/kg	125		98.4	50-150			
Heavy Oil Range Hydrocarbons	72.5	50.0	"	75.0		96.7	50-150			
<i>Surr: 1-Chlorooctadecane</i>	5.36		"	4.80		112	50-150			

Duplicate (4040340-DUP1)				Source: P4D0045-06		Prepared & Analyzed: 04/09/04				
Diesel Range Organics	ND	25.0	mg/kg dry		ND			NA	50	
Heavy Oil Range Hydrocarbons	ND	50.0	"		ND			NA	50	
<i>Surr: 1-Chlorooctadecane</i>	5.64		"	6.44		87.6	50-150			

Duplicate (4040340-DUP2)				Source: P4D0045-07		Prepared & Analyzed: 04/09/04				
Diesel Range Organics	ND	25.0	mg/kg dry		ND			NA	50	
Heavy Oil Range Hydrocarbons	ND	50.0	"		ND			NA	50	
<i>Surr: 1-Chlorooctadecane</i>	5.34		"	6.02		88.7	50-150			

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Hart Crowser Five Centerpointe Drive Lake Oswego, OR 97035	Project: Astoria Area-Wide Petroleum Site Project Number: 15227 Project Manager: Leon Lahiere	Reported: 04/23/04 14:35
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Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040522 - EPA 3550

Blank (4040522-BLK1) Prepared: 04/14/04 Analyzed: 04/16/04

Acenaphthene	ND	13.4	ug/kg							
Acenaphthylene	ND	13.4	"							
Anthracene	ND	13.4	"							
Benzo (a) anthracene	ND	13.4	"							
Benzo (a) pyrene	ND	13.4	"							
Benzo (b) fluoranthene	ND	13.4	"							
Benzo (ghi) perylene	ND	13.4	"							
Benzo (k) fluoranthene	ND	13.4	"							
Chrysene	ND	13.4	"							
Dibenzo (a,h) anthracene	ND	13.4	"							
Fluoranthene	ND	13.4	"							
Fluorene	ND	13.4	"							
Indeno (1,2,3-cd) pyrene	ND	13.4	"							
Naphthalene	ND	13.4	"							
Phenanthrene	ND	13.4	"							
Pyrene	ND	13.4	"							
Surr: Fluorene-d10	64.2		"	83.3		77.1	40-150			
Surr: Pyrene-d10	76.4		"	83.3		91.7	40-150			
Surr: Benzo (a) pyrene-d12	73.0		"	83.3		87.6	40-150			

LCS (4040522-BS1) Prepared: 04/14/04 Analyzed: 04/16/04

Acenaphthene	131	13.4	ug/kg	167		78.4	33-139			
Benzo (a) pyrene	156	13.4	"	167		93.4	45-149			
Pyrene	146	13.4	"	167		87.4	39-138			
Surr: Fluorene-d10	68.9		"	83.3		82.7	40-150			
Surr: Pyrene-d10	74.4		"	83.3		89.3	40-150			
Surr: Benzo (a) pyrene-d12	76.6		"	83.3		92.0	40-150			

North Creek Analytical - Portland

Crystal Jones For Lisa Domenighini, Project Manager

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Hart Crowser Five Centerpointe Drive Lake Oswego, OR 97035	Project: Astoria Area-Wide Petroleum Site Project Number: 15227 Project Manager: Leon Lahiere	Reported: 04/23/04 14:35
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Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040522 - EPA 3550

Matrix Spike (4040522-MS1)	Source: P4D0071-01			Prepared: 04/14/04		Analyzed: 04/16/04		R-05		
Acenaphthene	156	67.0	ug/kg dry	194	ND	80.4	33-139			
Benzo (a) pyrene	173	67.0	"	194	ND	89.2	45-149			
Pyrene	197	67.0	"	194	ND	102	39-138			
<i>Surr: Fluorene-d10</i>	<i>79.0</i>		<i>"</i>	<i>97.0</i>		<i>81.4</i>	<i>40-150</i>			
<i>Surr: Pyrene-d10</i>	<i>88.2</i>		<i>"</i>	<i>97.0</i>		<i>90.9</i>	<i>40-150</i>			
<i>Surr: Benzo (a) pyrene-d12</i>	<i>81.7</i>		<i>"</i>	<i>97.0</i>		<i>84.2</i>	<i>40-150</i>			

Matrix Spike Dup (4040522-MSD1)	Source: P4D0071-01			Prepared: 04/14/04		Analyzed: 04/16/04		R-05		
Acenaphthene	156	67.0	ug/kg dry	194	ND	80.4	33-139	0.00	60	
Benzo (a) pyrene	174	67.0	"	194	ND	89.7	45-149	0.576	60	
Pyrene	190	67.0	"	194	ND	97.9	39-138	3.62	60	
<i>Surr: Fluorene-d10</i>	<i>79.3</i>		<i>"</i>	<i>97.0</i>		<i>81.8</i>	<i>40-150</i>			
<i>Surr: Pyrene-d10</i>	<i>90.4</i>		<i>"</i>	<i>97.0</i>		<i>93.2</i>	<i>40-150</i>			
<i>Surr: Benzo (a) pyrene-d12</i>	<i>83.1</i>		<i>"</i>	<i>97.0</i>		<i>85.7</i>	<i>40-150</i>			

