

August 12, 2004
10077.004

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

VIA Email/First Class

Attention: Anna Coates

**Subject: Technical Memorandum
QUARTERLY GROUND-WATER MONITORING
SECOND QUARTER 2004 – 3rd ROUND
Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon
DEQ ECSI File #2277**

Dear Ms. Coates:

This technical memorandum presents the results of the Second Quarter 2004 ground-water monitoring completed in April 2004 for the Remedial Investigation/Feasibility Study (RI/FS) at the Astoria Area-Wide Petroleum Site. The ground-water sampling was performed at the site by *EnviroLogic Resources, Inc.*, from April 12 through April 16, 2004, in accordance with the Work Plan Addendum, Phase 1 Ground Water Assessment (*EnviroLogic Resources*, 2003b). This technical memorandum presents the analytical results of the third ground-water sampling event (Second Quarter 2004). The site location is shown on Figure 1 and a site plan is shown on Figure 2.

Ground-water samples were collected and analyzed for all constituents of interest (COIs) from 37 ground-water monitoring wells during the sampling event. Ten monitoring wells containing free-phase hydrocarbons were not sampled. A total of 47 samples from 37 wells, including MW-2(M), MW-6(M), MW-7(M), MW-10(M), MW-11(M), MW-12(A) through MW-14(A), MW-16(A) through MW-24(A), MW-26(A) through MW-36(A), MW-38(A) through MW-40(A), MW-43(A), MW-45(A) through MW-48(A), and MW-1(F) were collected for laboratory analysis. Sampling methods, containers, preservatives, and holding times for each analytical method are provided in the Field Sampling Plan (Appendix A of the RI/FS Work Plan [*EnviroLogic Resources*, 2002b]). In addition, specific procedures used during the sampling event are presented in Appendix A of this document. No significant modifications were made to these methods and procedures. The locations of the monitoring wells and recovery wells are shown on Figure 3.

The following field parameters were measured as part of the quarterly monitoring event: pH, temperature, specific conductance, oxidation-reduction potential (ORP), and dissolved oxygen (DO). Ground-water sampling logs are presented in Appendix B.

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Ground-water level measurements in the near-shore monitoring wells and from the Pier 2 monitoring point were performed over as short a period of time as possible. The water level in Slip No. 2 (5.30 ft MSL) was measured to be about 0.36 feet higher than the lowest elevation measured in the near-shore wells when a correction for tides (-1.26 ft) is applied. The tide was going out at the time of measurement. Tide stages from Tongue Point, a few miles upstream on the Columbia River, were used to make the correction.

SUMMARY OF THE SECOND QUARTER 2004 SAMPLING EVENT

The measured potentiometric surface and chemical concentration data representing the key or indicator COIs for the ground-water samples collected during the quarterly sampling event are presented in the following sections.

The ground-water flow direction at the Astoria Area-Wide site continues to be generally to the northwest and toward Pier 2. The potentiometric surface is presented on Figure 3. The ground-water elevation data are presented in Table 1. The reported measurement in MW-44 was anomalous and not used in developing the potentiometric surface map. Ground-water elevations have been corrected for the presence of free product using either the measured specific gravity of the hydrocarbon in the well, or 0.87 where no well-specific density has been measured.

A total of 47 water samples were submitted for chemical analysis during this second round of sampling. This included 37 field samples, 2 field duplicates, 2 equipment blanks, and 6 trip blanks. Table 2 shows the chemicals detected and the range of concentrations observed in monitoring wells during the sampling event. Ground-water analytical results from the Second Quarter 2004 round of sampling are summarized in Tables 4 through 9. Figures 4 through 6 show the monitoring well locations along with detected concentrations of select petroleum constituents. Laboratory analytical data sheets, QA/QC data, the data validation report, and chain-of-custody forms for this ground-water sampling event are presented in Appendix C. Data have been qualified where detections in blanks (e.g., laboratory method blanks or equipment blanks) affect the reported analytical result. No data were rejected as a result of the data validation.

The depth to product, product thickness, and depth to water are measured monthly using an interface probe. The free-phase product measurement data through the Second Quarter 2004 is included in Table 1. Monitoring-wells MW-1(M), MW-3(M), MW-4(M), MW-8(M), MW-9(M), MW-15(A), MW-37(A), MW-41(A), MW-42(A), and MW-44(A) contain measurable product. The product thickness in the wells varies month to month and product is pumped out of these wells on a monthly basis. The volume of product recovered from these monitoring wells through May 2004 is presented in Table 10.

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NEXT MONITORING EVENT

In accordance with the approved ground-water monitoring program, the next (4th Round) quarterly ground-water monitoring event was performed in July 2004. The analytical program includes analyses for total petroleum hydrocarbons, RBDM VOCs and SVOCs, and lead.

CLOSING COMMENTS

Please call me at (503)768-5121 if you have any questions or comments regarding this quarterly monitoring report.

Sincerely,
EnviroLogic Resources, Inc.

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

cc: Distribution list attached

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APPENDICES

- Appendix A Methods and Procedures
- Appendix B Ground-Water Sampling Logs
- Appendix C Laboratory Analytical Reports with Data Validation Reports

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.
- EnviroLogic Resources, Inc.*, 2003a, Phase 1 Soil Technical Memorandum, Remedial Investigation/Feasibility Study, Astoria Area-Wide Petroleum Site, Astoria, Oregon: consultant report dated January 30, 2003.
- EnviroLogic Resources, Inc.*, 2003b, Work Plan Addendum, Phase 1 Ground Water Assessment, Remedial Investigation/Feasibility Study, Astoria Area-Wide Petroleum Site, Astoria, Oregon: consultant report dated July 2, 2003.
- EnviroLogic Resources, Inc.*, 2003c, Work Plan Addendum, Phase 2 Soil Characterization, Remedial Investigation/Feasibility Study, Astoria Area-Wide Petroleum Site, Astoria, Oregon: consultant report dated July 28, 2003.
- Oregon Department of Environmental Quality, 2003, Risk-based decision making for the remediation of petroleum contaminated sites: DEQ Guidance issued September 22, 2003.

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**ASTORIA AREA-WIDE PETROLEUM SITE
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-

TABLES

**TABLE 1
GROUND-WATER MEASUREMENTS**

**Astoria Area-Wide Petroleum Site
Astoria, Oregon**

Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-1(F)	10/13/2003	1142	1.5	31.71	np	23.44	0	8.27		
MW-1(F)	10/22/2003	820	0.62	31.71	np	23.87	0	7.84		
MW-1(F)	11/12/2003	1130	0.56	31.71	np	23.03	0	8.68		Iron
MW-1(F)	12/16/2003	1358	0.34	31.71	np	17.25	0	14.46		
MW-1(F)	1/11/2004	1628	4.26	31.71	np	16.33	0	15.38		Iron
MW-1(F)	1/15/2004	800	3.86	31.71	np	16.21	0	15.50		Iron
MW-1(F)	2/12/2004	945	-2.53	31.71	np	15.61	0	16.10		Iron
MW-1(F)	3/18/2004	1355	1.23	31.71	np	17.82	0	13.89		
MW-1(F)	4/12/2004	1105	-2.84	31.71	np	18.2	0	13.51		
MW-1(F)	4/15/2004	730	1.78	31.71	np	18.36	0	13.35		
MW-1(F)	5/19/2004	1307	1.86	31.71	np	19.98	0	11.73		
MW-1(M)	8/28/2002	1151	-1.99	14.53	9.61	10.08	0.47	4.86	18.27	
MW-1(M)	9/12/2002	1029	-2.84	14.53	9.34	9.88	0.54	5.12		
MW-1(M)	9/13/2002	1536	1.12	14.53	9.13	9.34	0.21	5.37		
MW-1(M)	10/11/2002	1141	-1.52	14.53	9.49	9.92	0.43	4.98	19.41	
MW-1(M)	11/15/2002	1118	3.51	14.53	7.11	7.19	0.08	7.41		
MW-1(M)	12/13/2002	841	4.39	14.53	6.54	6.57	0.03	7.99		
MW-1(M)	1/14/2003	1117	3.45	14.53	6.79	6.81	0.02	7.74		
MW-1(M)	2/12/2003	1126	2.12	14.53	7.55	7.56	0.01	6.98		
MW-1(M)	3/13/2003	1018	3.86	14.53	6.37	6.45	0.08	8.15		
MW-1(M)	4/14/2003	1147	4.17	14.53	np	6.57	0	7.96		Product seep visible
MW-1(M)	5/14/2003	1054	2.59	14.53	8.67	8.7	0.03	5.86		Product seep visible
MW-1(M)	6/17/2003	1431	2.05	14.53	9.19	9.25	0.06	5.33		Product seep visible
MW-1(M)	7/14/2003	1215	0.11	14.53	9.56	9.71	0.15	4.95		Product seep visible
MW-1(M)	8/13/2003	1350	3	14.53	9.31	9.32	0.01	5.22		Product seep visible
MW-1(M)	9/12/2003	1432	3.21	14.53	np	8.10	0	6.43		Product seep visible
MW-1(M)	10/13/2003	846	-2.52	14.53	9.31	9.33	0.02	5.22		Product seep visible
MW-1(M)	11/12/2003	1445	3.39	14.53	np	6.96	0	7.57		Product seep visible
MW-1(M)	12/16/2003	943	1.46	14.53	7.58	7.59	0.01	6.95		Product seep visible
MW-1(M)	1/11/2004	1350	4.01	14.53	np	6.58	0	7.95	Product globules in bai	Product seep visible
MW-1(M)	2/12/2004	1423	-2.19	14.53	8.64	8.65	0.01	5.89		Product seep visible
MW-1(M)	3/18/2004	930	3.9	14.53	np	7.60	0	6.93	Strong odor	Product seep slt visible
MW-1(M)	4/12/2004	902	0.43	14.53	7.56	7.57	0.01	6.97		Product seep visible
MW-2(M)	8/28/2002	1122	-3.21	15.00	np	8.65	0	6.35	17.9	
MW-2(M)	9/12/2002	1015	-2.84	15.00	np	8.69	0	6.31		
MW-2(M)	9/13/2002	1520	1.12	15.00	np	9.7	0	5.30		
MW-2(M)	10/11/2002	1036	-2.45	15.00	np	8.95	0	6.05	19.03	
MW-2(M)	11/15/2002	930	2.73	15.00	np	8.55	0	6.45		
MW-2(M)	12/13/2002	814	4.26	15.00	np	8.08	0	6.92		
MW-2(M)	1/14/2003	1039	3.45	15.00	np	6.58	0	8.42		
MW-2(M)	2/12/2003	1042	2.12	15.00	np	6.47	0	8.53		
MW-2(M)	3/13/2003	940	3.86	15.00	np	5.91	0	9.09		
MW-2(M)	4/14/2003	1103	4.35	15.00	np	6.02	0	8.98		
MW-2(M)	5/14/2003	1008	1.15	15.00	np	6.91	0	8.09		

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Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-2(M)	6/17/2003	1354	0.45	15.00	np	7.51	0	7.49		
MW-2(M)	7/14/2003	1132	0.11	15.00	np	8.02	0	6.98		
MW-2(M)	8/13/2003	1324	1.76	15.00	np	8.34	0	6.66		
MW-2(M)	9/12/2003	1318	2.26	15.00	np	8.58	0	6.42		
MW-2(M)	10/13/2003	852	-2.52	15.00	np	8.62	0	6.38		
MW-2(M)	10/15/2003	1300	2.26	15.00	np	8.62	0	6.38		
MW-2(M)	11/12/2003	1432	3.39	15.00	np	8.29	0	6.71		
MW-2(M)	12/16/2003	910	2.67	15.00	np	6.86	0	8.14		
MW-2(M)	1/11/2004	1348	4.01	15.00	np	6.27	0	8.73		
MW-2(M)	1/12/2004	1200	-0.09	15.00	np	6.39	0	8.61		
MW-2(M)	2/12/2004	1418	-2.19	15.00	np	6.14	0	8.86		
MW-2(M)	3/18/2004	1023	3.9	15.00	np	6.66	0	8.34		
MW-2(M)	4/12/2004	944	-1.26	15.00	np	6.98	0	8.02		
MW-2(M)	4/14/2004	1730	-2.47	15.00	np	7.07	0	7.93		
MW-3(M)	8/28/2002	1345	1.05	15.42	9.45	10.17	0.72	5.87	17.51	
MW-3(M)	9/12/2002	1025	-2.84	15.42	9.42	10.12	0.7	5.90		
MW-3(M)	9/13/2002	1547	2.52	15.42	9.51	9.88	0.37	5.86		
MW-3(M)	10/11/2002	1155	-1.52	15.42	9.61	10.67	1.06	5.66	18.44	
MW-3(M)	11/15/2002	1134	3.51	15.42	9.07	9.7	0.63	6.26		
MW-3(M)	12/13/2002	906	4.39	15.42	8.68	9.02	0.34	6.69		
MW-3(M)	1/14/2003	1130	2.16	15.42	7.54	8.15	0.61	7.80		
MW-3(M)	2/12/2003	1142	0.66	15.42	7.61	8.18	0.57	7.73		
MW-3(M)	3/13/2003	1037	2.91	15.42	7.01	7.91	0.9	8.29		
MW-3(M)	4/14/2003	1207	4.17	15.42	7.06	8.29	1.23	8.19		
MW-3(M)	5/14/2003	1101	2.59	15.42	7.78	8.94	1.16	7.48		
MW-3(M)	6/17/2003	1500	2.05	15.42	8.42	9.15	0.73	6.90		
MW-3(M)	7/14/2003	1226	0.11	15.42	8.86	9.57	0.71	6.46		
MW-3(M)	8/13/2003	1403	3	15.42	9.06	9.64	0.58	6.28		
MW-3(M)	9/12/2003	1449	3.21	15.42	9.26	9.59	0.33	6.11		
MW-3(M)	10/13/2003	921	-2.52	15.42	9.35	9.79	0.44	6.01		
MW-3(M)	10/23/2003	939	2.62	15.42	9.15	9.6	0.45	6.21		
MW-3(M)	11/12/2003	1438	3.39	15.42	8.99	9.16	0.17	6.41		
MW-3(M)	12/16/2003	1003	1.46	15.42	7.76	8.21	0.45	7.60		
MW-3(M)	1/11/2004	1359	4.01	15.42	7.19	8.09	0.9	8.11		
MW-3(M)	2/12/2004	1437	-0.76	15.42	7.32	8.79	1.47	7.90		
MW-3(M)	3/18/2004	925	2.49	15.42	7.77	8.51	0.74	7.55		
MW-3(M)	4/12/2004	915	0.43	15.42	7.95	8.58	0.63	7.38		
MW-3(M)	5/19/2004	1054	-1.19	15.42	8.55	9.35	0.8	6.76		
MW-4(M)	8/28/2002	1302	-0.5	15.5	9.16	9.45	0.29	6.30	20.59	
MW-4(M)	9/12/2002	1042	-3.1	15.5	9.21	9.58	0.37	6.24		
MW-4(M)	9/13/2002	1544	1.12	15.5	9.26	9.39	0.13	6.22		
MW-4(M)	10/11/2002	1122	-2.45	15.5	9.46	9.77	0.31	6.00	21.11	
MW-4(M)	11/15/2002	1108	3.51	15.5	9.08	9.12	0.04	6.41		
MW-4(M)	12/13/2002	850	4.39	15.5	np	8.66	0	6.84		
MW-4(M)	1/14/2003	1106	3.45	15.5	np	7.18	0	8.32		

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MW-4(M)	2/12/2003	1112	2.12	15.5	6.95	7.92	0.97	8.42		
MW-4(M)	3/13/2003	1007	3.86	15.5	6.46	7.49	1.03	8.91		
MW-4(M)	4/14/2003	1137	4.17	15.5	6.28	8.89	2.61	8.88		
MW-4(M)	5/14/2003	1126	2.59	15.5	7.18	9.48	2.3	8.02		
MW-4(M)	6/17/2003	1452	2.05	15.5	7.98	8.78	0.8	7.42		
MW-4(M)	7/14/2003	1232	1.8	15.5	8.53	8.79	0.26	6.94		
MW-4(M)	8/13/2003	1303	1.76	15.5	8.87	9.14	0.27	6.59		
MW-4(M)	9/12/2003	1445	3.21	15.5	9.07	9.28	0.21	6.40		
MW-4(M)	10/13/2003	914	-2.52	15.5	9.17	9.32	0.15	6.31		
MW-4(M)	10/23/2003	918	1.04	15.5	8.95	9.05	0.1	6.54		
MW-4(M)	11/12/2003	1501	3.39	15.5	np	8.85	0	6.65		
MW-4(M)	12/16/2003	918	2.67	15.5	np	7.45	0	8.05		
MW-4(M)	1/11/2004	1344	4.01	15.5	np	6.86	0	8.64		Product globules in baile
MW-4(M)	2/12/2004	1408	-2.19	15.5	6.45	8.69	2.24	8.76		Odor
MW-4(M)	3/18/2004	1010	3.9	15.5	6.97	9.16	2.19	8.25		
MW-4(M)	4/12/2004	919	0.43	15.5	7.34	8.81	1.47	7.97		
MW-4(M)	5/19/2004	1055	-1.19	15.5	8.06	8.77	0.71	7.35		
MW-6(M)	8/28/2002	1140	-1.99	13.78	np	7.71	0	6.07	18.47	
MW-6(M)	9/12/2002	926	-1.83	13.78	np	8.25	0	5.53		
MW-6(M)	9/13/2002	1515	1.12	13.78	np	7.71	0	6.07		
MW-6(M)	10/11/2002	1012	-2.51	13.78	np	7.92	0	5.86	19.06	
MW-6(M)	11/15/2002	921	2.73	13.78	np	7.41	0	6.37		
MW-6(M)	12/13/2002	802	4.26	13.78	np	8.85	0	4.93		
MW-6(M)	1/14/2003	1028	3.99	13.78	np	7.01	0	6.77		
MW-6(M)	2/12/2003	1031	2.12	13.78	np	6.61	0	7.17		
MW-6(M)	3/13/2003	930	4.37	13.78	np	6.93	0	6.85		
MW-6(M)	4/14/2003	1053	4.35	13.78	np	6.95	0	6.83		
MW-6(M)	5/14/2003	956	1.15	13.78	np	7.14	0	6.64		
MW-6(M)	6/17/2003	1402	0.45	13.78	np	7.12	0	6.66		
MW-6(M)	7/14/2003	1050	-1.9	13.78	np	7.47	0	6.31		
MW-6(M)	8/13/2003	1316	1.76	13.78	np	7.48	0	6.30		
MW-6(M)	9/12/2003	1312	2.26	13.78	np	7.56	0	6.22		
MW-6(M)	10/22/2003	1530	-2.21	13.78	np	7.00	0	6.78		
MW-6(M)	11/12/2003	1348	3.65	13.78	np	8.27	0	5.51		Pressure release
MW-6(M)	12/16/2003	857	2.67	13.78	np	5.86	0	7.92		
MW-6(M)	1/11/2004	1332	4.01	13.78	np	5.41	0	8.37		
MW-6(M)	1/12/2004	814	0.52	13.78	np	5.58	0	8.20		
MW-6(M)	2/12/2004	1328	-3.4	13.78	np	5.69	0	8.09		
MW-6(M)	3/18/2004	941	3.9	13.78	np	6.41	0	7.37		
MW-6(M)	4/12/2004	905	0.43	13.78	np	6.49	0	7.29		
MW-6(M)	4/13/2004	1045	-0.52	13.78	np	6.45	0	7.33		
MW-6(M)	5/19/2004	1135	0.49	13.78	np	6.95	0	6.83		
MW-7(M)	8/28/2002	1102	-3.21	14.86	np	8.31	0	6.55	18.64	
MW-7(M)	9/12/2002	900	-1.83	14.86	np	8.36	0	6.50		
MW-7(M)	9/13/2002	1455	1.12	14.86	np	8.43	0	6.43		