North Creek Analytical - Portland

Crystal Jones For Lisa Domenighini, Project Manager

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Hart Crowser Five Centerpointe Drive Lake Oswego, OR 97035	Project: Astoria Area-Wide Petroleum Site Project Number: 15227 Project Manager: Leon Lahiere	Reported: 04/23/04 14:35
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Percent Dry Weight (Solids) per Standard Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040273 - Dry Weight

Duplicate (4040273-DUP1)	Source: P4D0112-03		Prepared: 04/07/04 Analyzed: 04/08/04							
% Solids	65.5	1.00% by Weight			65.7			0.305	20	
Duplicate (4040273-DUP2)	Source: P4D0112-05		Prepared: 04/07/04 Analyzed: 04/08/04							
% Solids	67.3	1.00% by Weight			67.0			0.447	20	
Duplicate (4040273-DUP3)	Source: P4D0112-09		Prepared: 04/07/04 Analyzed: 04/08/04							
% Solids	63.2	1.00% by Weight			63.0			0.317	20	
Duplicate (4040273-DUP4)	Source: P4D0114-02		Prepared: 04/07/04 Analyzed: 04/08/04							
% Solids	90.0	1.00% by Weight			89.8			0.222	20	
Duplicate (4040273-DUP5)	Source: P4D0124-01		Prepared: 04/07/04 Analyzed: 04/08/04							
% Solids	90.8	1.00% by Weight			90.7			0.110	20	

North Creek Analytical - Portland

Crystal Jones For Lisa Domenighini, Project Manager

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Hart Crowser Five Centerpointe Drive Lake Oswego, OR 97035	Project: Astoria Area-Wide Petroleum Site Project Number: 15227 Project Manager: Leon Lahiere	Reported: 04/23/04 14:35
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Notes and Definitions

- Q-16 RPD is not applicable for analyte concentrations less than 5 times the MRL.
- R-05 Reporting limits raised due to dilution necessary for analysis. Sample contains high levels of reported analyte, non-target analyte, and/or matrix interference.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
- wet Sample results reported on a wet weight basis (as received)
- RPD Relative Percent Difference

North Creek Analytical - Portland

Crystal Jones For Lisa Domenighini, Project Manager

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19 April 2004

Tom Calabrese
EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762
RE: Astoria Area-Wide Petroleum Site RI-1

Enclosed are the results of analyses for samples received by the laboratory on 04/02/04 09:58. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Joy D. Chang
Project Manager



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
04/19/04 16:53

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-006(A)-7'	P4D0142-01	Soil	03/31/04 14:15	04/02/04 09:58
SB-410(F)-2'	P4D0142-02	Soil	03/31/04 14:35	04/02/04 09:58
SB-410(F)-4'	P4D0142-03	Soil	03/31/04 14:40	04/02/04 09:58
SB-410(F)-9'	P4D0142-04	Soil	03/31/04 14:45	04/02/04 09:58
SB-020(A)-4'	P4D0142-05	Soil	03/31/04 15:00	04/02/04 09:58
SB-020(A)-9'	P4D0142-06	Soil	03/31/04 15:05	04/02/04 09:58
SB-721(P)-3'	P4D0142-07	Soil	03/31/04 13:50	04/02/04 09:58
SB-721(P)-7'	P4D0142-08	Soil	03/31/04 13:55	04/02/04 09:58