**TABLE 1
GROUND-WATER MEASUREMENTS**

**Astoria Area-Wide Petroleum Site
Astoria, Oregon**

Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-7(M)	10/11/2002	957	-2.51	14.86	np	8.58	0	6.28	18.93	
MW-7(M)	11/15/2002	914	2.73	14.86	np	8.57	0	6.29		
MW-7(M)	12/13/2002	754	4.26	14.86	np	7.7	0	7.16		
MW-7(M)	1/14/2003	1017	3.99	14.86	np	6.01	0	8.85		
MW-7(M)	2/12/2003	1021	3.06	14.86	np	5.96	0	8.90		
MW-7(M)	3/13/2003	920	4.37	14.86	np	5.3	0	9.56		
MW-7(M)	4/14/2003	1044	4.35	14.86	np	5.5	0	9.36		
MW-7(M)	5/14/2003	947	1.15	14.86	np	6.42	0	8.44		
MW-7(M)	6/17/2003	1347	0.45	14.86	np	7.13	0	7.73		
MW-7(M)	7/14/2003	1124	-1.9	14.86	np	7.66	0	7.20		
MW-7(M)	8/13/2003	1311	1.76	14.86	np	8.03	0	6.83		
MW-7(M)	9/12/2003	1307	2.26	14.86	np	8.27	0	6.59		
MW-7(M)	10/13/2003	852	-2.52	14.86	np	8.30	0	6.56		
MW-7(M)	10/13/2003	1547	2.54	14.86	np	8.27	0	6.59		
MW-7(M)	11/12/2003	1356	3.65	14.86	np	7.96	0	6.90		
MW-7(M)	12/16/2003	903	2.67	14.86	np	6.41	0	8.45		
MW-7(M)	1/11/2004	1335	4.01	14.86	np	5.77	0	9.09		
MW-7(M)	1/12/2004	940	-1.27	14.86	np	5.81	0	9.05		
MW-7(M)	2/12/2004	1333	-3.4	14.86	np	5.53	0	9.33		
MW-7(M)	3/18/2004	946	3.9	14.86	np	6.23	0	8.63		
MW-7(M)	4/12/2004	931	-1.26	14.86	np	6.51	0	8.35		
MW-7(M)	4/12/2004	1725	-1.44	14.86	np	6.63	0	8.23		
MW-7(M)	5/19/2004	1139	0.49	14.86	np	7.20	0	7.66		
MW-8(M)	8/28/2002	1326	-0.5	15.23	9.69	11.08	1.39	5.37	18.89	
MW-8(M)	9/12/2002	1036	-3.1	15.23	9.6	10.85	1.25	5.48		
MW-8(M)	9/13/2002	1540	1.12	15.23	9.7	10.41	0.71	5.44		
MW-8(M)	10/11/2002	1211	-1.52	15.23	9.89	10.91	1.02	5.22	18.74	
MW-8(M)	11/15/2002	1126	3.51	15.23	8.57	9.26	0.69	6.58		
MW-8(M)	12/13/2002	859	4.39	15.23	8.04	8.81	0.77	7.10		
MW-8(M)	1/14/2003	1123	3.45	15.23	8.2	8.53	0.33	6.99		
MW-8(M)	2/12/2003	1133	0.66	15.23	8.27	8.75	0.48	6.90		
MW-8(M)	3/13/2003	1029	3.86	15.23	np	8.22	0	7.01		
MW-8(M)	4/14/2003	1158	4.17	15.23	np	7.72	0	7.51		
MW-8(M)	5/14/2003	1042	2.59	15.23	8.71	9.45	0.74	6.43		
MW-8(M)	6/17/2003	1440	2.05	15.23	8.91	9.77	0.86	6.22		
MW-8(M)	7/14/2003	1221	0.11	15.23	9.32	9.79	0.47	5.85		
MW-8(M)	8/13/2003	1357	3	15.23	9.36	9.63	0.27	5.84		
MW-8(M)	9/12/2003	1437	3.21	15.23	9.19	9.41	0.22	6.01		
MW-8(M)	10/13/2003	932	-1.55	15.23	9.57	9.92	0.35	5.62		
MW-8(M)	10/23/2003	836	1.04	15.23	9.43	9.86	0.43	5.75		
MW-8(M)	11/12/2003	1442	3.39	15.23	8.81	8.86	0.05	6.41		
MW-8(M)	12/16/2003	954	1.46	15.23	np	8.71	0	6.52		
MW-8(M)	1/11/2004	1355	4.01	15.23	np	7.55	0	7.68		Sheen in bailer
MW-8(M)	2/12/2004	1430	-2.19	15.23	8.37	8.48	0.11	6.85		
MW-8(M)	3/18/2004	913	2.49	15.23	8.44	8.53	0.09	6.78		
MW-8(M)	4/12/2004	907	0.43	15.23	8.43	8.46	0.03	6.80		

**TABLE 1
GROUND-WATER MEASUREMENTS**

**Astoria Area-Wide Petroleum Site
Astoria, Oregon**

Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-8(M)	5/19/2004	1112	-1.19	15.23	9.04	9.2	0.16	6.17		
MW-9(M)	8/28/2002	1357	1.05	15.42	9.35	13.21	3.86	5.58	19.12	
MW-9(M)	9/12/2002	1049	-3.1	15.42	9.3	12.08	2.78	5.77		
MW-9(M)	9/13/2002	1552	1.12	15.42	9.61	10.21	0.6	5.73		
MW-9(M)	10/11/2002	1226	-1.52	15.42	9.75	10.92	1.17	5.52	19.47	
MW-9(M)	11/15/2002	1141	2.61	15.42	9.16	10.28	1.12	6.12		
MW-9(M)	12/13/2002	915	4.39	15.42	8.78	9.79	1.01	6.51		
MW-9(M)	1/14/2003	1137	2.16	15.42	7.76	8.55	0.79	7.56		
MW-9(M)	2/12/2003	1150	0.66	15.42	7.85	8.85	1	7.44		
MW-9(M)	3/13/2003	1045	2.91	15.42	7.35	8.21	0.86	7.96		
MW-9(M)	4/14/2003	1217	4.17	15.42	7.33	8.9	1.57	7.89		
MW-9(M)	5/15/2003	1116	2.59	15.42	8.11	10.3	2.19	7.03		
MW-9(M)	6/17/2003	1508	2.05	15.42	8.44	10.65	2.21	6.70		
MW-9(M)	7/14/2003	1241	1.8	15.42	9.00	9.94	0.94	6.30		
MW-9(M)	8/13/2003	1409	3	15.42	9.20	9.8	0.6	6.14		
MW-9(M)	9/12/2003	1456	3.21	15.42	9.38	9.9	0.52	5.97		
MW-9(M)	10/13/2003	939	-1.55	15.42	9.46	10.18	0.72	5.87		
MW-9(M)	10/23/2003	956	2.62	15.42	9.24	9.92	0.68	6.09		
MW-9(M)	11/12/2003	1456	3.39	15.42	9.15	9.49	0.34	6.23		
MW-9(M)	12/16/2003	1009	1.46	15.42	8.02	8.19	0.17	7.38		
MW-9(M)	1/11/2004	1407	4.01	15.42	7.52	7.66	0.14	7.88		
MW-9(M)	2/12/2004	1444	-0.76	15.42	7.76	8.69	0.93	7.54		
MW-9(M)	3/18/2004	919	2.49	15.42	8.07	8.93	0.86	7.24		
MW-9(M)	4/12/2004	912	0.43	15.42	8.21	8.83	0.62	7.13		
MW-9(M)	5/19/2004	1108	-1.19	15.42	8.73	9.83	1.1	6.55		
MW-10(M)	8/28/2002	1430	1.05	16.32	np	11.23	0	5.09	19.43	
MW-10(M)	9/12/2002	1005	-2.84	16.32	np	11.1	0	5.22		
MW-10(M)	9/13/2002	1526	1.12	16.32	np	11.13	0	5.19		
MW-10(M)	10/11/2002	1055	-2.45	16.32	np	11.22	0	5.10	19.83	
MW-10(M)	11/15/2002	942	3.5	16.32	np	10.63	0	5.69		
MW-10(M)	12/13/2002	821	4.26	16.32	np	10.21	0	6.11		
MW-10(M)	1/14/2003	1048	3.45	16.32	np	9.62	0	6.70		
MW-10(M)	2/12/2003	1051	2.12	16.32	np	9.91	0	6.41		
MW-10(M)	3/13/2003	948	3.86	16.32	np	9.4	0	6.92		
MW-10(M)	4/14/2003	1118	4.35	16.32	np	9.1	0	7.22		
MW-10(M)	5/15/2003	1019	1.15	16.32	np	10.38	0	5.94		
MW-10(M)	6/17/2003	1413	0.45	16.32	np	10.41	0	5.91		
MW-10(M)	7/14/2003	1141	0.11	16.32	np	10.75	0	5.57		
MW-10(M)	8/13/2003	1333	3	16.32	np	10.77	0	5.55		
MW-10(M)	9/12/2003	1348	3.2	16.32	np	10.95	0	5.37		
MW-10(M)	10/13/2003	950	-1.55	16.32	np	10.88	0	5.44		
MW-10(M)	10/15/2003	1500	3.78	16.32	np	10.85	0	5.47		
MW-10(M)	11/12/2003	1334	3.65	16.32	np	10.67	0	5.65		
MW-10(M)	12/16/2003	1027	1.46	16.32	np	9.68	0	6.64		
MW-10(M)	1/11/2004	1410	4.01	16.32	np	9.32	0	7.00		

**TABLE 1
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**Astoria Area-Wide Petroleum Site
Astoria, Oregon**

Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-10(M)	1/13/2004	1050	-1.76	16.32	np	9.55	0	6.77		
MW-10(M)	2/12/2004	1305	-3.4	16.32	np	9.95	0	6.37		
MW-10(M)	3/18/2004	856	2.49	16.32	np	10.17	0	6.15		Iron
MW-10(M)	4/12/2004	910	0.43	16.32	np	10.12	0	6.20		
MW-10(M)	4/13/2004	820	2.99	16.32	np	10.19	0	6.13		
MW-10(M)	5/19/2004	1124	-1.19	16.32	np	10.56	0	5.76		
MW-11(M)	8/28/2002	1420	1.05	16.34	np	10.87	0	5.47	19.81	
MW-11(M)	9/12/2002	1000	-2.84	16.34	np	10.8	0	5.54		
MW-11(M)	9/13/2002	1531	1.12	16.34	np	10.83	0	5.51		
MW-11(M)	10/11/2002	1108	-2.45	16.34	np	11.01	0	5.33	19.83	
MW-11(M)	11/15/2002	949	3.5	16.34	np	10.37	0	5.97		
MW-11(M)	12/13/2002	829	4.26	16.34	np	9.94	0	6.40		
MW-11(M)	1/14/2003	1057	3.45	16.34	np	9.08	0	7.26		
MW-11(M)	2/12/2003	1058	2.12	16.34	np	9.25	0	7.09		
MW-11(M)	3/13/2003	958	3.86	16.34	np	8.71	0	7.63		
MW-11(M)	4/14/2003	1127	4.35	16.34	np	8.86	0	7.48		
MW-11(M)	5/15/2003	1028	1.15	16.34	np	9.79	0	6.55		
MW-11(M)	6/17/2003	1422	0.45	16.34	np	10.02	0	6.32		
MW-11(M)	7/14/2003	1149	0.11	16.34	np	10.39	0	5.95		
MW-11(M)	8/13/2003	1340	3	16.34	np	10.41	0	5.93		
MW-11(M)	9/12/2003	1353	3.2	16.34	np	10.6	0	5.74		
MW-11(M)	10/13/2003	956	-1.55	16.34	np	10.72	0	5.62		
MW-11(M)	10/15/2003	1720	2.7	16.34	np	10.41	0	5.93		
MW-11(M)	11/12/2003	1341	3.65	16.34	np	10.29	0	6.05		Slight Odor
MW-11(M)	12/16/2003	1019	1.46	16.34	np	9.27	0	7.07		
MW-11(M)	1/11/2004	1414	4.01	16.34	np	8.73	0	7.61		
MW-11(M)	1/13/2004	1235	-0.61	16.34	np	9.21	0	7.13		slight sheen
MW-11(M)	2/12/2004	1311	-3.4	16.34	np	9.43	0	6.91		
MW-11(M)	3/18/2004	903	2.49	16.34	np	9.48	0	6.86		
MW-11(M)	4/12/2004	948	-1.26	16.34	np	9.6	0	6.74		
MW-11(M)	4/13/2004	945	1.05	16.34	np	9.53	0	6.81		
MW-11(M)	5/19/2004	1120	-1.19	16.34	np	10.2	0	6.14		
MW-12(A)	10/13/2003	1152	1.5	30.58	np	20.00	0	10.58	25.38	
MW-12(A)	10/22/2003	955	3.54	30.58	np	19.61	0	10.97		
MW-12(A)	11/12/2003	1116	0.56	30.58	np	18.87	0	11.71		
MW-12(A)	12/16/2003	1345	0.34	30.58	np	15.44	0	15.14		
MW-12(A)	1/11/2004	1616	4.26	30.58	np	14.76	0	15.82		
MW-12(A)	1/15/2004	940	0.81	30.58	np	14.70	0	15.88		
MW-12(A)	2/12/2004	932	-2.53	30.58	np	14.26	0	16.32		
MW-12(A)	3/18/2004	1340	1.23	30.58	np	15.27	0	15.31		
MW-12(A)	4/12/2004	1208	-4.16	30.58	np	15.85	0	14.73		
MW-12(A)	4/16/2004	725	-1.63	30.58	np	16.00	0	14.58		
MW-12(A)	5/19/2004	1253	1.86	30.58	np	17.04	0	13.54		
MW-13(A)	10/13/2003	1157	1.5	31.36	np	22.68	0	8.68	26.42	

**TABLE 1
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**Astoria Area-Wide Petroleum Site
Astoria, Oregon**

Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-13(A)	10/22/2003	1130	3.62	31.36	np	22.34	0	9.02		Odor
MW-13(A)	11/12/2003	1122	0.56	31.36	np	22.14	0	9.22		
MW-13(A)	12/16/2003	1352	0.34	31.36	np	18.41	0	12.95		
MW-13(A)	1/11/2004	1620	4.26	31.36	np	17.39	0	13.97		
MW-13(A)	1/15/2004	1130	-1.98	31.36	np	17.28	0	14.08		
MW-13(A)	2/12/2004	937	-2.53	31.86	np	16.71	0	15.15		
MW-13(A)	3/18/2004	1345	1.23	31.86	np	17.83	0	14.03		
MW-13(A)	4/12/2004	1210	-4.16	31.86	np	18.45	0	13.41		
MW-13(A)	4/16/2004	927	1.51	31.86	np	18.82	0	13.04		
MW-13(A)	5/19/2004	1255	1.86	31.86	np	19.85	0	12.01		
MW-14(A)	10/13/2003	1203	1.5	23.39	np	15.06	0	8.33	18.81	
MW-14(A)	10/21/2003	1645	-1.5	23.39	np	14.7	0	8.69		
MW-14(A)	11/12/2003	1056	0.56	23.39	np	14.55	0	8.84		Iron
MW-14(A)	12/16/2003	1336	0.34	23.39	np	12.01	0	11.38		
MW-14(A)	1/11/2004	1624	4.26	23.39	np	11.47	0	11.92		
MW-14(A)	1/15/2004	1250	-2.74	23.39	np	11.41	0	11.98		Iron
MW-14(A)	2/12/2004	1106	-3.59	23.39	np	11.07	0	12.32		
MW-14(A)	3/18/2004	1226	4.37	23.39	np	11.57	0	11.82		
MW-14(A)	4/12/2004	1205	-4.16	23.39	np	11.88	0	11.51		
MW-14(A)	4/16/2004	815	-0.11	23.39	np	11.97	0	11.42		
MW-14(A)	5/19/2004	1250	1.86	23.39	np	12.5	0	10.89		
MW-15(A)	10/13/2003	1116	-0.1	16.95	np	9.08	0	7.87	14.81	
MW-15(A)	10/20/2003	1340	0.06	16.95	np	8.87	0	8.08		
MW-15(A)	11/12/2003	1026	-0.65	16.95	np	8.58	0	8.37		
MW-15(A)	12/16/2003	1239	-0.3	16.95	np	6.35	0	10.60		
MW-15(A)	1/11/2004	1529	4.58	16.95	5.77	5.8	0.03	11.18		
MW-15(A)	2/12/2004	1058	-3.59	16.95	5.41	5.9	0.49	11.47		Strong Odor
MW-15(A)	3/18/2004	1230	4.37	16.95	6.1	8.04	1.94	10.56		
MW-15(A)	4/12/2004	1153	-4.16	16.95	6.5	7.26	0.76	10.34		
MW-15(A)	5/19/2004	1403	2.56	16.95	7.25	7.95	0.7	9.60		Very thick, dark, strong c
MW-16(A)	10/13/2003	1111	-0.1	16.48	np	8.59	0	7.89	15.21	
MW-16(A)	10/20/2003	1510	-0.31	16.48	np	8.39	0	8.09		
MW-16(A)	11/12/2003	1035	0.56	16.48	np	8.18	0	8.30		
MW-16(A)	12/16/2003	1224	-0.19	16.48	np	6.51	0	9.97		possible sheen
MW-16(A)	1/11/2004	1523	4.58	16.48	np	6.05	0	10.43		iron
MW-16(A)	1/19/2004	930	5.44	16.48	np	6.04	0	10.44		
MW-16(A)	2/12/2004	1110	-3.59	16.48	np	5.81	0	10.67		
MW-16(A)	3/18/2004	1221	4.37	16.48	np	6.33	0	10.15		
MW-16(A)	4/12/2004	1158	-4.16	16.48	np	6.63	0	9.85		
MW-16(A)	4/15/2004	850	2.95	16.48	np	6.68	0	9.80		
MW-16(A)	5/19/2004	1357	2.56	16.48	np	7.2	0	9.28		
MW-17(A)	10/13/2003	1125	-0.1	15.69	np	8.37	0	7.32	15.35	
MW-17(A)	10/17/2003	1240	1.23	15.69	np	8.31	0	7.38		

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Astoria, Oregon**

Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-17(A)	11/12/2003	1020	-0.65	15.69	np	7.88	0	7.81		
MW-17(A)	12/16/2003	1245	-0.3	15.69	np	5.7	0	9.99		
MW-17(A)	1/11/2004	1540	4.26	15.69	np	5	0	10.69		
MW-17(A)	1/19/2004	1130	4.2	15.69	np	5	0	10.69		
MW-17(A)	2/12/2004	1047	-3.59	15.69	np	4.66	0	11.03		
MW-17(A)	3/18/2004	1245	3.1	15.69	np	5.43	0	10.26		
MW-17(A)	4/12/2004	1145	-4.16	15.69	np	5.88	0	9.81		
MW-17(A)	4/15/2004	1055	3.34	15.69	np	6	0	9.69		
MW-17(A)	5/19/2004	1351	2.56	15.69	np	6.66	0	9.03		
MW-18(A)	10/13/2003	1117	-0.1	16.23	np	8.85	0	7.38	15.36	
MW-18(A)	10/21/2003	1300	0.89	16.23	np	8.58	0	7.65		
MW-18(A)	11/12/2003	1042	0.56	16.23	np	8.39	0	7.84		Possible Sheen
MW-18(A)	12/16/2003	1234	-0.3	16.23	np	6.38	0	9.85		
MW-18(A)	1/19/2004	1040	5.35	16.23	np	5.74	0	10.49		
MW-18(A)	2/12/2004	1052	-3.59	16.23	np	5.42	0	10.81		
MW-18(A)	3/18/2004	1240	3.1	16.23	np	6.1	0	10.13		
MW-18(A)	4/12/2004	1148	-4.16	16.23	np	6.55	0	9.68		
MW-18(A)	4/15/2004	1000	3.54	16.23	np	6.62	0	9.61		
MW-18(A)	5/19/2004	1355	2.56	16.23	np	7.27	0	8.96		
MW-19(A)	10/13/2003	1049	-0.1	17.98	np	10.59	0	7.39	15.3	
MW-19(A)	10/20/2003	1050	2.89	17.98	np	10.43	0	7.55		
MW-19(A)	11/12/2003	1145	1.93	17.98	np	10.18	0	7.80		
MW-19(A)	1/13/2004	1515	1.91	17.98	np	7.99	0	9.99		
MW-19(A)	2/12/2004	1122	-3.59	17.9	np	7.66	0	10.24		
MW-19(A)	3/18/2004	1210	4.37	17.9	np	8.26	0	9.64		
MW-19(A)	4/12/2004	1133	-4.16	17.9	np	8.6	0	9.30		
MW-19(A)	4/15/2004	1545	-3.71	17.9	np	8.67	0	9.23		
MW-19(A)	5/19/2004	1243	1.86	17.9	np	9.18	0	8.72		
MW-20(A)	10/13/2003	1047	-0.1	17.04	np	10.03	0	7.01	15.39	
MW-20(A)	10/20/2003	1210	1.9	17.04	np	9.88	0	7.16		
MW-20(A)	11/12/2003	1150	1.93	17.04	np	9.65	0	7.39		Iron
MW-20(A)	12/16/2003	1410	0.34	17.04	np	8.03	0	9.01		Iron
MW-20(A)	1/11/2004	1510	4.58	17.04	np	7.41	0	9.63		
MW-20(A)	1/13/2004	1630	3.15	17.04	np	7.44	0	9.60		Iron
MW-20(A)	2/12/2004	1126	-3.59	17.04	np	7.11	0	9.93		
MW-20(A)	3/18/2004	1215	4.37	17.04	np	7.7	0	9.34		Iron
MW-20(A)	4/12/2004	1128	-2.84	17.04	np	8.06	0	8.98		
MW-20(A)	4/15/2004	1642	-4.14	17.04	np	8.13	0	8.91		Iron
MW-20(A)	5/19/2004	1246	1.86	17.04	np	8.63	0	8.41		
MW-21(A)	10/13/2003	1035	-0.1	15.90	np	9.22	0	6.68	15.35	
MW-21(A)	10/20/2003	940	3.26	15.90	np	9.11	0	6.79		
MW-21(A)	11/12/2003	1156	1.93	15.90	np	8.91	0	6.99		
MW-21(A)	12/16/2003	1216	-0.19	15.90	np	7.49	0	8.41		Iron

**TABLE 1
GROUND-WATER MEASUREMENTS**

**Astoria Area-Wide Petroleum Site
Astoria, Oregon**

Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-21(A)	1/11/2004	1503	4.58	15.90	np	6.9	0	9.00		
MW-21(A)	1/13/2004	1355	0.66	15.90	np	6.89	0	9.01		
MW-21(A)	2/12/2004	1135	-3.92	15.90	np	6.66	0	9.24		
MW-21(A)	3/18/2004	1202	4.37	15.90	np	7.17	0	8.73		
MW-21(A)	4/12/2004	1138	-4.16	15.90	np	7.49	0	8.41		
MW-21(A)	4/16/2004	1115	3.53	15.90	np	7.58	0	8.32		
MW-21(A)	5/19/2004	1237	1.86	15.90	np	7.99	0	7.91		
MW-22(A)	10/13/2003	1037	-0.1	16.13	np	9.24	0	6.89	15.08	
MW-22(A)	10/16/2003	940	0.09	16.13	np	9.21	0	6.92		
MW-22(A)	11/12/2003	1203	1.93	16.13	np	8.8	0	7.33		
MW-22(A)	12/16/2003	1048	0.48	16.13	np	6.91	0	9.22		
MW-22(A)	1/19/2004	815	3.22	16.13	np	6.15	0	9.98		
MW-22(A)	3/18/2004	1157	4.37	16.13	np	6.55	0	9.58		
MW-22(A)	4/12/2004	1120	-2.84	16.13	np	6.97	0	9.16		
MW-22(A)	4/15/2004	1435	-2.62	16.13	np	7.07	0	9.06		
MW-22(A)	5/19/2004	1233	1.86	16.13	np	7.66	0	8.47		
MW-23(A)	10/13/2003	1137	1.5	16.22	np	8.86	0	7.36	14.93	
MW-23(A)	10/20/2003	1630	0.49	16.22	np	8.71	0	7.51		
MW-23(A)	11/12/2003	1013	-0.65	16.22	np	8.3	0	7.92		
MW-23(A)	12/16/2003	1250	-0.3	16.22	np	5.36	0	10.86		
MW-23(A)	1/11/2004	1543	4.26	16.22	np	4.57	0	11.65		
MW-23(A)	1/15/2004	1745	1.31	16.22	np	4.47	0	11.75		
MW-23(A)	2/12/2004	1041	-3.59	16.22	np	4.09	0	12.13		
MW-23(A)	3/18/2004	1249	3.1	16.22	np	5.13	0	11.09		
MW-23(A)	4/12/2004	1112	-2.84	16.22	np	5.69	0	10.53		
MW-23(A)	4/15/2004	1201	2.17	16.22	np	5.8	0	10.42		
MW-23(A)	5/19/2004	1349	2.56	16.22	np	6.78	0	9.44		
MW-24(A)	10/13/2003	1154	1.5	16.56	np	9.15	0	7.41	14.87	
MW-24(A)	10/21/2003	1430	-1.43	16.56	np	8.52	0	8.04		
MW-24(A)	11/12/2003	942	-0.65	16.56	np	8.17	0	8.39		
MW-24(A)	12/16/2003	1304	-0.3	16.56	np	4.45	0	12.11		
MW-24(A)	1/11/2004	1547	4.26	16.56	np	3.96	0	12.60		
MW-24(A)	1/15/2004	1630	0.29	16.56	np	3.85	0	12.71		
MW-24(A)	2/12/2004	1022	-2.53	16.56	np	4.05	0	12.51		Iron
MW-24(A)	3/18/2004	1301	3.1	16.56	np	4.96	0	11.60		
MW-24(A)	4/12/2004	1103	-2.84	16.56	np	5.65	0	10.91		
MW-24(A)	4/14/2004	1500	-3.92	16.56	np	5.78	0	10.78		
MW-24(A)	5/19/2004	1338	2.56	16.56	np	6.94	0	9.62		
MW-26(A)	10/13/2003	1150	1.5	16.27	np	9.14	0	7.13	15.35	
MW-26(A)	10/17/2003	1600	3.29	16.27	np	9.09	0	7.18		
MW-26(A)	11/12/2003	947	-0.65	16.27	np	8.46	0	7.81		
MW-26(A)	12/16/2003	1259	-0.3	16.27	np	5.51	0	10.76		
MW-26(A)	1/11/2004	1548	4.26	16.27	np	4.69	0	11.58		

**TABLE 1
GROUND-WATER MEASUREMENTS**

**Astoria Area-Wide Petroleum Site
Astoria, Oregon**

Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-26(A)	1/15/2004	1600	-0.91	16.27	np	4.65	0	11.62		
MW-26(A)	2/12/2004	1026	-2.53	16.27	np	4.43	0	11.84		
MW-26(A)	3/18/2004	1305	3.1	16.27	np	5.01	0	11.26		
MW-26(A)	4/12/2004	1100	-2.84	16.27	np	5.91	0	10.36		
MW-26(A)	4/14/2004	1414	-2.64	16.27	np	6	0	10.27		
MW-26(A)	5/19/2004	1330	2.56	16.27	np	6.95	0	9.32		
MW-27(A)	10/13/2003	1213	1.5	16.36	np	9.26	0	7.10	15.24	
MW-27(A)	10/21/2003	905	2.61	16.36	np	9.02	0	7.34		
MW-27(A)	11/12/2003	1000	-0.65	16.36	np	8.54	0	7.82		Slight Odor
MW-27(A)	12/16/2003	1329	-0.3	16.36	np	5.74	0	10.62		
MW-27(A)	1/11/2004	1556	4.26	16.36	np	4.96	0	11.40		
MW-27(A)	1/14/2004	1625	1.19	16.36	np	4.95	0	11.41		
MW-27(A)	2/12/2004	1007	-2.53	16.36	np	4.72	0	11.64		
MW-27(A)	4/12/2004	1049	-2.84	16.36	np	6.05	0	10.31		
MW-27(A)	4/14/2004	1300	-1.18	16.36	np	6.15	0	10.21		
MW-27(A)	5/19/2004	1323	1.86	16.36	np	7.05	0	9.31		
MW-28(A)	10/13/2003	1130	1.5	16.13	np	9.05	0	7.08	15.36	
MW-28(A)	10/17/2003	1415	1.92	16.13	np	9.01	0	7.12		
MW-28(A)	11/12/2003	1007	-0.65	16.13	np	8.51	0	7.62		Slight Odor
MW-28(A)	12/16/2003	1254	-0.3	16.13	np	6.12	0	10.01		Sheen on Cap
MW-28(A)	1/11/2004	1550	4.26	16.13	np	5.31	0	10.82		
MW-28(A)	1/19/2004	1450	-1.95	16.13	np	5.25	0	10.88		
MW-28(A)	2/12/2004	1033	-3.59	16.13	np	4.91	0	11.22		
MW-28(A)	3/18/2004	1255	3.1	16.13	np	5.77	0	10.36		
MW-28(A)	4/12/2004	1110	-2.84	16.13	np	6.25	0	9.88		
MW-28(A)	4/14/2004	1612	-4.32	16.13	np	6.31	0	9.82		
MW-28(A)	5/19/2004	1346	2.56	16.13	np	7.12	0	9.01		
MW-29(A)	10/13/2003	1202	1.5	15.84	np	9.88	0	5.96	15.37	
MW-29(A)	10/21/2003	1550	-1.89	15.84	np	8.69	0	7.15		
MW-29(A)	11/12/2003	934	-0.65	15.84	np	8.33	0	7.51		Odor
MW-29(A)	12/16/2003	1309	-0.3	15.84	np	6.02	0	9.82		
MW-29(A)	1/11/2004	1552	4.26	15.84	np	5.21	0	10.63		
MW-29(A)	1/19/2004	1600	-3.67	15.84	np	5.13	0	10.71		
MW-29(A)	2/12/2004	1014	-2.53	15.84	np	4.8	0	11.04		
MW-29(A)	3/18/2004	1310	3.1	15.84	np	5.61	0	10.23		
MW-29(A)	4/12/2004	1054	-2.84	15.84	np	6.13	0	9.71		
MW-29(A)	4/16/2004	1222	3.28	15.84	np	6.25	0	9.59		
MW-29(A)	5/19/2004	1330	2.56	15.84	np	6.98	0	8.86		
MW-30(A)	10/13/2003	1000	-1.55	16.67	np	9.91	0	6.76	15.11	
MW-30(A)	10/16/2003	820	1.18	16.67	np	9.9	0	6.77		
MW-30(A)	11/12/2003	1221	1.93	16.67	np	9.42	0	7.25		Possible slight odor
MW-30(A)	12/16/2003	1201	-0.19	16.67	np	7.49	0	9.18		

**TABLE 1
GROUND-WATER MEASUREMENTS**

**Astoria Area-Wide Petroleum Site
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Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-30(A)	1/11/2004	1452	4.58	16.67	np	6.72	0	9.95		
MW-30(A)	1/16/2004	1400	-3.33	16.67	np	6.65	0	10.02		
MW-30(A)	2/12/2004	1150	-3.92	16.67	np	6.34	0	10.33		
MW-30(A)	4/12/2004	1008	-1.26	16.67	np	7.49	0	9.18		
MW-30(A)	4/13/2004	1710	-2.75	16.67	np	7.52	0	9.15		
MW-30(A)	5/19/2004	1223	0.49	16.67	np	8.22	0	8.45		
MW-31(A)	10/13/2003	950	-1.55	16.23	np	9.81	0	6.42	15.31	
MW-31(A)	10/16/2003	1350	2.65	16.23	np	9.77	0	6.46		
MW-31(A)	11/12/2003	1210	1.93	16.23	np	9.48	0	6.75		Iron
MW-31(A)	12/16/2003	1207	-0.19	16.23	np	7.97	0	8.26		
MW-31(A)	1/11/2004	1456	4.58	16.23	np	7.33	0	8.90		
MW-31(A)	1/12/2004	1615	4	16.23	np	7.36	0	8.87		
MW-31(A)	2/12/2004	1141	-3.92	16.23	np	7.12	0	9.11		Iron
MW-31(A)	3/18/2004	1152	4.37	16.23	np	7.64	0	8.59		
MW-31(A)	4/12/2004	958	-1.26	16.23	np	7.98	0	8.25		Iron
MW-31(A)	4/13/2004	1425	-4.26	16.23	np	8	0	8.23		
MW-31(A)	5/19/2004	1218	0.49	16.23	np	8.56	0	7.67		
MW-32(A)	10/13/2003	944	-1.55	16.51	np	10.43	0	6.08	15.36	
MW-32(A)	10/14/2003	1350	3.21	16.51	np	10.41	0	6.10		
MW-32(A)	11/12/2003	1316	3.06	16.51	np	10.07	0	6.44		
MW-32(A)	12/16/2003	1039	0.48	16.51	np	8.84	0	7.67		
MW-32(A)	1/11/2004	1419	4.01	16.51	np	8.21	0	8.30		
MW-32(A)	1/12/2004	1525	3.66	16.51	np	8.3	0	8.21		
MW-32(A)	2/12/2004	1241	-3.4	16.51	np	8.5	0	8.01		
MW-32(A)	3/18/2004	1056	4.6	16.51	np	8.63	0	7.88		
MW-32(A)	4/12/2004	955	-1.26	16.51	np	8.98	0	7.53		
MW-32(A)	4/13/2004	1340	-4.26	16.51	np	9.12	0	7.39		
MW-32(A)	5/19/2004	1212	0.49	16.51	np	9.56	0	6.95		
MW-33(A)	10/13/2003	937	-1.55	16.14	np	10.87	0	5.27	17.31	
MW-33(A)	10/14/2003	838	-2.15	16.14	np	10.7	0	5.44		
MW-33(A)	11/12/2003	1328	3.06	16.14	np	10.33	0	5.81		
MW-33(A)	12/16/2003	1034	0.48	16.14	np	9.47	0	6.67		
MW-33(A)	1/11/2004	1416	4.01	16.14	np	8.92	0	7.22		
MW-33(A)	1/12/2004	1425	2.64	16.14	np	9.23	0	6.91		
MW-33(A)	4/12/2004	950	-1.26	16.14	np	9.88	0	6.26		
MW-33(A)	4/13/2004	715	2.92	16.14	np	9.92	0	6.22		
MW-33(A)	5/19/2004	1129	-1.19	16.14	np	10.58	0	5.56		
MW-34(A)	10/13/2003	1003	-1.55	15.83	np	9.59	0	6.24	15.35	
MW-34(A)	10/15/2003	930	-0.99	15.83	np	9.57	0	6.26		
MW-34(A)	11/12/2003	1308	3.06	15.83	np	9.3	0	6.53		
MW-34(A)	12/16/2003	1054	0.48	15.83	np	7.91	0	7.92		
MW-34(A)	1/11/2004	1429	4.01	15.83	np	7.28	0	8.55		
MW-34(A)	1/13/2004	830	-0.07	15.83	np	7.31	0	8.52		

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**Astoria Area-Wide Petroleum Site
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Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-34(A)	2/12/2004	1236	-3.4	15.83	np	7.21	0	8.62		
MW-34(A)	3/18/2004	1104	4.6	15.83	np	7.64	0	8.19		
MW-34(A)	4/12/2004	1000	-1.26	15.83	np	7.96	0	7.87		
MW-34(A)	4/14/2004	720	2.14	15.83	np	8.04	0	7.79		
MW-34(A)	5/19/2004	1216	0.49	15.83	np	8.54	0	7.29		
MW-35(A)	10/13/2003	1007	-1.55	16.50	np	9.9	0	6.60	15.32	
MW-35(A)	10/16/2003	1115	0.27	16.50	np	9.86	0	6.64		
MW-35(A)	11/12/2003	1228	1.93	16.50	np	9.47	0	7.03		
MW-35(A)	12/16/2003	1154	-0.19	16.50	np	7.7	0	8.80		
MW-35(A)	1/11/2004	1449	4.58	16.50	np	6.95	0	9.55		
MW-35(A)	1/16/2004	1230	-2.45	16.50	np	6.87	0	9.63		
MW-35(A)	2/12/2004	1236	-3.4	16.50	np	6.53	0	9.97		
MW-35(A)	3/18/2004	1143	4.37	16.50	np	7.22	0	9.28		
MW-35(A)	4/12/2004	1011	-1.26	16.50	np	7.63	0	8.87		
MW-35(A)	4/13/2004	1550	-4	16.50	np	7.65	0	8.85		
MW-35(A)	5/19/2004	1227	0.49	16.50	np	8.33	0	8.17		
MW-36(A)	10/13/2003	1124	-0.1	16.14	np	8.96	0	7.18	15.36	
MW-36(A)	10/21/2003	1130	2.25	16.14	np	8.78	0	7.36		
MW-36(A)	11/12/2003	926	-1.42	16.14	np	8.41	0	7.73		
MW-36(A)	12/16/2003	1322	-0.3	16.14	np	5.74	0	10.40		
MW-36(A)	1/11/2004	1605	4.26	16.14	np	5.67	0	10.47		
MW-36(A)	1/14/2004	1500	0.02	16.14	np	4.63	0	11.51		
MW-36(A)	2/12/2004	1002	-2.53	16.14	np	4.19	0	11.95		
MW-36(A)	3/18/2004	1328	3.1	16.14	np	4.83	0	11.31		
MW-36(A)	4/12/2004	1043	-2.84	16.14	np	5.48	0	10.66		
MW-36(A)	4/14/2004	1230	-1.18	16.14	np	5.55	0	10.59		
MW-36(A)	5/19/2004	1320	1.86	16.14	np	6.48	0	9.66		
MW-37(A)	10/13/2003	1011	-1.55	18.22	np	11.31	0	6.91	15.41	
MW-37(A)	10/17/2003	810	1.8	18.22	np	11.23	0	6.99		
MW-37(A)	11/12/2003	1242	3.06	18.22	np	10.83	0	7.39		
MW-37(A)	12/16/2003	1146	-0.19	18.22	8.39	8.4	0.01	9.83		
MW-37(A)	1/11/2004	1447	4.58	18.22	7.32	7.33	0.01	10.90		
MW-37(A)	2/12/2004	1159	-3.92	18.22	np	6.7	0	11.52		
MW-37(A)	3/18/2004	1132	4.37	18.22	Trace	7.57	Trace	10.65		Strong Odor
MW-37(A)	4/12/2004	1015	-1.26	18.22	8.05	8.08	0.03	10.17		
MW-37(A)	5/19/2004	1429	2.56	18.22	9.02	9.07	0.05	9.19		
MW-38(A)	10/13/2003	1130	1.5	17.20	np	8.95	0	8.25	15.38	
MW-38(A)	10/21/2003	1040	3.15	17.20	np	8.53	0	8.67		
MW-38(A)	11/12/2003	919	-1.42	17.20	np	8.33	0	8.87		
MW-38(A)	12/16/2003	1314	-0.3	17.20	np	5.21	0	11.99		
MW-38(A)	1/11/2004	1609	4.26	17.20	np	4.26	0	12.94		
MW-38(A)	1/14/2004	810	2.72	17.20	np	4.4	0	12.80		
MW-38(A)	2/12/2004	954	-2.53	17.20	np	3.72	0	13.48		

**TABLE 1
GROUND-WATER MEASUREMENTS**

**Astoria Area-Wide Petroleum Site
Astoria, Oregon**

Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-38(A)	3/18/2004	1322	3.1	17.20	np	4.74	0	12.46		
MW-38(A)	4/12/2004	1037	-2.84	17.20	np	5.45	0	11.75		
MW-38(A)	4/14/2004	1045	2.07	17.20	np	5.48	0	11.72		
MW-38(A)	5/19/2004	1315	1.86	17.20	np	6.48	0	10.72		
MW-39(A)	10/13/2003	1025	-1.55	17.29	np	9.3	0	7.99	15.41	
MW-39(A)	10/16/2003	1540	3.64	17.29	np	9.22	0	8.07		
MW-39(A)	12/16/2003	1104	0.48	17.29	np	5.79	0	11.50		
MW-39(A)	1/11/2004	1435	4.01	17.29	np	4.71	0	12.58		
MW-39(A)	1/16/2004	925	3.77	17.29	np	4.65	0	12.64		
MW-39(A)	2/12/2004	1225	-3.92	17.29	np	4.21	0	13.08		
MW-39(A)	3/18/2004	1114	4.6	17.29	np	5.12	0	12.17		
MW-39(A)	4/12/2004	1032	-2.84	17.29	np	5.8	0	11.49		
MW-39(A)	4/14/2004	920	3.58	17.29	np	5.89	0	11.40		
MW-39(A)	5/19/2004	1531	1.47	17.29	np	6.85	0	10.44		
MW-40(A)	10/13/2003	1025	-1.55	16.17	np	9.56	0	6.61	15.42	
MW-40(A)	10/17/2003	935	0.7	16.17	np	9.51	0	6.66		
MW-40(A)	11/12/2003	1235	3.06	16.17	9.18	9.27	0.09	6.98		pumped out
MW-40(A)	12/16/2003	1138	-0.19	16.17	np	7.45	0	8.72		
MW-40(A)	1/11/2004	1444	4.58	16.17	np	6.68	0	9.49		
MW-40(A)	1/20/2004	800	1.34	16.17	np	6.64	0	9.53		
MW-40(A)	2/12/2004	1211	-3.92	16.17	np	6.24	0	9.93		Odor
MW-40(A)	3/18/2004	1125	4.6	16.17	np	6.96	0	9.21		
MW-40(A)	4/12/2004	1018	-1.26	16.17	np	7.41	0	8.76		
MW-40(A)	4/16/2004	1420	0.37	16.17	np	7.48	0	8.69		Sheen
MW-40(A)	5/19/2004	1506	2.39	16.17	8.02	8.06	0.04	8.14		
MW-41(A)	10/13/2003	907	-2.52	15.67	np	9.23	0	6.44	15.35	
MW-41(A)	10/14/2003	1540	2.91	15.67	np	9.25	0	6.42		sheen
MW-41(A)	11/12/2003	1417	3.65	15.67	np	8.91	0	6.76		
MW-41(A)	12/16/2003	937	1.46	15.67	np	7.39	0	8.28		Odor
MW-41(A)	1/11/2004	1342	4.01	15.67	np	6.72	0	8.95		odor
MW-41(A)	1/16/2004	1125	0.54	15.67	np	7.12	0	8.55		Product globules in baile
MW-41(A)	2/12/2004	1400	-2.19	15.67	6.41	6.71	0.3	9.22		Odor
MW-41(A)	3/18/2004	1004	3.9	15.67	6.95	7.92	0.97	8.59		
MW-41(A)	4/12/2004	922	0.43	15.67	7.29	7.91	0.62	8.30		
MW-41(A)	5/19/2004	1005	-2.92	15.67	8	8.25	0.25	7.64		
MW-42(A)	10/13/2003	859	-2.52	15.91	np	9.39	0	6.52	15.37	
MW-42(A)	10/15/2003	1100	-0.18	15.91	np	9.38	0	6.53		sheen
MW-42(A)	11/12/2003	1408	3.65	15.91	np	9.06	0	6.85		
MW-42(A)	12/16/2003	925	2.67	15.91	np	7.52	0	8.39		
MW-42(A)	1/11/2004	1340	4.01	15.91	6.83	6.9	0.07	9.07		
MW-42(A)	2/12/2004	1352	-2.19	15.91	6.41	7.47	1.06	9.36		
MW-42(A)	3/18/2004	957	3.9	15.91	6.91	8.6	1.69	8.78		
MW-42(A)	4/12/2004	926	0.43	15.91	7.29	8.89	1.6	8.41		