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
04/19/04 16:53

**Gasoline Hydrocarbons per NW TPH-Gx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-006(A)-7' (P4D0142-01) Soil Sampled: 03/31/04 14:15 Received: 04/02/04 09:58										
Gasoline Range Hydrocarbons	2190	5.50	40.0 mg/kg dry		10	4040217	04/06/04	04/07/04	NW TPH-G	D
<i>Surrogate: a,a,a-TFT</i>	33.3 %		50-150			"	"	"	"	S-09, D
SB-410(F)-2' (P4D0142-02) Soil Sampled: 03/31/04 14:35 Received: 04/02/04 09:58										
Gasoline Range Hydrocarbons	4.45	0.550	4.00 mg/kg dry		1	4040217	04/06/04	04/07/04	NW TPH-G	
<i>Surrogate: a,a,a-TFT</i>	65.7 %		50-150			"	"	"	"	
SB-410(F)-4' (P4D0142-03) Soil Sampled: 03/31/04 14:40 Received: 04/02/04 09:58										
Gasoline Range Hydrocarbons	2.22	0.550	4.00 mg/kg dry		1	4040217	04/06/04	04/07/04	NW TPH-G	J
<i>Surrogate: a,a,a-TFT</i>	61.7 %		50-150			"	"	"	"	
SB-410(F)-9' (P4D0142-04) Soil Sampled: 03/31/04 14:45 Received: 04/02/04 09:58										
Gasoline Range Hydrocarbons	1.93	0.550	4.00 mg/kg dry		1	4040217	04/06/04	04/07/04	NW TPH-G	J
<i>Surrogate: a,a,a-TFT</i>	58.2 %		50-150			"	"	"	"	
SB-020(A)-4' (P4D0142-05) Soil Sampled: 03/31/04 15:00 Received: 04/02/04 09:58										
Gasoline Range Hydrocarbons	1.83	0.550	4.00 mg/kg dry		1	4040217	04/06/04	04/07/04	NW TPH-G	J
<i>Surrogate: a,a,a-TFT</i>	57.9 %		50-150			"	"	"	"	
SB-020(A)-9' (P4D0142-06) Soil Sampled: 03/31/04 15:05 Received: 04/02/04 09:58										
Gasoline Range Hydrocarbons	3.10	0.550	4.00 mg/kg dry		1	4040217	04/06/04	04/07/04	NW TPH-G	J
<i>Surrogate: a,a,a-TFT</i>	57.5 %		50-150			"	"	"	"	
SB-721(P)-7' (P4D0142-08) Soil Sampled: 03/31/04 13:55 Received: 04/02/04 09:58										
Gasoline Range Hydrocarbons	1.80	0.550	4.00 mg/kg dry		1	4040217	04/06/04	04/07/04	NW TPH-G	J
<i>Surrogate: a,a,a-TFT</i>	57.1 %		50-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
04/19/04 16:53

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-006(A)-7' (P4D0142-01) Soil Sampled: 03/31/04 14:15 Received: 04/02/04 09:58										
Diesel Range Organics	14000	500	1000	mg/kg dry	40	4040241	04/07/04	04/08/04	NWTPH-Dx	D
Heavy Oil Range Hydrocarbons	ND	1000	2000	"	"	"	"	"	"	R-05, D, U
Surrogate: 1-Chlorooctadecane	%		50-150			"	"	"	"	S-01, D
SB-410(F)-2' (P4D0142-02) Soil Sampled: 03/31/04 14:35 Received: 04/02/04 09:58										
Diesel Range Organics	48.2	12.5	25.0	mg/kg dry	1	4040241	04/07/04	04/08/04	NWTPH-Dx	D-17
Heavy Oil Range Hydrocarbons	179	25.0	50.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctadecane	106 %		50-150			"	"	"	"	
SB-410(F)-4' (P4D0142-03) Soil Sampled: 03/31/04 14:40 Received: 04/02/04 09:58										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	4040241	04/07/04	04/08/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	97.2 %		50-150			"	"	"	"	
SB-410(F)-9' (P4D0142-04) Soil Sampled: 03/31/04 14:45 Received: 04/02/04 09:58										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	4040241	04/07/04	04/08/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	98.2 %		50-150			"	"	"	"	
SB-020(A)-4' (P4D0142-05) Soil Sampled: 03/31/04 15:00 Received: 04/02/04 09:58										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	4040241	04/07/04	04/08/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	94.9 %		50-150			"	"	"	"	
SB-020(A)-9' (P4D0142-06) Soil Sampled: 03/31/04 15:05 Received: 04/02/04 09:58										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	4040241	04/07/04	04/07/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	82.3 %		50-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 04/19/04 16:53

**Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-721(P)-7' (P4D0142-08) Soil Sampled: 03/31/04 13:55 Received: 04/02/04 09:58										
Diesel Range Organics	ND	12.5	25.0	mg/kg dry	1	4040241	04/07/04	04/07/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	97.7 %		50-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
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 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 04/19/04 16:53

Total Metals per EPA 6000/7000 Series Methods
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-006(A)-7' (P4D0142-01) Soil Sampled: 03/31/04 14:15 Received: 04/02/04 09:58										
Lead	2.34	0.0869	0.410	mg/kg dry	1	4040432	04/12/04	04/14/04	EPA 6020	D
SB-410(F)-4' (P4D0142-03) Soil Sampled: 03/31/04 14:40 Received: 04/02/04 09:58										
Lead	1.66	0.0876	0.413	mg/kg dry	1	4040432	04/12/04	04/14/04	EPA 6020	D
SB-410(F)-9' (P4D0142-04) Soil Sampled: 03/31/04 14:45 Received: 04/02/04 09:58										
Lead	5.42	0.0752	0.355	mg/kg dry	1	4040432	04/12/04	04/14/04	EPA 6020	D
SB-020(A)-4' (P4D0142-05) Soil Sampled: 03/31/04 15:00 Received: 04/02/04 09:58										
Lead	4.59	0.0922	0.435	mg/kg dry	1	4040432	04/12/04	04/14/04	EPA 6020	D
SB-020(A)-9' (P4D0142-06) Soil Sampled: 03/31/04 15:05 Received: 04/02/04 09:58										
Lead	2.48	0.0763	0.360	mg/kg dry	1	4040432	04/12/04	04/14/04	EPA 6020	D
SB-721(P)-3' (P4D0142-07) Soil Sampled: 03/31/04 13:50 Received: 04/02/04 09:58										
Lead	13.0	0.0774	0.365	mg/kg dry	1	4040432	04/12/04	04/14/04	EPA 6020	D
SB-721(P)-7' (P4D0142-08) Soil Sampled: 03/31/04 13:55 Received: 04/02/04 09:58										
Lead	5.36	0.0922	0.435	mg/kg dry	1	4040432	04/12/04	04/14/04	EPA 6020	D