**TABLE 1
GROUND-WATER MEASUREMENTS**

**Astoria Area-Wide Petroleum Site
Astoria, Oregon**

Locator ID	Date	Time	Observed Tide Levels (Tongue Pt)	Top of Casing (feet MSL)	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Corrected Water Elevation (feet)	Depth to Bottom (feet)	Slip 2 Seep Observations
MW-42(A)	5/19/2004	1029	-2.92	15.91	8	9.5	1.5	7.72		
MW-43(A)	10/13/2003	857	-2.52	15.94	np	9.07	0	6.87	15.35	
MW-43(A)	10/13/2003	1645	0.78	15.94	np	9.01	0	6.93		
MW-43(A)	11/12/2003	1403	3.65	15.94	np	8.74	0	7.20		
MW-43(A)	12/16/2003	930	1.46	15.94	np	6.97	0	8.97		
MW-43(A)	1/11/2004	1337	4.01	15.94	np	6.24	0	9.70		
MW-43(A)	1/12/2004	1053	-1.03	15.94	np	6.33	0	9.61		
MW-43(A)	2/12/2004	1347	-2.19	15.94	np	6	0	9.94		
MW-43(A)	3/18/2004	953	3.9	15.94	np	6.62	0	9.32		
MW-43(A)	4/12/2004	928	0.43	15.94	np	7.05	0	8.89		
MW-43(A)	4/13/2004	1230	-3.33	15.94	np	7.1	0	8.84		
MW-43(A)	5/19/2004	1050	-1.19	15.94	np	7.81	0	8.13		
MW-44(A)	10/13/2003	1010	-1.55	15.31	np	8.22	0	7.09	15.41	
MW-44(A)	10/17/2003	1135	0.72	15.31	np	8.17	0	7.14		
MW-44(A)	11/12/2003	1302	3.06	15.31	np	7.95	0	7.36		
MW-44(A)	12/16/2003	1132	-0.19	15.31	5.88	6.02	0.14	9.41		
MW-44(A)	1/11/2004	1442	4.58	15.31	5.1	5.24	0.14	10.19		
MW-44(A)	2/12/2004	1217	-3.92	15.31	4.15	4.34	0.19	11.13		Odor
MW-44(A)	3/18/2004	1119	4.6	15.31	4.82	4.99	0.17	10.46		
MW-44(A)	4/12/2004	1020	-1.26	15.31	8.29	9.04	0.75	6.92		
MW-44(A)	5/19/2004	1509	2.39	15.31	6.14	6.91	0.77	9.07		
MW-45(A)	10/13/2003	1018	-1.55	17.32	np	9.92	0	7.40	17.16	
MW-45(A)	10/16/2003	1730	2.55	17.32	np	9.81	0	7.51		
MW-45(A)	11/12/2003	1256	3.06	17.32	np	9.13	0	8.19		
MW-45(A)	12/16/2003	1114	0.48	17.32	np	6.41	0	10.91		
MW-45(A)	1/11/2004	1440	4.58	17.32	np	5.39	0	11.93		
MW-45(A)	1/16/2004	1110	0.54	17.32	np	5.27	0	12.05		
MW-45(A)	2/12/2004	1229	-3.92	17.32	np	4.44	0	12.88		
MW-45(A)	3/18/2004	1109	4.6	17.32	np	5.69	0	11.63		
MW-45(A)	4/12/2004	1029	-1.26	17.32	np	6.35	0	10.97		
MW-45(A)	4/14/2004	820	3.11	17.32	np	6.42	0	10.90		
MW-45(A)	5/19/2004	1532	1.47	17.32	np	7.41	0	9.91		
MW-46(A)	10/13/2003	919	-2.52	16.00	np	7.46	0	8.54	15.34	
MW-46(A)	10/14/2003	1015	-1.65	16.00	np	7.38	0	8.62		
MW-46(A)	11/12/2003	857	-1.42	16.00	np	6.64	0	9.36		
MW-46(A)	12/16/2003	837	2.67	16.00	np	3.2	0	12.80		
MW-46(A)	1/11/2003	1318	2.89	16.00	np	2.47	0	13.53		
MW-46(A)	1/14/2004	1020	-0.22	16.00	np	2.9	0	13.10		
MW-46(A)	2/12/2004	901	-1.02	16.00	np	2.26	0	13.74		
MW-46(A)	3/18/2004	1040	4.6	16.00	np	3.52	0	12.48		
MW-46(A)	4/12/2004	850	0.43	16.00	np	4.2	0	11.80		
MW-46(A)	4/12/2004	1555	-2.94	16.00	np	4.21	0	11.79		
MW-46(A)	5/19/2004	1145	0.49	16.00	np	5.35	0	10.65		

TABLE 2
CHEMICALS DETECTED IN GROUND WATER
2nd QUARTER 2004

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 (ug/L)
Diesel Range Organics	37	21	57	8.36
Gasoline Range Organics	37	24	65	41.6
Heavy Oil Range Organics	37	5	14	0.73
1,2,4-Trimethylbenzene	37	19	51	3170
1,3,5-Trimethylbenzene	37	14	38	620
Benzene	37	18	49	574
Ethylbenzene	37	26	70	2510
Isopropylbenzene	37	20	54	233
n-Propylbenzene	37	21	57	657
Toluene	37	16	43	3780
Xylenes	37	19	51	8,920
Acenaphthene	37	12	32	0.822
Anthracene	37	1	3	0.0707
Benzo(a)anthracene	37	1	3	0.0109
Benzo(a)pyrene	37	1	3	0.0104
Benzo(b)fluoranthene	37	1	3	0.0105
Chrysene	37	1	3	0.0122
Fluorene	37	10	27	1.66
Naphthalene	37	29	78	1,500
Phenanthrene	37	5	14	2.13
Chromium	3	3	100	34.9
Lead	37	36	97	101

TABLE 3
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 4

PETROLEUM HYDROCARBONS IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Diesel Range Organics mg/L	Gasoline Range Organics mg/L	Residual Range Organics mg/L
MW-1(F)	MW-1-082302	8/23/2002	0.25 U	0.143	0.5 U
MW-1(F)	MW-1(F)	10/22/2003	0.25 U	0.094	0.5 U
MW-1(F)	MW-1 (F)	1/15/2004	0.171 J	0.408	0.5 U
MW-1(F)	MW-1(F)	4/15/2004	0.163 J	0.141 JB	0.5 U
MW-2(M)	MW-2(M)	6/19/2003	2.9	9.44	0.5 U
MW-2(M)	MW-2 (M)	10/15/2003	3.26	4.51	1.67
MW-2(M)	MW-2 (M)	1/12/2004	1.34	0.628	0.5 U
MW-2(M)	MW-2(M)	4/14/2004	4.17	6.47	0.295 J
MW-6(M)	MW-6(M)	6/19/2003	0.25 U	0.457	0.5 U
MW-6(M)	MW-6(M)	10/22/2003	0.179 J	0.08 U	0.5 U
MW-6(M)	MW-6 (M)	1/12/2004	0.25 U	0.08 U	0.5 U
MW-6(M)	MW-6 (M)	4/13/2004	0.25 U	0.08 U B	0.5 U
MW-7(M)	BM-7(M)	6/19/2003	0.25 U	0.08 U	0.5 U
MW-7(M)	MW-7(M)	6/19/2003	0.25 U	0.08 U	0.5 U
MW-7(M)	MW-7(M)	10/13/2003	0.307	0.08 U	0.5 U
MW-7(M)	MW-7 (M)	1/12/2004	0.756	0.08 U	0.5 U
MW-7(M)	MW-7 (M)	4/12/2004	0.401	0.0149	0.5 U
MW-10(M)	MW-10(M)	6/19/2003	1.43	2.4	0.5 U
MW-10(M)	MW-10 (M)	10/15/2003	1.79	3.36	0.302 J
MW-10(M)	MW-10 (M)	1/13/2004	1.59	2.57	0.5 U
MW-10(M)	MW-10 (M)	4/13/2004	2.67	2.44	0.379 J
MW-11(M)	MW-11(M)	6/19/2003	0.25 U	0.179	0.5 U
MW-11(M)	MW-11 (M)	10/15/2003	0.25 U	0.652	0.5 U
MW-11(M)	MW-11 (M)	1/13/2004	0.5	0.219	0.5 U
MW-11(M)	MW-11 (M)	4/13/2004	0.222 J	0.106	0.5 U
MW-12(A)	MW-12(A)	10/22/2003	0.25 U	0.0601 J	0.5 U
MW-12(A)	MW-12 (A)	1/15/2004	0.25 U	0.08 U	0.5 U
MW-12(A)	MW-12(A)	4/16/2004	0.25 U	0.08 U B	0.5 U
MW-13(A)	MW-13(A)	10/22/2003	0.25 U	10.1	0.5 U
MW-13(A)	MW-13 (A)	1/15/2004	1.31	15.3	0.658
MW-13(A)	MW-13(A)	4/16/2004	1.93	13.4	0.5 U
MW-14(A)	MW-14(A)	10/21/2003	0.25 U	0.0718 J	0.5 U
MW-14(A)	MW-14 (A)	1/15/2004	0.25 U	0.08 U	0.5 U
MW-14(A)	MW-14(A)	4/16/2004	0.25 U	0.08 U B	0.5 U

TABLE 4

PETROLEUM HYDROCARBONS IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Diesel Range Organics mg/L	Gasoline Range Organics mg/L	Residual Range Organics mg/L
MW-15(A)	MW-15(A)	10/20/2003	0.25 U	2.55	0.5 U
MW-16(A)	MW-16(A)	10/20/2003	0.25 U	0.457	0.425 J
MW-16(A)	MW-16(A)	1/19/2004	0.25 U	0.141	0.5 U
MW-16(A)	MW-16(A)	4/15/2004	0.859	0.315	0.5 U
MW-17(A)	MW-17 (A)	10/17/2003	0.25 U	0.74	0.5 U
MW-17(A)	BM-17(A)	1/19/2004	0.25 U	1.05	0.5 U
MW-17(A)	MW-17(A)	1/19/2004	0.25 U	0.778	0.5 U
MW-17(A)	MW-17(A)	4/15/2004	0.49	0.516	0.5 U
MW-18(A)	MW-18(A)	10/21/2003	0.936	1.28	2.18
MW-18(A)	MW-18(A)	1/19/2004	0.807	0.83	0.5 U
MW-18(A)	MW-18(A)	4/15/2004	0.241 J	0.148 JB	0.5 U
MW-19(A)	BM-19(A)	10/20/2003	0.176 J	0.08 U	0.5 U
MW-19(A)	MW-19(A)	10/20/2003	0.18 J	0.08 U	0.5 U
MW-19(A)	MW-19 (A)	1/13/2004	0.25 U	0.08 U	0.5 U
MW-19(A)	MW-19(A)	4/15/2004	0.25 U	0.08 U B	0.5 U
MW-20(A)	MW-20(A)	10/20/2003	1.37	1.4	0.71
MW-20(A)	MW-20 (A)	1/13/2004	0.927	0.979	0.918
MW-20(A)	MW-20(A)	4/15/2004	0.918	0.263	0.64
MW-21(A)	MW-21(A)	10/20/2003	1.46	0.753	0.5 U
MW-21(A)	BM-21 (A)	1/13/2004	0.644	0.186	0.5 U
MW-21(A)	MW-21 (A)	1/13/2004	0.799	0.309	0.5 U
MW-21(A)	MW-21(A)	4/16/2004	4.86	0.243	0.734
MW-22(A)	MW-22 (A)	10/16/2003	0.25 U	0.14	0.5 U
MW-22(A)	MW-22(A)	1/19/2004	0.25 U	0.08 U	0.5 U
MW-22(A)	MW-22(A)	4/15/2004	0.25 U	0.08 U B	0.5 U
MW-23(A)	MW-23(A)	10/20/2003	0.25 U	0.08 U	0.5 U
MW-23(A)	MW-23 (A)	1/15/2004	0.25 U	0.0617 J	0.5 U
MW-23(A)	BM-23(A)	4/15/2004	0.25 U	0.198	0.5 U
MW-23(A)	MW-23(A)	4/15/2004	0.194 J	0.207	0.5 U
MW-24(A)	MW-24(A)	10/21/2003	0.25 U	0.376	0.5 U
MW-24(A)	MW-24 (A)	1/15/2004	0.25 U	4.05	0.5 U
MW-24(A)	MW-24(A)	4/14/2004	0.735	0.813	0.5 U

TABLE 4

PETROLEUM HYDROCARBONS IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Diesel Range Organics mg/L	Gasoline Range Organics mg/L	Residual Range Organics mg/L
MW-26(A)	MW-26 (A)	10/17/2003	0.25 U	8.05	0.5 U
MW-26(A)	MW-26 (A)	1/15/2004	0.25 U	24.8	0.5 U
MW-26(A)	MW-26(A)	4/14/2004	3.46	18.5	0.5 U
MW-27(A)	MW-27(A)	10/21/2003	0.25 U	0.099	0.5 U
MW-27(A)	MW-27 (A)	1/14/2004	0.25 U	0.173	0.5 U
MW-27(A)	MW-27 (A)	4/14/2004	0.25 U	0.08 U B	0.5 U
MW-28(A)	MW-28 (A)	10/17/2003	2.13	2.06	0.5 U
MW-28(A)	MW-28(A)	1/19/2004	0.25 U	13.8	0.5 U
MW-28(A)	MW-28(A)	4/14/2004	0.851	8.91	0.5 U
MW-29(A)	MW-29(A)	10/21/2003	4.12	60.2	0.5 U
MW-29(A)	MW-29(A)	1/19/2004	0.25 U	62	0.31 J
MW-29(A)	MW-29(A)	4/16/2004	3.66	34.2	0.5 U
MW-30(A)	MW-30 (A)	10/16/2003	0.25 U	14.7	0.5 U
MW-30(A)	MW-30 (A)	1/16/2004	0.25 U	9.57	0.5 U
MW-30(A)	MW-30 (A)	4/13/2004	0.25 U	8.09	0.5 U
MW-31(A)	BM-31 (A)	10/16/2003	0.25 U	7.39	0.5 U
MW-31(A)	MW-31 (A)	10/16/2003	0.25 U	7.2	0.5 U
MW-31(A)	MW-31 (A)	1/12/2004	1.1	5.22	0.5 U
MW-31(A)	BM-31 (A)	4/13/2004	1.37	4.77	0.5 U
MW-31(A)	MW-31 (A)	4/13/2004	1.42	3.23	0.5 U
MW-32(A)	MW-32(A)	10/14/2003	0.25 U	0.08 U	0.5 U
MW-32(A)	MW-32 (A)	1/12/2004	0.25 U	0.08 U	0.5 U
MW-32(A)	MW-32 (A)	4/13/2004	0.25 U	0.08 U	0.5 U
MW-33(A)	MW-33(A)	10/14/2003	0.25 U	0.07 J	0.5 U
MW-33(A)	MW-33 (A)	1/12/2004	0.25 U	0.276	0.5 U
MW-33(A)	MW-33 (A)	4/13/2004	0.25 U	0.434	0.5 U
MW-34(A)	MW-34(A)	10/14/2003	0.25 U	0.08 U	0.5 U
MW-34(A)	MW-34 (A)	1/13/2004	0.25 U	0.08 U	0.5 U
MW-34(A)	MW-34 (A)	4/14/2004	0.25 U	0.08 U B	0.5 U
MW-35(A)	MW-35 (A)	10/16/2003	0.25 U	0.08 U	0.5 U
MW-35(A)	MW-35 (A)	1/16/2004	0.25 U	0.08 U	0.5 U
MW-35(A)	MW-35 (A)	4/13/2004	0.25 U	0.08 U B	0.5 U

TABLE 4

PETROLEUM HYDROCARBONS IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Diesel Range Organics	Gasoline Range Organics	Residual Range Organics
			mg/L	mg/L	mg/L
MW-36(A)	MW-36(A)	10/21/2003	0.25 U	0.08 U	0.5 U
MW-36(A)	MW-36 (A)	1/14/2004	0.25 U	0.08 U	0.5 U
MW-36(A)	MW-36 (A)	4/14/2004	0.25 U	0.08 U B	0.5 U
MW-37(A)	MW-37 (A)	10/17/2003	0.174 J	1.35	0.5 U
MW-38(A)	MW-38(A)	10/21/2003	0.25 U	0.08 U	0.5 U
MW-38(A)	MW-38 (A)	1/14/2004	0.25 U	0.08 U	0.5 U
MW-38(A)	MW-38 (A)	4/14/2004	0.25 U	0.08 U B	0.5 U
MW-39(A)	MW-39 (A)	10/16/2003	1.25	0.518	0.5 U
MW-39(A)	MW-39 (A)	1/16/2004	0.806	0.291	0.5 U
MW-39(A)	MW-39 (A)	4/14/2004	1.17	0.381	0.5 U
MW-40(A)	MW-40 (A)	10/17/2003	3.66	8.27	0.5 U
MW-40(A)	MW-40(A)	1/20/2004	9.38	31.4	0.598
MW-40(A)	MW-40(A)	4/16/2004	8.36	41.6	0.689
MW-41(A)	MW-41(A)	10/14/2003	4.7	7.7	0.319 J
MW-42(A)	MW-42 (A)	10/15/2003	5.74	18.9	2.5 U
MW-43(A)	MW-43(A)	10/13/2003	1	0.08 U	0.5 U
MW-43(A)	MW-43 (A)	1/12/2004	0.633	0.08 U	0.5 U
MW-43(A)	MW-43 (A)	4/13/2004	1.05	0.08 U B	0.5 U
MW-44(A)	MW-44 (A)	10/17/2003	5.78	67.7	0.5 U
MW-45(A)	MW-45 (A)	10/16/2003	0.25 U	0.08 U	0.5 U
MW-45(A)	MW-45 (A)	1/16/2004	0.25 U	0.08 U	0.5 U
MW-45(A)	MW-45 (A)	4/14/2004	0.25 U	0.08 U B	0.5 U
MW-46(A)	MW-46(A)	10/14/2003	0.25 U	0.08 U	0.5 U
MW-46(A)	MW-46(A)	1/14/2004	0.25 U	0.08 U	0.5 U
MW-46(A)	MW-46 (A)	4/12/2004	0.179 J	0.0283	0.5 U
MW-47(A)	MW-47(A)	10/13/2003	0.25 U	0.08 U	0.5 U
MW-47(A)	MW-47 (A)	1/14/2004	0.25 U	0.0543	0.5 U
MW-47(A)	MW-47 (A)	4/12/2004	0.207 J	0.0685	0.5 U
MW-48(A)	MW-48(A)	10/14/2003	0.25 U	0.08 U	0.5 U

TABLE 4

PETROLEUM HYDROCARBONS IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Diesel Range Organics	Gasoline Range Organics	Residual Range Organics
			mg/L	mg/L	mg/L
MW-48(A)	MW-48 (A)	1/14/2004	0.25 U	0.08 U	0.5 U
MW-48(A)	MW-48 (A)	4/12/2004	0.25 U	0.0227	0.5 U
R-1(M)	R-1(M)	10/22/2003	0.25 U	0.08 U	0.5 U

TABLE 5

RBDM VOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	1,2,4- Trimethylb enzene ug/L	1,2- Dibromoethane ug/L	1,2- Dichloroethane ug/L	1,3,5- Trimethylb enzene ug/L	Benzene ug/L
MW-1(F)	MW-1-082302	8/23/2002	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-1(F)	MW-1-082302	8/23/2002					0.5 U
MW-1(F)	MW-1(F)	10/22/2003	1.64	0.5 U	0.5 U	0.42 J	0.41 J
MW-1(F)	MW-1 (F)	1/15/2004	0.09 J	0.5 U	0.5 U	0.5 U	2.79
MW-1(F)	MW-1(F)	4/15/2004	0.36 J	0.5 U	0.5 U	0.5 U	0.2 U
MW-2(M)	MW-2(M)	6/19/2003	100	2.5 U	2.5 U	14.6	48.4
MW-2(M)	MW-2 (M)	10/15/2003	2.23	0.5 U	0.5 U	0.5 U	125
MW-2(M)	MW-2 (M)	1/12/2004	1 U	0.5 U	0.5 U	0.5 U	10.6
MW-2(M)	MW-2(M)	4/14/2004	87.6	2.5 U	2.5 U	3.55	28.8
MW-6(M)	MW-6(M)	6/19/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-6(M)	MW-6(M)	10/22/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-6(M)	MW-6 (M)	1/12/2004	0.92	0.5 U	0.5 U	0.2	0.5 U
MW-6(M)	MW-6 (M)	4/13/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-7(M)	BM-7(M)	6/19/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7(M)	MW-7(M)	6/19/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7(M)	MW-7(M)	10/13/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7(M)	MW-7 (M)	1/12/2004	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-7(M)	MW-7 (M)	4/12/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-10(M)	MW-10(M)	6/19/2003	26.1	0.5 U	0.5 U	7.58	21
MW-10(M)	MW-10 (M)	10/15/2003	6.3	1 U	1 U	1.34	319
MW-10(M)	MW-10 (M)	1/13/2004	4.05	0.5 U	0.5 U	4.55	50.3
MW-10(M)	MW-10 (M)	4/13/2004	3.71	0.5 U	0.5 U	3.15	52.4

TABLE 5

RBDM VOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	1,2,4- Trimethylb enzene	1,2- Dibromoethane	1,2- Dichloroethane	1,3,5- Trimethylb enzene	Benzene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-11(M)	MW-11(M)	6/19/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-11(M)	MW-11 (M)	10/15/2003	1 U B	0.5 U	0.5 U	0.31 J	11.6
MW-11(M)	MW-11 (M)	1/13/2004	1 U	0.5 U	0.5 U	0.5 U	8.86
MW-11(M)	MW-11 (M)	4/13/2004	0.19 J	0.5 U	0.5 U	0.5 U	0.35
MW-12(A)	MW-12(A)	10/22/2003	0.15 J	0.5 U	0.5 U	0.5 U	0.19 J
MW-12(A)	MW-12 (A)	1/15/2004	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-12(A)	MW-12(A)	4/16/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-13(A)	MW-13(A)	10/22/2003	17.4	2.5 U	2.5 U	42.8	259
MW-13(A)	MW-13 (A)	1/15/2004	393	10 U	6.8	10 U	750
MW-13(A)	MW-13(A)	4/16/2004	31	10 U	10 U	41.8	564
MW-14(A)	MW-14(A)	10/21/2003	0.53 J	0.5 U	0.5 U	0.17 J	0.77
MW-14(A)	MW-14 (A)	1/15/2004	0.09 J	0.5 U	0.5 U	0.5 U	0.65
MW-14(A)	MW-14(A)	4/16/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-15(A)	MW-15(A)	10/20/2003	7.37	0.5 U	0.26 J	6.87	127
MW-16(A)	MW-16(A)	10/20/2003	2.09	0.5 U	0.5 U	0.93	11.4
MW-16(A)	MW-16(A)	1/19/2004	1 U	0.5 U	0.5 U	0.5 U	2.32
MW-16(A)	MW-16(A)	4/15/2004	1 U	0.5 U	0.5 U	0.5 U	11.7
MW-17(A)	MW-17 (A)	10/17/2003	3.19	0.5 U	0.5 U	0.54	9.19
MW-17(A)	BM-17(A)	1/19/2004	0.62 J	0.5 U	0.5 U	2.21	2.5
MW-17(A)	MW-17(A)	1/19/2004	0.72 J	0.5 U	0.5 U	2.64	2.52
MW-17(A)	MW-17(A)	4/15/2004	0.44 J	0.5 U	0.5 U	1.73	2.69