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
04/19/04 16:53

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-006(A)-7' (P4D0142-01) Soil Sampled: 03/31/04 14:15 Received: 04/02/04 09:58										
1,2-Dibromoethane	ND	116	500	ug/kg dry	10	4040239	04/07/04	04/07/04	EPA 8260B	D, U
1,2-Dichloroethane	ND	112	500	"	"	"	"	"	"	D, U
Benzene	4390	44.4	400	"	"	"	"	"	"	D
Toluene	832	62.9	500	"	"	"	"	"	"	D
Ethylbenzene	73800	94.0	500	"	"	"	"	"	"	D
Xylenes (total)	86900	262	1000	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	119	2000	"	"	"	"	"	"	D, U
Naphthalene	38000	141	2000	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	186000	67.5	1000	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	31100	93.3	500	"	"	"	"	"	"	D
Isopropylbenzene	7680	95.5	2000	"	"	"	"	"	"	D
n-Propylbenzene	34700	98.9	500	"	"	"	"	"	"	D
<i>Surrogate: 4-BFB</i>	<i>122 %</i>		<i>42.6-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>D</i>
<i>Surrogate: 1,2-DCA-d4</i>	<i>109 %</i>		<i>57.3-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>D</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>		<i>45.5-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>D</i>
<i>Surrogate: Toluene-d8</i>	<i>111 %</i>		<i>42.1-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>D</i>
SB-410(F)-2' (P4D0142-02) Soil Sampled: 03/31/04 14:35 Received: 04/02/04 09:58										
1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	4040239	04/07/04	04/08/04	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	40.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	23.0	14.1	200	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	18.6	6.75	100	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	<i>95.0 %</i>		<i>42.6-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 1,2-DCA-d4</i>	<i>112 %</i>		<i>57.3-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>		<i>45.5-130</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>	<i>105 %</i>		<i>42.1-144</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
04/19/04 16:53

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-410(F)-4' (P4D0142-03) Soil Sampled: 03/31/04 14:40 Received: 04/02/04 09:58

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	4040239	04/07/04	04/08/04	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	40.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U

Surrogate: 4-BFB	86.3 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	100 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	94.0 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	95.2 %		42.1-144			"	"	"	"	

SB-410(F)-9' (P4D0142-04) Soil Sampled: 03/31/04 14:45 Received: 04/02/04 09:58

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	4040239	04/07/04	04/08/04	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	40.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U

Surrogate: 4-BFB	82.4 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	93.0 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	87.1 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	89.3 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
04/19/04 16:53

**Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-020(A)-4' (P4D0142-05) Soil Sampled: 03/31/04 15:00 Received: 04/02/04 09:58

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	4040239	04/07/04	04/08/04	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	40.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U

Surrogate: 4-BFB	79.4 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	93.4 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	87.9 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	88.6 %		42.1-144			"	"	"	"	

SB-020(A)-9' (P4D0142-06) Soil Sampled: 03/31/04 15:05 Received: 04/02/04 09:58

1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	4040239	04/07/04	04/08/04	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	40.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U

Surrogate: 4-BFB	83.5 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	97.5 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	90.8 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	91.5 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 04/19/04 16:53

Selected Volatile Organic Compounds per EPA Method 8260B
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-721(P)-7' (P4D0142-08) Soil Sampled: 03/31/04 13:55 Received: 04/02/04 09:58										
1,2-Dibromoethane	ND	11.6	50.0	ug/kg dry	1	4040239	04/07/04	04/08/04	EPA 8260B	U
1,2-Dichloroethane	ND	11.2	50.0	"	"	"	"	"	"	U
Benzene	ND	4.44	40.0	"	"	"	"	"	"	U
Toluene	ND	6.29	50.0	"	"	"	"	"	"	U
Ethylbenzene	ND	9.40	50.0	"	"	"	"	"	"	U
Xylenes (total)	ND	26.2	100	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	11.9	200	"	"	"	"	"	"	U
Naphthalene	ND	14.1	200	"	"	"	"	"	"	U
1,2,4-Trimethylbenzene	ND	6.75	100	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"	"	"	"	"	"	U
Isopropylbenzene	ND	9.55	200	"	"	"	"	"	"	U
n-Propylbenzene	ND	9.89	50.0	"	"	"	"	"	"	U
Surrogate: 4-BFB	81.0 %		42.6-130			"	"	"	"	
Surrogate: 1,2-DCA-d4	94.9 %		57.3-144			"	"	"	"	
Surrogate: Dibromofluoromethane	88.3 %		45.5-130			"	"	"	"	
Surrogate: Toluene-d8	88.0 %		42.1-144			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
04/19/04 16:53