TABLE 5

RBDM VOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	1,2,4- Trimethylb enzene ug/L	1,2- Dibromoethane ug/L	1,2- Dichloroethane ug/L	1,3,5- Trimethylb enzene ug/L	Benzene ug/L
MW-18(A)	MW-18(A)	10/21/2003	0.72 J	1 U	1 U	1.56	273
MW-18(A)	MW-18(A)	1/19/2004	0.29 J	0.5 U	0.5 U	1.15	138
MW-18(A)	MW-18(A)	4/15/2004	0.17 J	0.5 U	0.5 U	0.5 U	3.2
MW-19(A)	BM-19(A)	10/20/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-19(A)	MW-19(A)	10/20/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-19(A)	MW-19 (A)	1/13/2004	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-19(A)	MW-19(A)	4/15/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-20(A)	MW-20(A)	10/20/2003	15.9	0.5 U	0.5 U	2.06	16.9
MW-20(A)	MW-20 (A)	1/13/2004	56.2	0.5 U	0.5 U	7.32	3.64
MW-20(A)	MW-20(A)	4/15/2004	5.97	0.5 U	0.5 U	0.59	1.77
MW-21(A)	MW-21(A)	10/20/2003	0.2 J	0.5 U	0.5 U	0.24 J	0.5 U
MW-21(A)	BM-21 (A)	1/13/2004	1 U	0.5 U	0.5 U	0.5 U	0.25
MW-21(A)	MW-21 (A)	1/13/2004	1 U	0.5 U	0.5 U	0.5 U	0.31
MW-21(A)	MW-21(A)	4/16/2004	1.37	0.5 U	0.5 U	0.5 U	0.7
MW-22(A)	MW-22 (A)	10/16/2003	1 U B	0.5 U	0.5 U	0.5 U	19.4
MW-22(A)	MW-22(A)	1/19/2004	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-22(A)	MW-22(A)	4/15/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-23(A)	MW-23(A)	10/20/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-23(A)	MW-23 (A)	1/15/2004	0.1	0.5 U	0.5 U	0.5 U	0.5 U
MW-23(A)	BM-23(A)	4/15/2004	1.89	0.5 U	0.5 U	0.57	2.75
MW-23(A)	MW-23(A)	4/15/2004	2.7	0.5 U	0.5 U	0.84	3.04

TABLE 5

RBDM VOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	1,2,4- Trimethylb enzene ug/L	1,2- Dibromoethane ug/L	1,2- Dichloroethane ug/L	1,3,5- Trimethylb enzene ug/L	Benzene ug/L
MW-24(A)	MW-24(A)	10/21/2003	2.05	0.5 U	0.5 U	1.35	0.62
MW-24(A)	MW-24 (A)	1/15/2004	232	5 U	5 U	33.9	2.7
MW-24(A)	MW-24(A)	4/14/2004	55	0.5 U	0.5 U	3.87	0.16
MW-26(A)	MW-26 (A)	10/17/2003	600	2.5 U	2.5 U	135	3.05
MW-26(A)	MW-26 (A)	1/15/2004	3120	10 U	10 U	682	3
MW-26(A)	MW-26(A)	4/14/2004	2580	10 U	10 U	565	4 U
MW-27(A)	MW-27(A)	10/21/2003	1 U	0.5 U	0.5 U	0.5 U	0.98
MW-27(A)	MW-27 (A)	1/14/2004	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-27(A)	MW-27 (A)	4/14/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-28(A)	MW-28 (A)	10/17/2003	566	5 U	5 U	138	208
MW-28(A)	MW-28(A)	1/19/2004	942	5 U	5 U	204	702
MW-28(A)	MW-28(A)	4/14/2004	250	5 U	5 U	51.2	179
MW-29(A)	MW-29(A)	10/21/2003	1980	25 U	25 U	446	482
MW-29(A)	MW-29(A)	1/19/2004	2630	25 U	25 U	568	330
MW-29(A)	MW-29(A)	4/16/2004	1770	25 U	25 U	396	148
MW-30(A)	MW-30 (A)	10/16/2003	20 U B	10 U	10 U	34.8	262
MW-30(A)	MW-30 (A)	1/16/2004	33.6	10 U	10 U	14.2	341
MW-30(A)	MW-30 (A)	4/13/2004	75.7	5 U	5 U	85.5	533
MW-31(A)	BM-31 (A)	10/16/2003	10 U B	5 U	5 U	3.9 J	1260
MW-31(A)	MW-31 (A)	10/16/2003	10 U B	5 U	5 U	3.9	1170

TABLE 5

RBDM VOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	1,2,4- Trimethylb enzene ug/L	1,2- Dibromoethane ug/L	1,2- Dichloroethane ug/L	1,3,5- Trimethylb enzene ug/L	Benzene ug/L
MW-31(A)	MW-31 (A)	1/12/2004	10 U	5 U	5 U	2.2	1390
MW-31(A)	BM-31 (A)	4/13/2004	0.9 J	2.5 U	2.5 U	2.7	538
MW-31(A)	MW-31 (A)	4/13/2004	0.85	2.5 U	2.5 U	2.65	574
MW-32(A)	MW-32(A)	10/14/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-32(A)	MW-32 (A)	1/12/2004	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-32(A)	MW-32 (A)	4/13/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-33(A)	MW-33(A)	10/14/2003	1 U	0.5 U	0.5 U	0.5 U	3.49
MW-33(A)	MW-33 (A)	1/12/2004	1 U	0.5 U	0.5 U	0.5 U	15
MW-33(A)	MW-33 (A)	4/13/2004	1 U	0.5 U	0.5 U	0.5 U	12.1
MW-34(A)	MW-34(A)	10/14/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-34(A)	MW-34 (A)	1/13/2004	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-34(A)	MW-34 (A)	4/14/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-35(A)	MW-35 (A)	10/16/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-35(A)	MW-35 (A)	1/16/2004	0.13 J	0.5 U	0.5 U	0.5 U	0.5 U
MW-35(A)	MW-35 (A)	4/13/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-36(A)	MW-36(A)	10/21/2003	0.15 J	0.5 U	0.5 U	0.5 U	0.5 U
MW-36(A)	MW-36 (A)	1/14/2004	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-36(A)	MW-36 (A)	4/14/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-37(A)	MW-37 (A)	10/17/2003	12.2	0.5 U	0.5 U	2.96	0.16 J
MW-38(A)	MW-38(A)	10/21/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U

TABLE 5

RBDM VOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	1,2,4- Trimethylb enzene ug/L	1,2- Dibromoethane ug/L	1,2- Dichloroethane ug/L	1,3,5- Trimethylb enzene ug/L	Benzene ug/L
MW-38(A)	MW-38 (A)	1/14/2004	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-38(A)	MW-38 (A)	4/14/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-39(A)	MW-39 (A)	10/16/2003	19.7	0.5 U	0.5 U	3.02	3.98
MW-39(A)	MW-39 (A)	1/16/2004	14.4	0.5 U	0.5 U	2.7	3.37
MW-39(A)	MW-39 (A)	4/14/2004	6.04	0.5 U	0.5 U	1.12	3.4
MW-40(A)	MW-40 (A)	10/17/2003	40.6	2.5 U	2.5 U	8.7	81.2
MW-40(A)	MW-40(A)	1/20/2004	3170	10 U	10 U	527	7.8 J
MW-40(A)	MW-40(A)	4/16/2004	3170	25 U	25 U	620	83.5
MW-41(A)	MW-41(A)	10/14/2003	15.4	5 U	5 U	5 U	355
MW-42(A)	MW-42 (A)	10/15/2003	44.8	10 U	10 U	11.2	3020
MW-43(A)	MW-43(A)	10/13/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-43(A)	MW-43 (A)	1/12/2004	1 U	0.5 U	0.5 U	0.5 U	10.9
MW-43(A)	MW-43 (A)	4/13/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-44(A)	MW-44 (A)	10/17/2003	3470	25 U	25 U	898	898
MW-45(A)	MW-45 (A)	10/16/2003	1 U B	0.5 U	0.5 U	0.5 U	0.16 J
MW-45(A)	MW-45 (A)	1/16/2004	0.11 J	0.5 U	0.5 U	0.5 U	0.5 U
MW-45(A)	MW-45 (A)	4/14/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-46(A)	MW-46(A)	10/14/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-46(A)	MW-46(A)	1/14/2004	1 U	0.5 U	0.5 U	0.5 U	0.5 U

TABLE 5

RBDM VOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	1,2,4- Trimethylb enzene ug/L	1,2- Dibromoethane ug/L	1,2- Dichloroethane ug/L	1,3,5- Trimethylb enzene ug/L	Benzene ug/L
MW-46(A)	MW-46 (A)	4/12/2004	0.32 J	0.5 U	0.5 U	0.5 U	0.2 U
MW-47(A)	MW-47(A)	10/13/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-47(A)	MW-47 (A)	1/14/2004	1 U	0.5 U	0.5 U	0.5 U	0.21
MW-47(A)	MW-47 (A)	4/12/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
MW-48(A)	MW-48(A)	10/14/2003	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-48(A)	MW-48 (A)	1/14/2004	1 U	0.5 U	0.5 U	0.5 U	0.5 U
MW-48(A)	MW-48 (A)	4/12/2004	1 U	0.5 U	0.5 U	0.5 U	0.2 U
R-1(M)	R-1(M)	10/22/2003	1 U B	0.5 U	0.5 U	0.5 U	0.23 J

TABLE 5

RBDM VOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Ethylbenzene	Isopropylbenzene	Methyl-t-butyl ether	n-Propylbenzene	Toluene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-1(F)	MW-1-082302	8/23/2002	0.5 U				0.5 U
MW-1(F)	MW-1(F)	10/22/2003	3.65	0.17 J	2 U	0.26 J	7.08
MW-1(F)	MW-1 (F)	1/15/2004	1.99	2.1	2 U	1.13	0.5 U
MW-1(F)	MW-1(F)	4/15/2004	0.66	0.19 J	2 U	0.26 J	0.5 U
MW-2(M)	MW-2(M)	6/19/2003	756	70.2	10 U	270	15.5
MW-2(M)	MW-2 (M)	10/15/2003	92.6	42.9	2 U	159	8.5
MW-2(M)	MW-2 (M)	1/12/2004	2.52	10.2	2 U	47.8	0.51 J+,B
MW-2(M)	MW-2(M)	4/14/2004	625	54.7	10 U	212	13.4
MW-6(M)	MW-6(M)	6/19/2003	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-6(M)	MW-6(M)	10/22/2003	0.41 J	2 U	2 U	0.5 U	0.5 U B
MW-6(M)	MW-6 (M)	1/12/2004	0.5 U	0.27	2 U	0.49	0.5 U
MW-6(M)	MW-6 (M)	4/13/2004	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-7(M)	BM-7(M)	6/19/2003	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-7(M)	MW-7(M)	6/19/2003	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-7(M)	MW-7(M)	10/13/2003	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-7(M)	MW-7 (M)	1/12/2004	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-7(M)	MW-7 (M)	4/12/2004	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-10(M)	MW-10(M)	6/19/2003	25	27.8	2 U	26.8	5.55
MW-10(M)	MW-10 (M)	10/15/2003	182	18.5	4 U	48.6	19.3
MW-10(M)	MW-10 (M)	1/13/2004	24.9	27.5	2 U	28.9	15.3
MW-10(M)	MW-10 (M)	4/13/2004	32.1	23.1	2 U	21.7	10.5

TABLE 5

RBDM VOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Ethylbenzene	Isopropylbenzene	Methyl-t-butyl ether	n-Propylbenzene	Toluene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-11(M)	MW-11(M)	6/19/2003	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-11(M)	MW-11 (M)	10/15/2003	0.38 J	4.37	2 U	7.48	0.96 JB
MW-11(M)	MW-11 (M)	1/13/2004	0.11	3.15	2 U	1.3	0.5 U B
MW-11(M)	MW-11 (M)	4/13/2004	0.53	0.43 J	2 U	3.19	0.5 U B
MW-12(A)	MW-12(A)	10/22/2003	1.35	2 U	2 U	0.5 U	2.77
MW-12(A)	MW-12 (A)	1/15/2004	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-12(A)	MW-12(A)	4/16/2004	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-13(A)	MW-13(A)	10/22/2003	915	94.7	10 U	228	26.6
MW-13(A)	MW-13 (A)	1/15/2004	2270	225	40 U	676	82.4
MW-13(A)	MW-13(A)	4/16/2004	2190	233	40 U	657	58
MW-14(A)	MW-14(A)	10/21/2003	2.36	0.11 J	2 U	0.2 J	5.91
MW-14(A)	MW-14 (A)	1/15/2004	3.28	0.28 J	2 U	0.66	0.5 U
MW-14(A)	MW-14(A)	4/16/2004	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-15(A)	MW-15(A)	10/20/2003	27	42.4	0.93 J	90.3	13.5
MW-16(A)	MW-16(A)	10/20/2003	1.86	7.81	2 U	12.3	1.43 J,B
MW-16(A)	MW-16(A)	1/19/2004	0.36 J	3.79	2 U	5.44	0.5 U B
MW-16(A)	MW-16(A)	4/15/2004	1.1	28.8	0.38 J	29.9	0.71 JB
MW-17(A)	MW-17 (A)	10/17/2003	14.7	2.9	2 U	7.97	25.5
MW-17(A)	BM-17(A)	1/19/2004	50.3	6.44	2 U	16.4	1.04 JB
MW-17(A)	MW-17(A)	1/19/2004	51.7	6.55	2 U	17.4	1.05 JB
MW-17(A)	MW-17(A)	4/15/2004	29.3	7.78	2 U	23	0.67 JB

TABLE 5

RBDM VOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Ethylbenzene	Isopropylbenzene	Methyl-t-butyl ether	n-Propylbenzene	Toluene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-18(A)	MW-18(A)	10/21/2003	2.18	25.8	0.98 J	45	21.1
MW-18(A)	MW-18(A)	1/19/2004	5.45	13.8	2 U	26.9	13.9
MW-18(A)	MW-18(A)	4/15/2004	0.26 J	2.09	0.2 J	1.6	0.68 JB
MW-19(A)	BM-19(A)	10/20/2003	0.5 U	2 U	0.23 J	0.5 U	0.5 U
MW-19(A)	MW-19(A)	10/20/2003	0.5 U	2 U	0.23 J	0.5 U	0.5 U
MW-19(A)	MW-19(A)	1/13/2004	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-19(A)	MW-19(A)	4/15/2004	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-20(A)	MW-20(A)	10/20/2003	20.2	1.88 J	2 U	3.62	1.29 J,B
MW-20(A)	MW-20(A)	1/13/2004	12.5	6.54	2 U	8.92	0.88 J+,B
MW-20(A)	MW-20(A)	4/15/2004	0.11	1.16	2 U	2.02	0.5 U B
MW-21(A)	MW-21(A)	10/20/2003	3.1	2.5	2 U	7.31	0.5 U
MW-21(A)	BM-21(A)	1/13/2004	1.2	2.36	2 U	6.9	0.5 U B
MW-21(A)	MW-21(A)	1/13/2004	1.45	2.53	2 U	7.59	0.5 U B
MW-21(A)	MW-21(A)	4/16/2004	2.51	2.59	2 U	3.97	0.52 JB
MW-22(A)	MW-22(A)	10/16/2003	52.9	2.78	2 U	7	2.96
MW-22(A)	MW-22(A)	1/19/2004	0.3 J	2 U	2 U	0.5 U	0.5 U
MW-22(A)	MW-22(A)	4/15/2004	0.19	2 U	2 U	0.5 U	0.5 U
MW-23(A)	MW-23(A)	10/20/2003	0.5 U	2 U	2 U	0.15 J	0.5 U
MW-23(A)	MW-23(A)	1/15/2004	0.52	2 U	2 U	0.17	0.5 U
MW-23(A)	BM-23(A)	4/15/2004	12.1	2.64	2 U	5.04	0.94 JB
MW-23(A)	MW-23(A)	4/15/2004	14.8	3.27	2 U	6.02	1.13 JB

TABLE 5

RBDM VOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Ethylbenzene	Isopropylbenzene	Methyl-t-butyl ether	n-Propylbenzene	Toluene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-24(A)	MW-24(A)	10/21/2003	7.69	0.94 J	2 U	2.01	1.17 J,B
MW-24(A)	MW-24 (A)	1/15/2004	60.1	4.8	20 U	9.7	5 U
MW-24(A)	MW-24(A)	4/14/2004	28.4	4.54	2 U	11.1	0.5 U B
MW-26(A)	MW-26 (A)	10/17/2003	373	32	10 U	83.3	18.4
MW-26(A)	MW-26 (A)	1/15/2004	1280	104	40 U	280	24.2 JB
MW-26(A)	MW-26(A)	4/14/2004	852	96	40 U	251	14.8 JB
MW-27(A)	MW-27(A)	10/21/2003	0.12 J	2 U	2 U	0.5 U	0.5 U
MW-27(A)	MW-27 (A)	1/14/2004	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-27(A)	MW-27 (A)	4/14/2004	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-28(A)	MW-28 (A)	10/17/2003	334	24.4	20 U	85.6	201
MW-28(A)	MW-28(A)	1/19/2004	902	30.1	20 U	92.4	696
MW-28(A)	MW-28(A)	4/14/2004	247	16.2 J	20 U	37.4	88.9
MW-29(A)	MW-29(A)	10/21/2003	2480	86 J	100 U	234	5160
MW-29(A)	MW-29(A)	1/19/2004	2640	82 J	100 U	241	8170
MW-29(A)	MW-29(A)	4/16/2004	1840	69.5 J	100 U	188	3780
MW-30(A)	MW-30 (A)	10/16/2003	2080	88.8	40 U	238	110
MW-30(A)	MW-30 (A)	1/16/2004	1910	79	40 U	232	127
MW-30(A)	MW-30 (A)	4/13/2004	1850	70.2	20 U	170	243
MW-31(A)	BM-31 (A)	10/16/2003	728	56.5	20 U	156	41.6
MW-31(A)	MW-31 (A)	10/16/2003	706	54.4	20 U	152	38.4

TABLE 5

RBDM VOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Ethylbenzene	Isopropylbenzene	Methyl-t-butyl ether	n-Propylbenzene	Toluene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-31(A)	MW-31 (A)	1/12/2004	798	44.2	20 U	121	109
MW-31(A)	BM-31 (A)	4/13/2004	432	33	10 U	73	29.2
MW-31(A)	MW-31 (A)	4/13/2004	533	35.2	10 U	80.2	35.9
MW-32(A)	MW-32(A)	10/14/2003	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-32(A)	MW-32 (A)	1/12/2004	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-32(A)	MW-32 (A)	4/13/2004	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-33(A)	MW-33(A)	10/14/2003	0.5 U	0.35 J	2 U	0.63	0.5 U
MW-33(A)	MW-33 (A)	1/12/2004	0.55	3.71	2 U	8.13	2.16
MW-33(A)	MW-33 (A)	4/13/2004	1.82	4.07	2 U	8.46	0.83 JB
MW-34(A)	MW-34(A)	10/14/2003	0.29 J	2 U	2 U	0.5 U	0.5 U
MW-34(A)	MW-34 (A)	1/13/2004	0.25	2 U	2 U	0.5 U	0.5 U
MW-34(A)	MW-34 (A)	4/14/2004	0.21	2 U	2 U	0.5 U	0.5 U
MW-35(A)	MW-35 (A)	10/16/2003	1.12	2 U	2 U	0.17 J	0.5 U
MW-35(A)	MW-35 (A)	1/16/2004	0.42 J	2 U	2 U	0.18 J	0.5 U
MW-35(A)	MW-35 (A)	4/13/2004	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-36(A)	MW-36(A)	10/21/2003	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-36(A)	MW-36 (A)	1/14/2004	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-36(A)	MW-36 (A)	4/14/2004	0.92	2 U	2 U	0.5 U	0.5 U B
MW-37(A)	MW-37 (A)	10/17/2003	17	6.72	2 U	10.4	0.72 J
MW-38(A)	MW-38(A)	10/21/2003	0.5 U	2 U	2 U	0.5 U	0.5 U