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-006(A)-7' (P4D0142-01) Soil Sampled: 03/31/04 14:15 Received: 04/02/04 09:58 R-05										
Acenaphthene	2470	165	670	ug/kg dry	50	4040347	04/09/04	04/16/04	EPA 8270m	D
Acenaphthylene	ND	1000	1000	"	"	"	"	"	"	R-03, D, U
Anthracene	ND	6700	6700	"	500	"	"	04/16/04	"	R-03, D, U
Benzo (a) anthracene	ND	165	670	"	50	"	"	04/16/04	"	D, U
Benzo (a) pyrene	ND	165	670	"	"	"	"	"	"	D, U
Benzo (b) fluoranthene	ND	165	670	"	"	"	"	"	"	D, U
Benzo (ghi) perylene	ND	165	670	"	"	"	"	"	"	D, U
Benzo (k) fluoranthene	ND	165	670	"	"	"	"	"	"	D, U
Chrysene	ND	165	670	"	"	"	"	"	"	D, U
Dibenzo (a,h) anthracene	ND	165	670	"	"	"	"	"	"	D, U
Fluoranthene	273	165	670	"	"	"	"	"	"	J, D
Fluorene	6700	1650	6700	"	500	"	"	04/16/04	"	D
Indeno (1,2,3-cd) pyrene	ND	165	670	"	50	"	"	04/16/04	"	D, U
Naphthalene	61200	1650	6700	"	500	"	"	04/16/04	"	D
Phenanthrene	12500	165	670	"	50	"	"	04/16/04	"	D
Pyrene	1090	165	670	"	"	"	"	"	"	D

Surrogate: Fluorene-d10 % 40-150 " " " " S-01, D
Surrogate: Pyrene-d10 % 40-150 " " " " S-01, D
Surrogate: Benzo (a) pyrene-d12 % 40-150 " " " " S-01, D

SB-410(F)-4' (P4D0142-03) Soil Sampled: 03/31/04 14:40 Received: 04/02/04 09:58

Acenaphthene	ND	3.30	13.4	ug/kg dry	1	4040347	04/09/04	04/16/04	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
04/19/04 16:53

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-410(F)-4' (P4D0142-03) Soil Sampled: 03/31/04 14:40 Received: 04/02/04 09:58

Pyrene	ND	3.30	13.4	ug/kg dry	1	4040347	04/09/04	04/16/04	EPA 8270m	U
Surrogate: Fluorene-d10	82.0 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	92.6 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	90.0 %		40-150			"	"	"	"	

SB-020(A)-4' (P4D0142-05) Soil Sampled: 03/31/04 15:00 Received: 04/02/04 09:58

Acenaphthene	ND	3.30	13.4	ug/kg dry	1	4040347	04/09/04	04/16/04	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	80.4 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	92.0 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	88.5 %		40-150			"	"	"	"	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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North Creek Analytical, Inc.
Environmental Laboratory Network



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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
04/19/04 16:53

**Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-020(A)-9' (P4D0142-06) Soil Sampled: 03/31/04 15:05 Received: 04/02/04 09:58										
Acenaphthene	6.51	3.30	13.4	ug/kg dry	1	4040347	04/09/04	04/16/04	EPA 8270m	J
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	20.1	20.1	"	"	"	"	"	"	R-03, U
Fluorene	ND	13.4	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Naphthalene	5.41	3.30	13.4	"	"	"	"	"	"	J
Phenanthrene	34.3	3.30	13.4	"	"	"	"	"	"	
Pyrene	8.23	3.30	13.4	"	"	"	"	"	"	J
Surrogate: Fluorene-d10	80.5 %		40-150			"	"	"	"	
Surrogate: Pyrene-d10	92.4 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	89.0 %		40-150			"	"	"	"	

SB-721(P)-7' (P4D0142-08) Soil Sampled: 03/31/04 13:55 Received: 04/02/04 09:58

Acenaphthene	ND	3.30	13.4	ug/kg dry	1	4040347	04/09/04	04/16/04	EPA 8270m	U
Acenaphthylene	ND	3.30	13.4	"	"	"	"	"	"	U
Anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	3.30	13.4	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Chrysene	ND	3.30	13.4	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluoranthene	ND	3.30	13.4	"	"	"	"	"	"	U
Fluorene	ND	3.30	13.4	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"	"	"	"	"	"	U
Naphthalene	ND	3.30	13.4	"	"	"	"	"	"	U
Phenanthrene	ND	3.30	13.4	"	"	"	"	"	"	U
Pyrene	ND	3.30	13.4	"	"	"	"	"	"	U

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 04/19/04 16:53

Polynuclear Aromatic Compounds per EPA 8270M-SIM
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SB-721(P)-7' (P4D0142-08) Soil Sampled: 03/31/04 13:55 Received: 04/02/04 09:58

Surrogate: Fluorene-d10	80.9 %		40-150			4040347	04/09/04	04/16/04	EPA 8270m	
Surrogate: Pyrene-d10	92.1 %		40-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	94.7 %		40-150			"	"	"	"	