TABLE 5

RBDM VOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Ethylbenzene	Isopropylbenzene	Methyl-t-butyl ether	n-Propylbenzene	Toluene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-38(A)	MW-38 (A)	1/14/2004	0.5 U	2 U	2 U	0.15	0.5 U
MW-38(A)	MW-38 (A)	4/14/2004	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-39(A)	MW-39 (A)	10/16/2003	10.9	3.42	2 U	5.33	0.5 U B
MW-39(A)	MW-39 (A)	1/16/2004	10.8	3.34	2 U	4.57	0.5 U B
MW-39(A)	MW-39 (A)	4/14/2004	9.92	3.36	2 U	6.58	0.6 JB
MW-40(A)	MW-40 (A)	10/17/2003	650	44.8	10 U	86.4	57.6
MW-40(A)	MW-40(A)	1/20/2004	2230	98	40 U	334	833
MW-40(A)	MW-40(A)	4/16/2004	2510	98.5 J	100 U	325	1530
MW-41(A)	MW-41(A)	10/14/2003	1260	38.1	20 U	88.9	103
MW-42(A)	MW-42 (A)	10/15/2003	1850	63.4	40 U	226	163
MW-43(A)	MW-43(A)	10/13/2003	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-43(A)	MW-43 (A)	1/12/2004	3.56	2 U	2 U	0.5 U	0.5 U B
MW-43(A)	MW-43 (A)	4/13/2004	0.48 J	2 U	2 U	3.76	0.5 U
MW-44(A)	MW-44 (A)	10/17/2003	2890	94 J	100 U	388	5320
MW-45(A)	MW-45 (A)	10/16/2003	0.32 J	2 U	2 U	0.21 J	0.5 U
MW-45(A)	MW-45 (A)	1/16/2004	0.23 J	2 U	2 U	0.5 U	0.5 U
MW-45(A)	MW-45 (A)	4/14/2004	0.11 J	2 U	2 U	0.5 U	0.5 U
MW-46(A)	MW-46(A)	10/14/2003	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-46(A)	MW-46(A)	1/14/2004	0.5 U	2 U	2 U	0.5 U	0.5 U

TABLE 5**RBDM VOCs IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Ethylbenzene	Isopropylbenzene	Methyl-t-butyl ether	n-Propylbenzene	Toluene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-46(A)	MW-46 (A)	4/12/2004	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-47(A)	MW-47(A)	10/13/2003	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-47(A)	MW-47 (A)	1/14/2004	0.13	2 U	2 U	0.5 U	0.5 U
MW-47(A)	MW-47 (A)	4/12/2004	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-48(A)	MW-48(A)	10/14/2003	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-48(A)	MW-48 (A)	1/14/2004	0.5 U	2 U	2 U	0.5 U	0.5 U
MW-48(A)	MW-48 (A)	4/12/2004	0.5 U	2 U	2 U	0.5 U	0.5 U
R-1(M)	R-1(M)	10/22/2003	0.63	2 U	2 U	0.5 U	0.5 U B

TABLE 5**RBDM VOCs IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Xylenes
			ug/L
MW-1(F)	MW-1-082302	8/23/2002	1 U
MW-1(F)	MW-1-082302	8/23/2002	1 U
MW-1(F)	MW-1(F)	10/22/2003	16.3
MW-1(F)	MW-1 (F)	1/15/2004	1 U
MW-1(F)	MW-1(F)	4/15/2004	0.92 J
MW-2(M)	MW-2(M)	6/19/2003	369
MW-2(M)	MW-2 (M)	10/15/2003	21.3
MW-2(M)	MW-2 (M)	1/12/2004	0.86
MW-2(M)	MW-2(M)	4/14/2004	342
MW-6(M)	MW-6(M)	6/19/2003	1 U
MW-6(M)	MW-6(M)	10/22/2003	1 U
MW-6(M)	MW-6 (M)	1/12/2004	1 U
MW-6(M)	MW-6 (M)	4/13/2004	1 U
MW-7(M)	BM-7(M)	6/19/2003	1 U
MW-7(M)	MW-7(M)	6/19/2003	1 U
MW-7(M)	MW-7(M)	10/13/2003	1 U
MW-7(M)	MW-7 (M)	1/12/2004	1 U
MW-7(M)	MW-7 (M)	4/12/2004	1 U
MW-10(M)	MW-10(M)	6/19/2003	49
MW-10(M)	MW-10 (M)	10/15/2003	49.6
MW-10(M)	MW-10 (M)	1/13/2004	46.9
MW-10(M)	MW-10 (M)	4/13/2004	55

TABLE 5**RBDM VOCs IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Xylenes
			ug/L
MW-11(M)	MW-11(M)	6/19/2003	1 U
MW-11(M)	MW-11 (M)	10/15/2003	8.39
MW-11(M)	MW-11 (M)	1/13/2004	1 U
MW-11(M)	MW-11 (M)	4/13/2004	1 U
MW-12(A)	MW-12(A)	10/22/2003	3.77
MW-12(A)	MW-12 (A)	1/15/2004	1 U
MW-12(A)	MW-12(A)	4/16/2004	1 U
MW-13(A)	MW-13(A)	10/22/2003	94.6
MW-13(A)	MW-13 (A)	1/15/2004	578
MW-13(A)	MW-13(A)	4/16/2004	110
MW-14(A)	MW-14(A)	10/21/2003	6.82
MW-14(A)	MW-14 (A)	1/15/2004	0.47 J
MW-14(A)	MW-14(A)	4/16/2004	1 U
MW-15(A)	MW-15(A)	10/20/2003	40.7
MW-16(A)	MW-16(A)	10/20/2003	9.74
MW-16(A)	MW-16(A)	1/19/2004	1 U
MW-16(A)	MW-16(A)	4/15/2004	0.34 J
MW-17(A)	MW-17 (A)	10/17/2003	35.3
MW-17(A)	BM-17(A)	1/19/2004	18.9
MW-17(A)	MW-17(A)	1/19/2004	20.1
MW-17(A)	MW-17(A)	4/15/2004	8.65

TABLE 5**RBDM VOCs IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Xylenes
			ug/L
MW-18(A)	MW-18(A)	10/21/2003	22.4
MW-18(A)	MW-18(A)	1/19/2004	18.9
MW-18(A)	MW-18(A)	4/15/2004	0.82 J
MW-19(A)	BM-19(A)	10/20/2003	1 U
MW-19(A)	MW-19(A)	10/20/2003	1 U
MW-19(A)	MW-19 (A)	1/13/2004	1 U
MW-19(A)	MW-19(A)	4/15/2004	1 U
MW-20(A)	MW-20(A)	10/20/2003	121
MW-20(A)	MW-20 (A)	1/13/2004	46.2
MW-20(A)	MW-20(A)	4/15/2004	1.08
MW-21(A)	MW-21(A)	10/20/2003	1.73
MW-21(A)	BM-21 (A)	1/13/2004	0.45
MW-21(A)	MW-21 (A)	1/13/2004	0.46
MW-21(A)	MW-21(A)	4/16/2004	5.41
MW-22(A)	MW-22 (A)	10/16/2003	7.82
MW-22(A)	MW-22(A)	1/19/2004	1 U
MW-22(A)	MW-22(A)	4/15/2004	1 U
MW-23(A)	MW-23(A)	10/20/2003	1 U
MW-23(A)	MW-23 (A)	1/15/2004	0.38
MW-23(A)	BM-23(A)	4/15/2004	10.9
MW-23(A)	MW-23(A)	4/15/2004	14.5

TABLE 5**RBDM VOCs IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Xylenes
			ug/L
MW-24(A)	MW-24(A)	10/21/2003	10.5
MW-24(A)	MW-24 (A)	1/15/2004	116
MW-24(A)	MW-24(A)	4/14/2004	30.7
MW-26(A)	MW-26 (A)	10/17/2003	1040
MW-26(A)	MW-26 (A)	1/15/2004	5500
MW-26(A)	MW-26(A)	4/14/2004	3060
MW-27(A)	MW-27(A)	10/21/2003	1 U
MW-27(A)	MW-27 (A)	1/14/2004	1 U
MW-27(A)	MW-27 (A)	4/14/2004	1 U
MW-28(A)	MW-28 (A)	10/17/2003	1070
MW-28(A)	MW-28(A)	1/19/2004	4000
MW-28(A)	MW-28(A)	4/14/2004	874
MW-29(A)	MW-29(A)	10/21/2003	13300
MW-29(A)	MW-29(A)	1/19/2004	13500
MW-29(A)	MW-29(A)	4/16/2004	8920
MW-30(A)	MW-30 (A)	10/16/2003	663
MW-30(A)	MW-30 (A)	1/16/2004	378
MW-30(A)	MW-30 (A)	4/13/2004	2140
MW-31(A)	BM-31 (A)	10/16/2003	143
MW-31(A)	MW-31 (A)	10/16/2003	138

TABLE 5**RBDM VOCs IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Xylenes
			ug/L
MW-31(A)	MW-31 (A)	1/12/2004	189
MW-31(A)	BM-31 (A)	4/13/2004	121
MW-31(A)	MW-31 (A)	4/13/2004	127
MW-32(A)	MW-32(A)	10/14/2003	1 U
MW-32(A)	MW-32 (A)	1/12/2004	1 U
MW-32(A)	MW-32 (A)	4/13/2004	1 U
MW-33(A)	MW-33(A)	10/14/2003	0.28 J
MW-33(A)	MW-33 (A)	1/12/2004	4.16
MW-33(A)	MW-33 (A)	4/13/2004	2.13
MW-34(A)	MW-34(A)	10/14/2003	1 U
MW-34(A)	MW-34 (A)	1/13/2004	1 U
MW-34(A)	MW-34 (A)	4/14/2004	1 U
MW-35(A)	MW-35 (A)	10/16/2003	1 U
MW-35(A)	MW-35 (A)	1/16/2004	1 U
MW-35(A)	MW-35 (A)	4/13/2004	1 U
MW-36(A)	MW-36(A)	10/21/2003	0.28 J
MW-36(A)	MW-36 (A)	1/14/2004	1 U
MW-36(A)	MW-36 (A)	4/14/2004	1 U
MW-37(A)	MW-37 (A)	10/17/2003	30.6
MW-38(A)	MW-38(A)	10/21/2003	1 U

TABLE 5**RBDM VOCs IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Xylenes
			ug/L
MW-38(A)	MW-38 (A)	1/14/2004	1 U
MW-38(A)	MW-38 (A)	4/14/2004	1 U
MW-39(A)	MW-39 (A)	10/16/2003	21.6
MW-39(A)	MW-39 (A)	1/16/2004	28.8
MW-39(A)	MW-39 (A)	4/14/2004	11.7
MW-40(A)	MW-40 (A)	10/17/2003	367
MW-40(A)	MW-40(A)	1/20/2004	6460
MW-40(A)	MW-40(A)	4/16/2004	8150
MW-41(A)	MW-41(A)	10/14/2003	192
MW-42(A)	MW-42 (A)	10/15/2003	370
MW-43(A)	MW-43(A)	10/13/2003	1 U
MW-43(A)	MW-43 (A)	1/12/2004	1 U
MW-43(A)	MW-43 (A)	4/13/2004	1 U
MW-44(A)	MW-44 (A)	10/17/2003	14900
MW-45(A)	MW-45 (A)	10/16/2003	1 U
MW-45(A)	MW-45 (A)	1/16/2004	1 U
MW-45(A)	MW-45 (A)	4/14/2004	1 U
MW-46(A)	MW-46(A)	10/14/2003	1 U
MW-46(A)	MW-46(A)	1/14/2004	1 U

TABLE 5**RBDM VOCs IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Xylenes
			ug/L
MW-46(A)	MW-46 (A)	4/12/2004	1 U
MW-47(A)	MW-47(A)	10/13/2003	1 U
MW-47(A)	MW-47 (A)	1/14/2004	1 U
MW-47(A)	MW-47 (A)	4/12/2004	1 U
MW-48(A)	MW-48(A)	10/14/2003	1 U
MW-48(A)	MW-48 (A)	1/14/2004	1 U
MW-48(A)	MW-48 (A)	4/12/2004	1 U
R-1(M)	R-1(M)	10/22/2003	1 U

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.0811	0.05 U	0.05 U	0.01 U	0.01 U
MW-1(F)	MW-1-082302	8/23/2002					
MW-1(F)	MW-1(F)	10/22/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-1(F)	MW-1(F)	10/22/2003					
MW-1(F)	MW-1 (F)	1/15/2004	0.186	0.0998	0.05 U	0.01 U	0.01 U
MW-1(F)	MW-1 (F)	1/15/2004					
MW-1(F)	MW-1(F)	4/15/2004	0.112	0.0544	0.05 U	0.01 U	0.01 U
MW-1(F)	MW-1(F)	4/15/2004					
MW-2(M)	MW-2(M)	6/19/2003	1.44	0.5 U	0.5 U	0.5 U	0.5 U
MW-2(M)	MW-2(M)	6/19/2003					
MW-2(M)	MW-2 (M)	10/15/2003	0.638	0.05 U	0.0568	0.01 U	0.01 U
MW-2(M)	MW-2 (M)	10/15/2003					
MW-2(M)	MW-2 (M)	1/12/2004	0.54	0.15 U	0.1 U	0.02 U	0.02 U
MW-2(M)	MW-2 (M)	1/12/2004					
MW-2(M)	MW-2(M)	4/14/2004	0.644	0.5 U	0.5 U	0.1 U	0.1 U
MW-2(M)	MW-2(M)	4/14/2004					
MW-6(M)	MW-6(M)	6/19/2003	0.214	0.1 U	0.1 U	0.1 U	0.1 U
MW-6(M)	MW-6(M)	6/19/2003					
MW-6(M)	MW-6(M)	10/22/2003	0.146	0.05 U	0.05 U	0.01 U	0.01 U
MW-6(M)	MW-6(M)	10/22/2003					
MW-6(M)	MW-6 (M)	1/12/2004	0.167	0.05 U	0.05 U	0.011	0.01 U
MW-6(M)	MW-6 (M)	1/12/2004					
MW-6(M)	MW-6 (M)	4/13/2004	0.153	0.05 U	0.05 U	0.01 U	0.01 U
MW-6(M)	MW-6 (M)	4/13/2004					
MW-7(M)	BM-7(M)	6/19/2003	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Acenaphthene ug/L	Acenaphthylene ug/L	Anthracene ug/L	Benzo(a) anthracene ug/L	Benzo(a) pyrene ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.0811	0.05 U	0.05 U	0.01 U	0.01 U
MW-7(M)	BM-7(M)	6/19/2003					
MW-7(M)	MW-7(M)	6/19/2003	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
MW-7(M)	MW-7(M)	6/19/2003					
MW-7(M)	MW-7(M)	10/13/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-7(M)	MW-7(M)	10/13/2003					
MW-7(M)	MW-7 (M)	1/12/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-7(M)	MW-7 (M)	1/12/2004					
MW-7(M)	MW-7 (M)	4/12/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-7(M)	MW-7 (M)	4/12/2004					
MW-10(M)	MW-10(M)	6/19/2003	2 U	2 U	0.5 U	0.5 U	0.5 U
MW-10(M)	MW-10(M)	6/19/2003					
MW-10(M)	MW-10 (M)	10/15/2003	0.28	0.05 U	0.05 U	0.0475	0.069
MW-10(M)	MW-10 (M)	10/15/2003					
MW-10(M)	MW-10 (M)	1/13/2004	1 U	1 U	0.05 U	0.0114	0.0105
MW-10(M)	MW-10 (M)	1/13/2004					
MW-10(M)	MW-10 (M)	4/13/2004	0.375	0.1 U	0.1 U	0.02 U	0.02 U
MW-10(M)	MW-10 (M)	4/13/2004					
MW-11(M)	MW-11(M)	6/19/2003	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
MW-11(M)	MW-11(M)	6/19/2003					
MW-11(M)	MW-11 (M)	10/15/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-11(M)	MW-11 (M)	10/15/2003					
MW-11(M)	MW-11 (M)	1/13/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-11(M)	MW-11 (M)	1/13/2004					
MW-11(M)	MW-11 (M)	4/13/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-11(M)	MW-11 (M)	4/13/2004					

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.0811	0.05 U	0.05 U	0.01 U	0.01 U
MW-12(A)	MW-12(A)	10/22/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-12(A)	MW-12(A)	10/22/2003					
MW-12(A)	MW-12 (A)	1/15/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-12(A)	MW-12 (A)	1/15/2004					
MW-12(A)	MW-12(A)	4/16/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-12(A)	MW-12(A)	4/16/2004					
MW-13(A)	MW-13(A)	10/22/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-13(A)	MW-13(A)	10/22/2003					
MW-13(A)	MW-13 (A)	1/15/2004	0.1 U	0.1 U	0.1 U	0.02 U	0.02 U
MW-13(A)	MW-13 (A)	1/15/2004					
MW-13(A)	MW-13(A)	4/16/2004	0.1 U	0.1 U	0.1 U	0.02 U	0.02 U
MW-13(A)	MW-13(A)	4/16/2004					
MW-14(A)	MW-14(A)	10/21/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-14(A)	MW-14(A)	10/21/2003					
MW-14(A)	MW-14 (A)	1/15/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-14(A)	MW-14 (A)	1/15/2004					
MW-14(A)	MW-14(A)	4/16/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-14(A)	MW-14(A)	4/16/2004					
MW-15(A)	MW-15(A)	10/20/2003	0.0916	0.05 U	0.05 U	0.01 U	0.01 U
MW-15(A)	MW-15(A)	10/20/2003					
MW-16(A)	MW-16(A)	10/20/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-16(A)	MW-16(A)	10/20/2003					

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.0811	0.05 U	0.05 U	0.01 U	0.01 U
MW-16(A)	MW-16(A)	1/19/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-16(A)	MW-16(A)	1/19/2004					
MW-16(A)	MW-16(A)	4/15/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-16(A)	MW-16(A)	4/15/2004					
MW-17(A)	MW-17 (A)	10/17/2003	0.0612	0.05 U	0.05 U	0.01 U	0.01 U
MW-17(A)	MW-17 (A)	10/17/2003					
MW-17(A)	BM-17(A)	1/19/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-17(A)	BM-17(A)	1/19/2004					
MW-17(A)	MW-17(A)	1/19/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-17(A)	MW-17(A)	1/19/2004					
MW-17(A)	MW-17(A)	4/15/2004	0.0532	0.05 U	0.05 U	0.01 U	0.01 U
MW-17(A)	MW-17(A)	4/15/2004					
MW-18(A)	MW-18(A)	10/21/2003	0.517	0.05 U	0.05 U	0.01 U	0.01 U
MW-18(A)	MW-18(A)	10/21/2003					
MW-18(A)	MW-18(A)	1/19/2004	0.632	0.1 U	0.05 U	0.01 U	0.01 U
MW-18(A)	MW-18(A)	1/19/2004					
MW-18(A)	MW-18(A)	4/15/2004	0.312	0.05 U	0.05 U	0.01 U	0.01 U
MW-18(A)	MW-18(A)	4/15/2004					
MW-19(A)	BM-19(A)	10/20/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-19(A)	BM-19(A)	10/20/2003					
MW-19(A)	MW-19(A)	10/20/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-19(A)	MW-19(A)	10/20/2003					
MW-19(A)	MW-19 (A)	1/13/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-19(A)	MW-19 (A)	1/13/2004					

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Acenaphthene ug/L	Acenaphthylene ug/L	Anthracene ug/L	Benzo(a) anthracene ug/L	Benzo(a) pyrene ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.0811	0.05 U	0.05 U	0.01 U	0.01 U
MW-19(A)	MW-19(A)	4/15/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-19(A)	MW-19(A)	4/15/2004					
MW-20(A)	MW-20(A)	10/20/2003	0.318	0.05 U	0.05 U	0.01 U	0.01 U
MW-20(A)	MW-20(A)	10/20/2003					
MW-20(A)	MW-20 (A)	1/13/2004	0.345	0.075 U	0.05 U	0.01 U	0.01 U
MW-20(A)	MW-20 (A)	1/13/2004					
MW-20(A)	MW-20(A)	4/15/2004	0.184	0.1 U	0.1 U	0.02 U	0.02 U
MW-20(A)	MW-20(A)	4/15/2004					
MW-21(A)	MW-21(A)	10/20/2003	0.224	0.05 U	0.05 U	0.01 U	0.01 U
MW-21(A)	MW-21(A)	10/20/2003					
MW-21(A)	BM-21 (A)	1/13/2004	0.253	0.05 U	0.05 U	0.01 U	0.01 U
MW-21(A)	BM-21 (A)	1/13/2004					
MW-21(A)	MW-21 (A)	1/13/2004	0.185	0.05 U	0.05 U	0.01 U	0.01 U
MW-21(A)	MW-21 (A)	1/13/2004					
MW-21(A)	MW-21(A)	4/16/2004	0.5 U	0.5 U	0.5 U	0.02 U	0.02 U
MW-21(A)	MW-21(A)	4/16/2004					
MW-22(A)	MW-22 (A)	10/16/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-22(A)	MW-22 (A)	10/16/2003					
MW-22(A)	MW-22(A)	1/19/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-22(A)	MW-22(A)	1/19/2004					
MW-22(A)	MW-22(A)	4/15/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-22(A)	MW-22(A)	4/15/2004					
MW-23(A)	MW-23(A)	10/20/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Acenaphthene ug/L	Acenaphthylene ug/L	Anthracene ug/L	Benzo(a) anthracene ug/L	Benzo(a) pyrene ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.0811	0.05 U	0.05 U	0.01 U	0.01 U
MW-23(A)	MW-23(A)	10/20/2003					
MW-23(A)	MW-23 (A)	1/15/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-23(A)	MW-23 (A)	1/15/2004					
MW-23(A)	BM-23(A)	4/15/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-23(A)	BM-23(A)	4/15/2004					
MW-23(A)	MW-23(A)	4/15/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-23(A)	MW-23(A)	4/15/2004					
MW-24(A)	MW-24(A)	10/21/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-24(A)	MW-24(A)	10/21/2003					
MW-24(A)	MW-24 (A)	1/15/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-24(A)	MW-24 (A)	1/15/2004					
MW-24(A)	MW-24(A)	4/14/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-24(A)	MW-24(A)	4/14/2004					
MW-26(A)	MW-26 (A)	10/17/2003	5 U	5 U	5 U	0.01 U	0.01 U
MW-26(A)	MW-26 (A)	10/17/2003					
MW-26(A)	MW-26 (A)	1/15/2004	0.0687	0.05 U	0.05 U	0.01 U	0.01 U
MW-26(A)	MW-26 (A)	1/15/2004					
MW-26(A)	MW-26(A)	4/14/2004	0.0548	0.05 U	0.05 U	0.01 U	0.01 U
MW-26(A)	MW-26(A)	4/14/2004					
MW-27(A)	MW-27(A)	10/21/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-27(A)	MW-27(A)	10/21/2003					
MW-27(A)	MW-27 (A)	1/14/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-27(A)	MW-27 (A)	1/14/2004					
MW-27(A)	MW-27 (A)	4/14/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.0811	0.05 U	0.05 U	0.01 U	0.01 U
MW-27(A)	MW-27 (A)	4/14/2004					
MW-28(A)	MW-28 (A)	10/17/2003	5 U	5 U	5 U	0.01 U	0.01 U
MW-28(A)	MW-28 (A)	10/17/2003					
MW-28(A)	MW-28(A)	1/19/2004	0.0548	0.05 U	0.05 U	0.01 U	0.01 U
MW-28(A)	MW-28(A)	1/19/2004					
MW-28(A)	MW-28(A)	4/14/2004	0.0555	0.05 U	0.05 U	0.01 U	0.01 U
MW-28(A)	MW-28(A)	4/14/2004					
MW-29(A)	MW-29(A)	10/21/2003	0.0959	0.05 U	0.05 U	0.01 U	0.01 U
MW-29(A)	MW-29(A)	10/21/2003					
MW-29(A)	MW-29(A)	1/19/2004	0.126	0.05 U	0.05 U	0.01 U	0.01 U
MW-29(A)	MW-29(A)	1/19/2004					
MW-29(A)	MW-29(A)	4/16/2004	0.1 U	0.1 U	0.1 U	0.02 U	0.02 U
MW-29(A)	MW-29(A)	4/16/2004					
MW-30(A)	MW-30 (A)	10/16/2003	0.0531	0.05 U	0.05 U	0.01 U	0.01 U
MW-30(A)	MW-30 (A)	10/16/2003					
MW-30(A)	MW-30 (A)	1/16/2004	0.0751	0.05 U	0.05 U	0.01 U	0.01 U
MW-30(A)	MW-30 (A)	1/16/2004					
MW-30(A)	MW-30 (A)	4/13/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-30(A)	MW-30 (A)	4/13/2004					
MW-31(A)	BM-31 (A)	10/16/2003	0.0594	0.05 U	0.05 U	0.01 U	0.01 U
MW-31(A)	BM-31 (A)	10/16/2003					
MW-31(A)	MW-31 (A)	10/16/2003	0.0661	0.05 U	0.05 U	0.01 U	0.01 U
MW-31(A)	MW-31 (A)	10/16/2003					