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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 04/19/04 16:53

**Percent Dry Weight (Solids) per Standard Methods
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
SB-006(A)-7' (P4D0142-01) Soil Sampled: 03/31/04 14:15 Received: 04/02/04 09:58										
% Solids	81.8	1.00	1.00% by Weigh		1	4040273	04/07/04	04/08/04	NCA SOP	
SB-410(F)-2' (P4D0142-02) Soil Sampled: 03/31/04 14:35 Received: 04/02/04 09:58										
% Solids	91.2	1.00	1.00% by Weigh		1	4040273	04/07/04	04/08/04	NCA SOP	
SB-410(F)-4' (P4D0142-03) Soil Sampled: 03/31/04 14:40 Received: 04/02/04 09:58										
% Solids	80.4	1.00	1.00% by Weigh		1	4040273	04/07/04	04/08/04	NCA SOP	
SB-410(F)-9' (P4D0142-04) Soil Sampled: 03/31/04 14:45 Received: 04/02/04 09:58										
% Solids	73.6	1.00	1.00% by Weigh		1	4040273	04/07/04	04/08/04	NCA SOP	
SB-020(A)-4' (P4D0142-05) Soil Sampled: 03/31/04 15:00 Received: 04/02/04 09:58										
% Solids	73.5	1.00	1.00% by Weigh		1	4040273	04/07/04	04/08/04	NCA SOP	
SB-020(A)-9' (P4D0142-06) Soil Sampled: 03/31/04 15:05 Received: 04/02/04 09:58										
% Solids	70.4	1.00	1.00% by Weigh		1	4040273	04/07/04	04/08/04	NCA SOP	
SB-721(P)-3' (P4D0142-07) Soil Sampled: 03/31/04 13:50 Received: 04/02/04 09:58										
% Solids	89.7	1.00	1.00% by Weigh		1	4040273	04/07/04	04/08/04	NCA SOP	
SB-721(P)-7' (P4D0142-08) Soil Sampled: 03/31/04 13:55 Received: 04/02/04 09:58										
% Solids	73.0	1.00	1.00% by Weigh		1	4040273	04/07/04	04/08/04	NCA SOP	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 04/19/04 16:53

Gasoline Hydrocarbons per NW TPH-Gx Method - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040217: Prepared 04/06/04 Using EPA 5035											
Blank (4040217-BLK1)											
Gasoline Range Hydrocarbons	1.46	0.550	4.00	mg/kg							J
Surrogate: a,a,a-TFT	2.32			"	2.50		92.8	50-150			
LCS (4040217-BS1)											
Gasoline Range Hydrocarbons	10.6	0.550	4.00	mg/kg	12.5		84.8	70-130			
Surrogate: a,a,a-TFT	2.41			"	2.50		96.4	50-150			
Duplicate (4040217-DUP1)						Source: P4D0124-01					
Gasoline Range Hydrocarbons	1.10	0.550	4.00	mg/kg dry		1.26			13.6	40	J
Surrogate: a,a,a-TFT	1.39			"	2.76		50.4	50-150			
Duplicate (4040217-DUP2)						Source: P4D0128-07					
Gasoline Range Hydrocarbons	1.45	0.550	4.00	mg/kg dry		1.95			29.4	40	J
Surrogate: a,a,a-TFT	2.06			"	3.38		60.9	50-150			
Matrix Spike (4040217-MS1)						Source: P4D0124-01					
Gasoline Range Hydrocarbons	10.2	0.550	4.00	mg/kg dry	13.8	1.26	64.8	65-130			Q-01
Surrogate: a,a,a-TFT	1.22			"	2.76		44.2	50-150			S-09

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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
04/19/04 16:53

Diesel and Heavy Range Hydrocarbons per NWTPH-Dx Method - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040241: Prepared 04/07/04 Using EPA 3550 Fuels

Blank (4040241-BLK1)

Diesel Range Organics	ND	12.5	25.0	mg/kg							U
Heavy Oil Range Hydrocarbons	ND	25.0	50.0	"							U
Surrogate: 1-Chlorooctadecane	5.06			"	4.80		105	50-150			

LCS (4040241-BS1)

Diesel Range Organics	112	12.5	25.0	mg/kg	125		89.6	50-150			
Heavy Oil Range Hydrocarbons	70.4	25.0	50.0	"	75.0		93.9	50-150			
Surrogate: 1-Chlorooctadecane	5.47			"	4.80		114	50-150			

Duplicate (4040241-DUP1)

Source: P4D0142-01

Diesel Range Organics	12500	500	1000	mg/kg dry		14000			11.3	50	D
Heavy Oil Range Hydrocarbons	ND	1000	2000	"		ND			NA	50	R-05, D, U
Surrogate: 1-Chlorooctadecane	ND			"	5.87			50-150			S-01, D

Duplicate (4040241-DUP2)