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.0811	0.05 U	0.05 U	0.01 U	0.01 U
MW-31(A)	MW-31 (A)	1/12/2004	0.096	0.05 U	0.05 U	0.01 U	0.01 U
MW-31(A)	MW-31 (A)	1/12/2004					
MW-31(A)	BM-31 (A)	4/13/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-31(A)	BM-31 (A)	4/13/2004					
MW-31(A)	MW-31 (A)	4/13/2004	0.1 U	0.1 U	0.1 U	0.02 U	0.02 U
MW-31(A)	MW-31 (A)	4/13/2004					
MW-32(A)	MW-32(A)	10/14/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-32(A)	MW-32(A)	10/14/2003					
MW-32(A)	MW-32 (A)	1/12/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-32(A)	MW-32 (A)	1/12/2004					
MW-32(A)	MW-32 (A)	4/13/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-32(A)	MW-32 (A)	4/13/2004					
MW-33(A)	MW-33(A)	10/14/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-33(A)	MW-33(A)	10/14/2003					
MW-33(A)	MW-33 (A)	1/12/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-33(A)	MW-33 (A)	1/12/2004					
MW-33(A)	MW-33 (A)	4/13/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-33(A)	MW-33 (A)	4/13/2004					
MW-34(A)	MW-34(A)	10/14/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-34(A)	MW-34(A)	10/14/2003					
MW-34(A)	MW-34 (A)	1/13/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-34(A)	MW-34 (A)	1/13/2004					
MW-34(A)	MW-34 (A)	4/14/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-34(A)	MW-34 (A)	4/14/2004					

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.0811	0.05 U	0.05 U	0.01 U	0.01 U
MW-35(A)	MW-35 (A)	10/16/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-35(A)	MW-35 (A)	10/16/2003					
MW-35(A)	MW-35 (A)	1/16/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-35(A)	MW-35 (A)	1/16/2004					
MW-35(A)	MW-35 (A)	4/13/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-35(A)	MW-35 (A)	4/13/2004					
MW-36(A)	MW-36(A)	10/21/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-36(A)	MW-36(A)	10/21/2003					
MW-36(A)	MW-36 (A)	1/14/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-36(A)	MW-36 (A)	1/14/2004					
MW-36(A)	MW-36 (A)	4/14/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-36(A)	MW-36 (A)	4/14/2004					
MW-37(A)	MW-37 (A)	10/17/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-37(A)	MW-37 (A)	10/17/2003					
MW-38(A)	MW-38(A)	10/21/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-38(A)	MW-38(A)	10/21/2003					
MW-38(A)	MW-38 (A)	1/14/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-38(A)	MW-38 (A)	1/14/2004					
MW-38(A)	MW-38 (A)	4/14/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-38(A)	MW-38 (A)	4/14/2004					
MW-39(A)	MW-39 (A)	10/16/2003	1.04	0.05 U	0.137	0.01 U	0.01 U
MW-39(A)	MW-39 (A)	10/16/2003					

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Acenaphthene ug/L	Acenaphthylene ug/L	Anthracene ug/L	Benzo(a) anthracene ug/L	Benzo(a) pyrene ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.0811	0.05 U	0.05 U	0.01 U	0.01 U
MW-39(A)	MW-39 (A)	1/16/2004	0.598	0.125 U	0.0715	0.01 U	0.01 U
MW-39(A)	MW-39 (A)	1/16/2004					
MW-39(A)	MW-39 (A)	4/14/2004	0.462	0.1 U	0.0707	0.01 U	0.01 U
MW-39(A)	MW-39 (A)	4/14/2004					
MW-40(A)	MW-40 (A)	10/17/2003	0.727	0.05 U	0.05 U	0.01 U	0.01 U
MW-40(A)	MW-40 (A)	10/17/2003					
MW-40(A)	MW-40(A)	1/20/2004	0.553	0.15 U	0.1 U	0.02 U	0.02 U
MW-40(A)	MW-40(A)	1/20/2004					
MW-40(A)	MW-40(A)	4/16/2004	0.822	0.3 U	0.2 U	0.04 U	0.04 U
MW-40(A)	MW-40(A)	4/16/2004					
MW-41(A)	MW-41(A)	10/14/2003	2.45	1.25 U U	1.25 U U	0.01 U	0.01 U
MW-41(A)	MW-41(A)	10/14/2003					
MW-42(A)	MW-42 (A)	10/15/2003	1.1	0.05 U U	0.0893	0.01 U	0.01 U
MW-42(A)	MW-42 (A)	10/15/2003					
MW-43(A)	MW-43(A)	10/13/2003	0.05 U U	0.05 U U	0.05 U U	0.01 U	0.01 U
MW-43(A)	MW-43(A)	10/13/2003					
MW-43(A)	MW-43 (A)	1/12/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-43(A)	MW-43 (A)	1/12/2004					
MW-43(A)	MW-43 (A)	4/13/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-43(A)	MW-43 (A)	4/13/2004					
MW-44(A)	MW-44 (A)	10/17/2003	0.194	0.05 U U	0.08 U U	0.01 U	0.01 U
MW-44(A)	MW-44 (A)	10/17/2003					

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.0811	0.05 U	0.05 U	0.01 U	0.01 U
MW-45(A)	MW-45 (A)	10/16/2003	0.05 U U	0.05 U U	0.05 U U	0.01 U	0.01 U
MW-45(A)	MW-45 (A)	10/16/2003					
MW-45(A)	MW-45 (A)	1/16/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-45(A)	MW-45 (A)	1/16/2004					
MW-45(A)	MW-45 (A)	4/14/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-45(A)	MW-45 (A)	4/14/2004					
MW-46(A)	MW-46(A)	10/14/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-46(A)	MW-46(A)	10/14/2003					
MW-46(A)	MW-46(A)	1/14/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-46(A)	MW-46(A)	1/14/2004					
MW-46(A)	MW-46 (A)	4/12/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-46(A)	MW-46 (A)	4/12/2004					
MW-47(A)	MW-47(A)	10/13/2003	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-47(A)	MW-47(A)	10/13/2003					
MW-47(A)	MW-47 (A)	1/14/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-47(A)	MW-47 (A)	1/14/2004					
MW-47(A)	MW-47 (A)	4/12/2004	0.05 U	0.05 U	0.05 U	0.01 U	0.01 U
MW-47(A)	MW-47 (A)	4/12/2004					
MW-48(A)	MW-48(A)	10/14/2003	0.362	0.05 U	0.05 U	0.0127	0.01 U
MW-48(A)	MW-48(A)	10/14/2003					
MW-48(A)	MW-48 (A)	1/14/2004	0.176	0.05 U	0.05 U	0.01 U	0.01 U
MW-48(A)	MW-48 (A)	1/14/2004					
MW-48(A)	MW-48 (A)	4/12/2004	0.117	0.05 U	0.05 U	0.0109	0.0104

TABLE 6**SVOCs IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-1(F) MW-48(A)	MW-1-082302 MW-48 (A)	8/23/2002 4/12/2004	0.0811	0.05 U	0.05 U	0.01 U	0.01 U
R-1(M) R-1(M)	R-1(M) R-1(M)	10/22/2003 10/22/2003	0.0873	0.05 U	0.05 U	0.01 U	0.01 U

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Benzo(b) fluoranthene ug/L	Benzo(g,h,i) perylene ug/L	Benzo(k) fluoranthene ug/L	Chrysene ug/L	Dibenzo(a,h) anthracene ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-1(F)	MW-1-082302	8/23/2002					
MW-1(F)	MW-1(F)	10/22/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-1(F)	MW-1(F)	10/22/2003					
MW-1(F)	MW-1 (F)	1/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-1(F)	MW-1 (F)	1/15/2004					
MW-1(F)	MW-1(F)	4/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-1(F)	MW-1(F)	4/15/2004					
MW-2(M)	MW-2(M)	6/19/2003	0.5 U	0.5 U	0.5 U	0.5 U	1 U
MW-2(M)	MW-2(M)	6/19/2003					
MW-2(M)	MW-2 (M)	10/15/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-2(M)	MW-2 (M)	10/15/2003					
MW-2(M)	MW-2 (M)	1/12/2004	0.02 U	0.1 U	0.02 U	0.02 U	0.02 U
MW-2(M)	MW-2 (M)	1/12/2004					
MW-2(M)	MW-2(M)	4/14/2004	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U
MW-2(M)	MW-2(M)	4/14/2004					
MW-6(M)	MW-6(M)	6/19/2003	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U
MW-6(M)	MW-6(M)	6/19/2003					
MW-6(M)	MW-6(M)	10/22/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-6(M)	MW-6(M)	10/22/2003					
MW-6(M)	MW-6 (M)	1/12/2004	0.01 U	0.05 U	0.01 U	0.013	0.01 U
MW-6(M)	MW-6 (M)	1/12/2004					
MW-6(M)	MW-6 (M)	4/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-6(M)	MW-6 (M)	4/13/2004					
MW-7(M)	BM-7(M)	6/19/2003	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenzo(a,h) anthracene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-7(M)	BM-7(M)	6/19/2003					
MW-7(M)	MW-7(M)	6/19/2003	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U
MW-7(M)	MW-7(M)	6/19/2003					
MW-7(M)	MW-7(M)	10/13/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-7(M)	MW-7(M)	10/13/2003					
MW-7(M)	MW-7 (M)	1/12/2004	0.01 U	0.05 U	0.01 U	0.0104	0.01 U
MW-7(M)	MW-7 (M)	1/12/2004					
MW-7(M)	MW-7 (M)	4/12/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-7(M)	MW-7 (M)	4/12/2004					
MW-10(M)	MW-10(M)	6/19/2003	0.5 U	0.5 U	0.5 U	0.5 U	1 U
MW-10(M)	MW-10(M)	6/19/2003					
MW-10(M)	MW-10 (M)	10/15/2003	0.0625	0.05 U	0.0548	0.0554	0.0172
MW-10(M)	MW-10 (M)	10/15/2003					
MW-10(M)	MW-10 (M)	1/13/2004	0.0124	0.05 U	0.01 U	0.0144	0.01 U
MW-10(M)	MW-10 (M)	1/13/2004					
MW-10(M)	MW-10 (M)	4/13/2004	0.02 U	0.1 U	0.02 U	0.02 U	0.02 U
MW-10(M)	MW-10 (M)	4/13/2004					
MW-11(M)	MW-11(M)	6/19/2003	0.1 U	0.1 U	0.1 U	0.1 U	0.2 U
MW-11(M)	MW-11(M)	6/19/2003					
MW-11(M)	MW-11 (M)	10/15/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-11(M)	MW-11 (M)	10/15/2003					
MW-11(M)	MW-11 (M)	1/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-11(M)	MW-11 (M)	1/13/2004					
MW-11(M)	MW-11 (M)	4/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-11(M)	MW-11 (M)	4/13/2004					

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

Locator ID	Sample ID	Sample Date	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenzo(a,h) anthracene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-12(A)	MW-12(A)	10/22/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-12(A)	MW-12(A)	10/22/2003					
MW-12(A)	MW-12 (A)	1/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-12(A)	MW-12 (A)	1/15/2004					
MW-12(A)	MW-12(A)	4/16/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-12(A)	MW-12(A)	4/16/2004					
MW-13(A)	MW-13(A)	10/22/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-13(A)	MW-13(A)	10/22/2003					
MW-13(A)	MW-13 (A)	1/15/2004	0.02 U	0.1 U	0.02 U	0.02 U	0.02 U
MW-13(A)	MW-13 (A)	1/15/2004					
MW-13(A)	MW-13(A)	4/16/2004	0.02 U	0.1 U	0.02 U	0.02 U	0.02 U
MW-13(A)	MW-13(A)	4/16/2004					
MW-14(A)	MW-14(A)	10/21/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-14(A)	MW-14(A)	10/21/2003					
MW-14(A)	MW-14 (A)	1/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-14(A)	MW-14 (A)	1/15/2004					
MW-14(A)	MW-14(A)	4/16/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-14(A)	MW-14(A)	4/16/2004					
MW-15(A)	MW-15(A)	10/20/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-15(A)	MW-15(A)	10/20/2003					
MW-16(A)	MW-16(A)	10/20/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-16(A)	MW-16(A)	10/20/2003					

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SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Benzo(b) fluoranthene ug/L	Benzo(g,h,i) perylene ug/L	Benzo(k) fluoranthene ug/L	Chrysene ug/L	Dibenzo(a,h) anthracene ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-16(A)	MW-16(A)	1/19/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-16(A)	MW-16(A)	1/19/2004					
MW-16(A)	MW-16(A)	4/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-16(A)	MW-16(A)	4/15/2004					
MW-17(A)	MW-17 (A)	10/17/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-17(A)	MW-17 (A)	10/17/2003					
MW-17(A)	BM-17(A)	1/19/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-17(A)	BM-17(A)	1/19/2004					
MW-17(A)	MW-17(A)	1/19/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-17(A)	MW-17(A)	1/19/2004					
MW-17(A)	MW-17(A)	4/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-17(A)	MW-17(A)	4/15/2004					
MW-18(A)	MW-18(A)	10/21/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-18(A)	MW-18(A)	10/21/2003					
MW-18(A)	MW-18(A)	1/19/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-18(A)	MW-18(A)	1/19/2004					
MW-18(A)	MW-18(A)	4/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-18(A)	MW-18(A)	4/15/2004					
MW-19(A)	BM-19(A)	10/20/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-19(A)	BM-19(A)	10/20/2003					
MW-19(A)	MW-19(A)	10/20/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-19(A)	MW-19(A)	10/20/2003					
MW-19(A)	MW-19 (A)	1/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-19(A)	MW-19 (A)	1/13/2004					

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SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenzo(a,h) anthracene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-19(A)	MW-19(A)	4/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-19(A)	MW-19(A)	4/15/2004					
MW-20(A)	MW-20(A)	10/20/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-20(A)	MW-20(A)	10/20/2003					
MW-20(A)	MW-20 (A)	1/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-20(A)	MW-20 (A)	1/13/2004					
MW-20(A)	MW-20(A)	4/15/2004	0.02 U	0.1 U	0.02 U	0.02 U	0.02 U
MW-20(A)	MW-20(A)	4/15/2004					
MW-21(A)	MW-21(A)	10/20/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-21(A)	MW-21(A)	10/20/2003					
MW-21(A)	BM-21 (A)	1/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-21(A)	BM-21 (A)	1/13/2004					
MW-21(A)	MW-21 (A)	1/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-21(A)	MW-21 (A)	1/13/2004					
MW-21(A)	MW-21(A)	4/16/2004	0.02 U	0.1 U	0.02 U	0.02 U	0.02 U
MW-21(A)	MW-21(A)	4/16/2004					
MW-22(A)	MW-22 (A)	10/16/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-22(A)	MW-22 (A)	10/16/2003					
MW-22(A)	MW-22(A)	1/19/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-22(A)	MW-22(A)	1/19/2004					
MW-22(A)	MW-22(A)	4/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-22(A)	MW-22(A)	4/15/2004					
MW-23(A)	MW-23(A)	10/20/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenzo(a,h) anthracene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-23(A)	MW-23(A)	10/20/2003					
MW-23(A)	MW-23 (A)	1/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-23(A)	MW-23 (A)	1/15/2004					
MW-23(A)	BM-23(A)	4/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-23(A)	BM-23(A)	4/15/2004					
MW-23(A)	MW-23(A)	4/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-23(A)	MW-23(A)	4/15/2004					
MW-24(A)	MW-24(A)	10/21/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-24(A)	MW-24(A)	10/21/2003					
MW-24(A)	MW-24 (A)	1/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-24(A)	MW-24 (A)	1/15/2004					
MW-24(A)	MW-24(A)	4/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-24(A)	MW-24(A)	4/14/2004					
MW-26(A)	MW-26 (A)	10/17/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-26(A)	MW-26 (A)	10/17/2003					
MW-26(A)	MW-26 (A)	1/15/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-26(A)	MW-26 (A)	1/15/2004					
MW-26(A)	MW-26(A)	4/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-26(A)	MW-26(A)	4/14/2004					
MW-27(A)	MW-27(A)	10/21/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-27(A)	MW-27(A)	10/21/2003					
MW-27(A)	MW-27 (A)	1/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-27(A)	MW-27 (A)	1/14/2004					
MW-27(A)	MW-27 (A)	4/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Benzo(b) fluoranthene ug/L	Benzo(g,h,i) perylene ug/L	Benzo(k) fluoranthene ug/L	Chrysene ug/L	Dibenzo(a,h) anthracene ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-27(A)	MW-27 (A)	4/14/2004					
MW-28(A)	MW-28 (A)	10/17/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-28(A)	MW-28 (A)	10/17/2003					
MW-28(A)	MW-28(A)	1/19/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-28(A)	MW-28(A)	1/19/2004					
MW-28(A)	MW-28(A)	4/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-28(A)	MW-28(A)	4/14/2004					
MW-29(A)	MW-29(A)	10/21/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-29(A)	MW-29(A)	10/21/2003					
MW-29(A)	MW-29(A)	1/19/2004	0.01 U	0.05 U	0.01 U	0.0125	0.01 U
MW-29(A)	MW-29(A)	1/19/2004					
MW-29(A)	MW-29(A)	4/16/2004	0.02 U	0.1 U	0.02 U	0.02 U	0.02 U
MW-29(A)	MW-29(A)	4/16/2004					
MW-30(A)	MW-30 (A)	10/16/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-30(A)	MW-30 (A)	10/16/2003					
MW-30(A)	MW-30 (A)	1/16/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-30(A)	MW-30 (A)	1/16/2004					
MW-30(A)	MW-30 (A)	4/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-30(A)	MW-30 (A)	4/13/2004					
MW-31(A)	BM-31 (A)	10/16/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-31(A)	BM-31 (A)	10/16/2003					
MW-31(A)	MW-31 (A)	10/16/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-31(A)	MW-31 (A)	10/16/2003					

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Benzo(b) fluoranthene ug/L	Benzo(g,h,i) perylene ug/L	Benzo(k) fluoranthene ug/L	Chrysene ug/L	Dibenzo(a,h) anthracene ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-31(A)	MW-31 (A)	1/12/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-31(A)	MW-31 (A)	1/12/2004					
MW-31(A)	BM-31 (A)	4/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-31(A)	BM-31 (A)	4/13/2004					
MW-31(A)	MW-31 (A)	4/13/2004	0.02 U	0.1 U	0.02 U	0.02 U	0.02 U
MW-31(A)	MW-31 (A)	4/13/2004					
MW-32(A)	MW-32(A)	10/14/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-32(A)	MW-32(A)	10/14/2003					
MW-32(A)	MW-32 (A)	1/12/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-32(A)	MW-32 (A)	1/12/2004					
MW-32(A)	MW-32 (A)	4/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-32(A)	MW-32 (A)	4/13/2004					
MW-33(A)	MW-33(A)	10/14/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-33(A)	MW-33(A)	10/14/2003					
MW-33(A)	MW-33 (A)	1/12/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-33(A)	MW-33 (A)	1/12/2004					
MW-33(A)	MW-33 (A)	4/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-33(A)	MW-33 (A)	4/13/2004					
MW-34(A)	MW-34(A)	10/14/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-34(A)	MW-34(A)	10/14/2003					
MW-34(A)	MW-34 (A)	1/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-34(A)	MW-34 (A)	1/13/2004					
MW-34(A)	MW-34 (A)	4/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-34(A)	MW-34 (A)	4/14/2004					