Source: P4D0142-02

Diesel Range Organics	22.8	12.5	25.0	mg/kg dry		48.2			71.5	50	Q-14, J
Heavy Oil Range Hydrocarbons	107	25.0	50.0	"		179			50.3	50	Q-14
Surrogate: 1-Chlorooctadecane	5.32			"	5.26		101	50-150			

North Creek Analytical - Portland

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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
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Total Metals per EPA 6000/7000 Series Methods - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040432: Prepared 04/12/04 Using EPA 3050											
Blank (4040432-BLK1)											
Lead	ND	0.106	0.500	mg/kg							U
LCS (4040432-BS1)											
Lead	10.4	0.106	0.500	mg/kg	10.0		104	80-120			
LCS Dup (4040432-BSD1)											
Lead	10.1	0.106	0.500	mg/kg	10.0		101	80-120	2.93	20	
Duplicate (4040432-DUP1)						Source: P4D0142-01					
Lead	2.41	0.0785	0.370	mg/kg dry		2.34			2.95	40	D
Matrix Spike (4040432-MS1)						Source: P4D0142-01					
Lead	12.9	0.0835	0.394	mg/kg dry	9.63	2.34	110	75-125			D
Matrix Spike (4040432-MS2)						Source: P4D0142-03					
Lead	12.0	0.0855	0.403	mg/kg dry	10.0	1.66	103	75-125			D

North Creek Analytical - Portland

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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
04/19/04 16:53

**Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040239: Prepared 04/07/04 Using EPA 5035

Blank (4040239-BLK1)

1,2-Dibromoethane	ND	11.6	50.0	ug/kg							U
1,2-Dichloroethane	ND	11.2	50.0	"							U
Benzene	ND	4.44	40.0	"							U
Toluene	ND	6.29	50.0	"							U
Ethylbenzene	ND	9.40	50.0	"							U
Xylenes (total)	ND	26.2	100	"							U
Methyl tert-butyl ether	ND	11.9	200	"							U
Naphthalene	ND	14.1	200	"							U
1,2,4-Trimethylbenzene	ND	6.75	100	"							U
1,3,5-Trimethylbenzene	ND	9.33	50.0	"							U
Isopropylbenzene	ND	9.55	200	"							U
n-Propylbenzene	ND	9.89	50.0	"							U
Surrogate: 4-BFB	1940			"	2000		97.0	42.6-130			
Surrogate: 1,2-DCA-d4	2430			"	2000		122	57.3-144			
Surrogate: Dibromofluoromethane	2340			"	2000		117	45.5-130			
Surrogate: Toluene-d8	2190			"	2000		110	42.1-144			

LCS (4040239-BS1)

Benzene	1990	4.44	40.0	ug/kg	2000		99.5	81.9-125			
Toluene	2060	6.29	50.0	"	2000		103	80-125			
Surrogate: 4-BFB	1930			"	2000		96.5	42.6-130			
Surrogate: 1,2-DCA-d4	2280			"	2000		114	57.3-144			
Surrogate: Dibromofluoromethane	2200			"	2000		110	45.5-130			
Surrogate: Toluene-d8	2260			"	2000		113	42.1-144			

Matrix Spike (4040239-MS1)

Source: P4D0142-01

Benzene	7060	44.4	400	ug/kg dry	2450	4390	109	68.5-125			D
Toluene	3410	62.9	500	"	2450	832	105	70.3-125			D
Surrogate: 4-BFB	2710			"	2450		111	42.6-130			D
Surrogate: 1,2-DCA-d4	2460			"	2450		100	57.3-144			D
Surrogate: Dibromofluoromethane	2460			"	2450		100	45.5-130			D
Surrogate: Toluene-d8	2590			"	2450		106	42.1-144			D

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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 04/19/04 16:53

Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040239: Prepared 04/07/04 Using EPA 5035

Matrix Spike Dup (4040239-MSD1)

Source: P4D0142-01

Benzene	6570	44.4	400 ug/kg dry		2450	4390	89.0	68.5-125	7.19	25	D
Toluene	3410	62.9	500	"	2450	832	105	70.3-125	0.00	25	D
Surrogate: 4-BFB	2750			"	2450		112	42.6-130			D
Surrogate: 1,2-DCA-d4	2510			"	2450		102	57.3-144			D
Surrogate: Dibromofluoromethane	2690			"	2450		110	45.5-130			D
Surrogate: Toluene-d8	2560			"	2450		104	42.1-144			D

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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
04/19/04 16:53

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040347: Prepared 04/09/04 Using EPA 3550

Blank (4040347-BLK1)

Acenaphthene	ND	3.30	13.4	ug/kg							U
Acenaphthylene	ND	3.30	13.4	"							U
Anthracene	ND	3.30	13.4	"							U
Benzo (a) anthracene	ND	3.30	13.4	"							U
Benzo (a) pyrene	ND	3.30	13.4	"							U
Benzo (b) fluoranthene	ND	3.30	13.4	"							U
Benzo (ghi) perylene	ND	3.30	13.4	"							U
Benzo (k) fluoranthene	ND	3.30	13.4	"							U
Chrysene	ND	3.30	13.4	"							U
Dibenzo (a,h) anthracene	ND	3.30	13.4	"							U
Fluoranthene	ND	3.30	13.4	"							U
Fluorene	ND	3.30	13.4	"							U
Indeno (1,2,3-cd) pyrene	ND	3.30	13.4	"							U
Naphthalene	ND	3.30	13.4	"							U
Phenanthrene	ND	3.30	13.4	"							U
Pyrene	ND	3.30	13.4	"							U
Surrogate: Fluorene-d10	74.1			"	83.3		89.0	40-150			
Surrogate: Pyrene-d10	80.1			"	83.3		96.2	40-150			
Surrogate: Benzo (a) pyrene-d12	79.5			"	83.3		95.4	40-150			

LCS (4040347-BS1)

Acenaphthene	139	3.30	13.4	ug/kg	167		83.2	33-139			
Benzo (a) pyrene	162	3.30	13.4	"	167		97.0	45-149			
Pyrene	150	3.30	13.4	"	167		89.8	39-138			
Surrogate: Fluorene-d10	75.7			"	83.3		90.9	40-150			
Surrogate: Pyrene-d10	80.3			"	83.3		96.4	40-150			
Surrogate: Benzo (a) pyrene-d12	79.8			"	83.3		95.8	40-150			

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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EnviroLogic Resources, Inc.
P.O. Box 80762
Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.003
Project Manager: Tom Calabrese

Reported:
04/19/04 16:53

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040347: Prepared 04/09/04 Using EPA 3550

Matrix Spike (4040347-MS1)

Source: P4D0107-06

Acenaphthene	165	3.30	13.4 ug/kg dry		205	ND	80.5	33-139			
Benzo (a) pyrene	199	3.30	13.4	"	205	ND	97.1	45-149			
Pyrene	182	3.30	13.4	"	205	ND	88.8	39-138			
<i>Surrogate: Fluorene-d10</i>	<i>90.5</i>			"	<i>103</i>		<i>87.9</i>	<i>40-150</i>			
<i>Surrogate: Pyrene-d10</i>	<i>96.0</i>			"	<i>103</i>		<i>93.2</i>	<i>40-150</i>			
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>95.2</i>			"	<i>103</i>		<i>92.4</i>	<i>40-150</i>			

Matrix Spike Dup (4040347-MSD1)

Source: P4D0107-06

Acenaphthene	168	3.30	13.4 ug/kg dry		205	ND	82.0	33-139	1.80	60	
Benzo (a) pyrene	198	3.30	13.4	"	205	ND	96.6	45-149	0.504	60	
Pyrene	188	3.30	13.4	"	205	ND	91.7	39-138	3.24	60	
<i>Surrogate: Fluorene-d10</i>	<i>95.5</i>			"	<i>103</i>		<i>92.7</i>	<i>40-150</i>			
<i>Surrogate: Pyrene-d10</i>	<i>104</i>			"	<i>103</i>		<i>101</i>	<i>40-150</i>			
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>99.2</i>			"	<i>103</i>		<i>96.3</i>	<i>40-150</i>			

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EnviroLogic Resources, Inc.
 P.O. Box 80762
 Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.003
 Project Manager: Tom Calabrese

Reported:
 04/19/04 16:53

Percent Dry Weight (Solids) per Standard Methods - Quality Control
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4040273: Prepared 04/07/04 Using Dry Weight

Duplicate (4040273-DUP1)						Source: P4D0112-03					
% Solids	65.5	1.00	1.00	% by Weight		65.7			0.305	20	
Duplicate (4040273-DUP2)						Source: P4D0112-05					
% Solids	67.3	1.00	1.00	% by Weight		67.0			0.447	20	
Duplicate (4040273-DUP3)						Source: P4D0112-09					
% Solids	63.2	1.00	1.00	% by Weight		63.0			0.317	20	
Duplicate (4040273-DUP4)						Source: P4D0114-02					
% Solids	90.0	1.00	1.00	% by Weight		89.8			0.222	20	
Duplicate (4040273-DUP5)						Source: P4D0124-01					
% Solids	90.8	1.00	1.00	% by Weight		90.7			0.110	20	

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Notes and Definitions

- D Data reported from a preparation or analytical dilution.
- D-17 Detected hydrocarbons in the diesel range do not have a distinct diesel pattern and may be due to heavily weathered diesel or possibly biogenic interference.
- J Estimated value.
- Q-01 The matrix spike recovery, and/or RPD, for this QC sample is outside of established control limits. Failure of a matrix spike QC sample does not represent an out-of-control condition for the batch.
- Q-14 The matrix spike recovery, and/or RPD, for this QC sample is outside of control limits due to a non-homogeneous sample matrix.
- R-03 The reporting limit for this analyte was raised due to matrix interference.
- R-05 Reporting limits raised due to dilution necessary for analysis. Sample contains high levels of reported analyte, non-target analyte, and/or matrix interference.
- S-01 The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interferences.
- S-09 Surrogate recovery is outside control limits due to matrix interference.
- U Analyte included in the analysis but not detected.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

North Creek Analytical - Portland

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