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenzo(a,h) anthracene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-35(A)	MW-35 (A)	10/16/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-35(A)	MW-35 (A)	10/16/2003					
MW-35(A)	MW-35 (A)	1/16/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-35(A)	MW-35 (A)	1/16/2004					
MW-35(A)	MW-35 (A)	4/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-35(A)	MW-35 (A)	4/13/2004					
MW-36(A)	MW-36(A)	10/21/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-36(A)	MW-36(A)	10/21/2003					
MW-36(A)	MW-36 (A)	1/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-36(A)	MW-36 (A)	1/14/2004					
MW-36(A)	MW-36 (A)	4/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-36(A)	MW-36 (A)	4/14/2004					
MW-37(A)	MW-37 (A)	10/17/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-37(A)	MW-37 (A)	10/17/2003					
MW-38(A)	MW-38(A)	10/21/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-38(A)	MW-38(A)	10/21/2003					
MW-38(A)	MW-38 (A)	1/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-38(A)	MW-38 (A)	1/14/2004					
MW-38(A)	MW-38 (A)	4/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-38(A)	MW-38 (A)	4/14/2004					
MW-39(A)	MW-39 (A)	10/16/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-39(A)	MW-39 (A)	10/16/2003					

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenzo(a,h) anthracene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-39(A)	MW-39 (A)	1/16/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-39(A)	MW-39 (A)	1/16/2004					
MW-39(A)	MW-39 (A)	4/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-39(A)	MW-39 (A)	4/14/2004					
MW-40(A)	MW-40 (A)	10/17/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-40(A)	MW-40 (A)	10/17/2003					
MW-40(A)	MW-40(A)	1/20/2004	0.02 U	0.1 U	0.02 U	0.02 U	0.02 U
MW-40(A)	MW-40(A)	1/20/2004					
MW-40(A)	MW-40(A)	4/16/2004	0.04 U	0.2 U	0.04 U	0.04 U	0.04 U
MW-40(A)	MW-40(A)	4/16/2004					
MW-41(A)	MW-41(A)	10/14/2003	0.01 U	0.05 U	0.01 U	0.02 U	0.01 U
MW-41(A)	MW-41(A)	10/14/2003					
MW-42(A)	MW-42 (A)	10/15/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-42(A)	MW-42 (A)	10/15/2003					
MW-43(A)	MW-43(A)	10/13/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-43(A)	MW-43(A)	10/13/2003					
MW-43(A)	MW-43 (A)	1/12/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-43(A)	MW-43 (A)	1/12/2004					
MW-43(A)	MW-43 (A)	4/13/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-43(A)	MW-43 (A)	4/13/2004					
MW-44(A)	MW-44 (A)	10/17/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-44(A)	MW-44 (A)	10/17/2003					

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenzo(a,h) anthracene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-45(A)	MW-45 (A)	10/16/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-45(A)	MW-45 (A)	10/16/2003					
MW-45(A)	MW-45 (A)	1/16/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-45(A)	MW-45 (A)	1/16/2004					
MW-45(A)	MW-45 (A)	4/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-45(A)	MW-45 (A)	4/14/2004					
MW-46(A)	MW-46(A)	10/14/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-46(A)	MW-46(A)	10/14/2003					
MW-46(A)	MW-46(A)	1/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-46(A)	MW-46(A)	1/14/2004					
MW-46(A)	MW-46 (A)	4/12/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-46(A)	MW-46 (A)	4/12/2004					
MW-47(A)	MW-47(A)	10/13/2003	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-47(A)	MW-47(A)	10/13/2003					
MW-47(A)	MW-47 (A)	1/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-47(A)	MW-47 (A)	1/14/2004					
MW-47(A)	MW-47 (A)	4/12/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-47(A)	MW-47 (A)	4/12/2004					
MW-48(A)	MW-48(A)	10/14/2003	0.01 U	0.05 U	0.01 U	0.0157	0.01 U
MW-48(A)	MW-48(A)	10/14/2003					
MW-48(A)	MW-48 (A)	1/14/2004	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-48(A)	MW-48 (A)	1/14/2004					
MW-48(A)	MW-48 (A)	4/12/2004	0.0105	0.05 U	0.01 U	0.0122	0.01 U

TABLE 6**SVOCs IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Benzo(b) fluoranthene	Benzo(g,h,i) perylene	Benzo(k) fluoranthene	Chrysene	Dibenzo(a,h) anthracene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.01 U	0.05 U	0.01 U	0.01 U	0.01 U
MW-48(A)	MW-48 (A)	4/12/2004					
R-1(M)	R-1(M)	10/22/2003	0.01 U	0.05 U	0.01 U	0.015	0.01 U
R-1(M)	R-1(M)	10/22/2003					

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Fluoranthene ug/L	Fluorene ug/L	Indeno(1,2, 3-cd)pyrene ug/L	Naphthalene ug/L	Phenanthrene ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U	0.12	0.01 U	2 U	0.05 U
MW-1(F)	MW-1-082302	8/23/2002				0.1 U	
MW-1(F)	MW-1(F)	10/22/2003	0.05 U	0.05 U	0.01 U	2 U B	0.05 U
MW-1(F)	MW-1(F)	10/22/2003				0.947	
MW-1(F)	MW-1 (F)	1/15/2004	0.05 U	0.209	0.01 U	0.3 J	0.0523
MW-1(F)	MW-1 (F)	1/15/2004				1.5 U	
MW-1(F)	MW-1(F)	4/15/2004	0.05 U	0.134	0.01 U	0.72 J	0.05 U
MW-1(F)	MW-1(F)	4/15/2004				2.3 U	
MW-2(M)	MW-2(M)	6/19/2003	0.5 U	2.16	0.5 U	656	1.45
MW-2(M)	MW-2(M)	6/19/2003				524	
MW-2(M)	MW-2 (M)	10/15/2003	0.0693	1.33	0.01 U	125	1.07
MW-2(M)	MW-2 (M)	10/15/2003				89.4	
MW-2(M)	MW-2 (M)	1/12/2004	0.1 U	0.78	0.02 U	4.08	0.669
MW-2(M)	MW-2 (M)	1/12/2004				3.42	
MW-2(M)	MW-2(M)	4/14/2004	0.5 U	0.88	0.1 U	334	0.748
MW-2(M)	MW-2(M)	4/14/2004				143	
MW-6(M)	MW-6(M)	6/19/2003	0.1 U	0.1 U	0.1 U	2 U	0.1 U
MW-6(M)	MW-6(M)	6/19/2003				0.1 U	
MW-6(M)	MW-6(M)	10/22/2003	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-6(M)	MW-6(M)	10/22/2003				0.05 U	
MW-6(M)	MW-6 (M)	1/12/2004	0.05 U	0.05 U	0.01 U	0.05 U	0.05 U
MW-6(M)	MW-6 (M)	1/12/2004				0.4	
MW-6(M)	MW-6 (M)	4/13/2004	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-6(M)	MW-6 (M)	4/13/2004				0.05 U	
MW-7(M)	BM-7(M)	6/19/2003	0.1 U	0.1 U	0.1 U	2 U	0.1 U

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Fluoranthene ug/L	Fluorene ug/L	Indeno(1,2, 3-cd)pyrene ug/L	Naphthalene ug/L	Phenanthrene ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U	0.12	0.01 U	2 U	0.05 U
MW-7(M)	BM-7(M)	6/19/2003				0.1 U	
MW-7(M)	MW-7(M)	6/19/2003	0.1 U	0.1 U	0.1 U	2 U	0.1 U
MW-7(M)	MW-7(M)	6/19/2003				0.1 U	
MW-7(M)	MW-7(M)	10/13/2003	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-7(M)	MW-7(M)	10/13/2003				0.05 U	
MW-7(M)	MW-7 (M)	1/12/2004	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-7(M)	MW-7 (M)	1/12/2004				0.05 U	
MW-7(M)	MW-7 (M)	4/12/2004	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-7(M)	MW-7 (M)	4/12/2004				0.05 U	
MW-10(M)	MW-10(M)	6/19/2003	0.5 U	2 U	0.5 U	20.6	0.5 U
MW-10(M)	MW-10(M)	6/19/2003				16.3	
MW-10(M)	MW-10 (M)	10/15/2003	0.0655	0.238	0.0408	65.3	0.104
MW-10(M)	MW-10 (M)	10/15/2003				12	
MW-10(M)	MW-10 (M)	1/13/2004	0.05 U	1 U	0.01 U	3 U	0.05 U
MW-10(M)	MW-10 (M)	1/13/2004				1.64	
MW-10(M)	MW-10 (M)	4/13/2004	0.1 U	0.187	0.02 U	5.07	0.1 U
MW-10(M)	MW-10 (M)	4/13/2004				5 U	
MW-11(M)	MW-11(M)	6/19/2003	0.1 U	0.1 U	0.1 U	2 U	0.1 U
MW-11(M)	MW-11(M)	6/19/2003				0.35 U	
MW-11(M)	MW-11 (M)	10/15/2003	0.05 U	0.05 U	0.01 U	0.66 J	0.05 U
MW-11(M)	MW-11 (M)	10/15/2003				0.4 U	
MW-11(M)	MW-11 (M)	1/13/2004	0.05 U	0.05 U	0.01 U	0.325 U	0.05 U
MW-11(M)	MW-11 (M)	1/13/2004				2 U	
MW-11(M)	MW-11 (M)	4/13/2004	0.05 U	0.05 U	0.01 U	0.25 U	0.05 U
MW-11(M)	MW-11 (M)	4/13/2004				0.51 J	

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Fluoranthene ug/L	Fluorene ug/L	Indeno(1,2, 3-cd)pyrene ug/L	Naphthalene ug/L	Phenanthrene ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U	0.12	0.01 U	2 U	0.05 U
MW-12(A)	MW-12(A)	10/22/2003	0.05 U	0.05 U	0.01 U	2 U B	0.05 U
MW-12(A)	MW-12(A)	10/22/2003				0.05 U	
MW-12(A)	MW-12 (A)	1/15/2004	0.05 U	0.05 U	0.01 U	0.05 U	0.05 U
MW-12(A)	MW-12 (A)	1/15/2004				2 U	
MW-12(A)	MW-12(A)	4/16/2004	0.05 U	0.05 U	0.01 U	0.0873	0.05 U
MW-12(A)	MW-12(A)	4/16/2004				2 U	
MW-13(A)	MW-13(A)	10/22/2003	0.05 U	0.05 U	0.01 U	122	0.05 U
MW-13(A)	MW-13(A)	10/22/2003				65.4	
MW-13(A)	MW-13 (A)	1/15/2004	0.1 U	0.1 U	0.02 U	75.7	0.1 U
MW-13(A)	MW-13 (A)	1/15/2004				223	
MW-13(A)	MW-13(A)	4/16/2004	0.1 U	0.1 U	0.02 U	282	0.1 U
MW-13(A)	MW-13(A)	4/16/2004				94.5	
MW-14(A)	MW-14(A)	10/21/2003	0.05 U	0.05 U	0.01 U	2 U B	0.05 U
MW-14(A)	MW-14(A)	10/21/2003				0.977	
MW-14(A)	MW-14 (A)	1/15/2004	0.05 U	0.05 U	0.01 U	0.19 J	0.05 U
MW-14(A)	MW-14 (A)	1/15/2004				0.05 U	
MW-14(A)	MW-14(A)	4/16/2004	0.05 U	0.05 U	0.01 U	0.05 U	0.05 U
MW-14(A)	MW-14(A)	4/16/2004				2 U	
MW-15(A)	MW-15(A)	10/20/2003	0.05 U	0.0941	0.01 U	2.11 J,B	0.106
MW-15(A)	MW-15(A)	10/20/2003				1.28	
MW-16(A)	MW-16(A)	10/20/2003	0.05 U	0.05 U	0.01 U	2 U B	0.05 U
MW-16(A)	MW-16(A)	10/20/2003				0.35 U	

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Fluoranthene ug/L	Fluorene ug/L	Indeno(1,2, 3-cd)pyrene ug/L	Naphthalene ug/L	Phenanthrene ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U	0.12	0.01 U	2 U	0.05 U
MW-16(A)	MW-16(A)	1/19/2004	0.05 U	0.05 U	0.01 U	0.28 J	0.05 U
MW-16(A)	MW-16(A)	1/19/2004				0.15 U	
MW-16(A)	MW-16(A)	4/15/2004	0.05 U	0.05 U	0.01 U	0.86 J	0.05 U
MW-16(A)	MW-16(A)	4/15/2004				0.45 U	
MW-17(A)	MW-17 (A)	10/17/2003	0.05 U	0.05 U	0.01 U	2.37	0.05 U
MW-17(A)	MW-17 (A)	10/17/2003				4.88	
MW-17(A)	BM-17(A)	1/19/2004	0.05 U	0.05 U	0.01 U	19.5	0.05 U
MW-17(A)	BM-17(A)	1/19/2004				0.125 U	
MW-17(A)	MW-17(A)	1/19/2004	0.05 U	0.05 U	0.01 U	19	0.05 U
MW-17(A)	MW-17(A)	1/19/2004				0.25 U	
MW-17(A)	MW-17(A)	4/15/2004	0.05 U	0.05 U	0.01 U	15.6	0.05 U
MW-17(A)	MW-17(A)	4/15/2004				5.04	
MW-18(A)	MW-18(A)	10/21/2003	0.05 U	0.22	0.01 U	4 U B	0.05 U
MW-18(A)	MW-18(A)	10/21/2003				0.44	
MW-18(A)	MW-18(A)	1/19/2004	0.05 U	0.39	0.01 U	1.53 J	0.05 U
MW-18(A)	MW-18(A)	1/19/2004				0.688	
MW-18(A)	MW-18(A)	4/15/2004	0.05 U	0.197	0.01 U	0.119	0.05 U
MW-18(A)	MW-18(A)	4/15/2004				0.99 J	
MW-19(A)	BM-19(A)	10/20/2003	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-19(A)	BM-19(A)	10/20/2003				0.05 U	
MW-19(A)	MW-19(A)	10/20/2003	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-19(A)	MW-19(A)	10/20/2003				0.05 U	
MW-19(A)	MW-19 (A)	1/13/2004	0.05 U	0.05 U	0.01 U	0.05 U	0.05 U
MW-19(A)	MW-19 (A)	1/13/2004				2 U	

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SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Fluoranthene ug/L	Fluorene ug/L	Indeno(1,2, 3-cd)pyrene ug/L	Naphthalene ug/L	Phenanthrene ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U	0.12	0.01 U	2 U	0.05 U
MW-19(A)	MW-19(A)	4/15/2004	0.05 U	0.05 U	0.01 U	0.128	0.05 U
MW-19(A)	MW-19(A)	4/15/2004				2 U	
MW-20(A)	MW-20(A)	10/20/2003	0.05 U	0.434	0.01 U	11.1	0.0697
MW-20(A)	MW-20(A)	10/20/2003				3.93	
MW-20(A)	MW-20 (A)	1/13/2004	0.05 U	0.527	0.01 U	9.6	0.0981
MW-20(A)	MW-20 (A)	1/13/2004				36.5	
MW-20(A)	MW-20(A)	4/15/2004	0.1 U	0.312	0.02 U	0.8 U	0.1 U
MW-20(A)	MW-20(A)	4/15/2004				1.94	
MW-21(A)	MW-21(A)	10/20/2003	0.05 U	0.327	0.01 U	3.04	0.09 U
MW-21(A)	MW-21(A)	10/20/2003				1.83	
MW-21(A)	BM-21 (A)	1/13/2004	0.05 U	0.374	0.01 U	1.75	0.0902
MW-21(A)	BM-21 (A)	1/13/2004				3.76	
MW-21(A)	MW-21 (A)	1/13/2004	0.05 U	0.256	0.01 U	0.765	0.05 U
MW-21(A)	MW-21 (A)	1/13/2004				4.01	
MW-21(A)	MW-21(A)	4/16/2004	0.5 U	0.5 U	0.02 U	1.27	0.5 U
MW-21(A)	MW-21(A)	4/16/2004				1.11 J	
MW-22(A)	MW-22 (A)	10/16/2003	0.05 U	0.05 U	0.01 U	2.61	0.05 U
MW-22(A)	MW-22 (A)	10/16/2003				40.5	
MW-22(A)	MW-22(A)	1/19/2004	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-22(A)	MW-22(A)	1/19/2004				0.0931	
MW-22(A)	MW-22(A)	4/15/2004	0.05 U	0.05 U	0.01 U	0.0757	0.05 U
MW-22(A)	MW-22(A)	4/15/2004				0.32	
MW-23(A)	MW-23(A)	10/20/2003	0.05 U	0.05 U	0.01 U	0.0617	0.05 U

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Fluoranthene ug/L	Fluorene ug/L	Indeno(1,2, 3-cd)pyrene ug/L	Naphthalene ug/L	Phenanthrene ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U	0.12	0.01 U	2 U	0.05 U
MW-23(A)	MW-23(A)	10/20/2003				2 U	
MW-23(A)	MW-23 (A)	1/15/2004	0.05 U	0.05 U	0.01 U	0.225 U	0.05 U
MW-23(A)	MW-23 (A)	1/15/2004				2 U	
MW-23(A)	BM-23(A)	4/15/2004	0.05 U	0.05 U	0.01 U	1.21	0.05 U
MW-23(A)	BM-23(A)	4/15/2004				7.47	
MW-23(A)	MW-23(A)	4/15/2004	0.05 U	0.05 U	0.01 U	9.17	0.05 U
MW-23(A)	MW-23(A)	4/15/2004				1.14	
MW-24(A)	MW-24(A)	10/21/2003	0.05 U	0.05 U	0.01 U	0.05 U	0.05 U
MW-24(A)	MW-24(A)	10/21/2003				2 U B	
MW-24(A)	MW-24 (A)	1/15/2004	0.05 U	0.05 U	0.01 U	114	0.05 U
MW-24(A)	MW-24 (A)	1/15/2004				44.6	
MW-24(A)	MW-24(A)	4/14/2004	0.05 U	0.05 U	0.01 U	20.8	0.05 U
MW-24(A)	MW-24(A)	4/14/2004				40.9	
MW-26(A)	MW-26 (A)	10/17/2003	5 U	5 U	0.01 U	280	5 U
MW-26(A)	MW-26 (A)	10/17/2003				107	
MW-26(A)	MW-26 (A)	1/15/2004	0.05 U	0.0718	0.01 U	564	0.05 U
MW-26(A)	MW-26 (A)	1/15/2004				1030	
MW-26(A)	MW-26(A)	4/14/2004	0.05 U	0.0595	0.01 U	801	0.05 U
MW-26(A)	MW-26(A)	4/14/2004				464	
MW-27(A)	MW-27(A)	10/21/2003	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-27(A)	MW-27(A)	10/21/2003				0.158	
MW-27(A)	MW-27 (A)	1/14/2004	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-27(A)	MW-27 (A)	1/14/2004				0.0512	
MW-27(A)	MW-27 (A)	4/14/2004	0.05 U	0.05 U	0.01 U	0.0763	0.05 U

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Fluoranthene ug/L	Fluorene ug/L	Indeno(1,2, 3-cd)pyrene ug/L	Naphthalene ug/L	Phenanthrene ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U	0.12	0.01 U	2 U	0.05 U
MW-27(A)	MW-27 (A)	4/14/2004				2 U	
MW-28(A)	MW-28 (A)	10/17/2003	5 U	5 U	0.01 U	157	5 U
MW-28(A)	MW-28 (A)	10/17/2003				112	
MW-28(A)	MW-28(A)	1/19/2004	0.05 U	0.076	0.01 U	398	0.07
MW-28(A)	MW-28(A)	1/19/2004				78.4	
MW-28(A)	MW-28(A)	4/14/2004	0.05 U	0.0763	0.01 U	118	0.0564
MW-28(A)	MW-28(A)	4/14/2004				66.9	
MW-29(A)	MW-29(A)	10/21/2003	0.05 U	0.0811	0.01 U	1340	0.0638
MW-29(A)	MW-29(A)	10/21/2003				1640	
MW-29(A)	MW-29(A)	1/19/2004	0.05 U	0.101	0.01 U	1310	0.0802
MW-29(A)	MW-29(A)	1/19/2004				867	
MW-29(A)	MW-29(A)	4/16/2004	0.1 U	0.1 U	0.02 U	806	0.1 U
MW-29(A)	MW-29(A)	4/16/2004				1000	
MW-30(A)	MW-30 (A)	10/16/2003	0.05 U	0.0569	0.01 U	531	0.05 U
MW-30(A)	MW-30 (A)	10/16/2003				1130	
MW-30(A)	MW-30 (A)	1/16/2004	0.05 U	0.0613	0.01 U	1200	0.05 U
MW-30(A)	MW-30 (A)	1/16/2004				696	
MW-30(A)	MW-30 (A)	4/13/2004	0.05 U	0.05 U	0.01 U	1030	0.05 U
MW-30(A)	MW-30 (A)	4/13/2004				381	
MW-31(A)	BM-31 (A)	10/16/2003	0.05 U	0.0515	0.01 U	15.3	0.05 U
MW-31(A)	BM-31 (A)	10/16/2003				8.36	
MW-31(A)	MW-31 (A)	10/16/2003	0.05 U	0.0582	0.01 U	10	0.05 U
MW-31(A)	MW-31 (A)	10/16/2003				16.2	

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SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Fluoranthene ug/L	Fluorene ug/L	Indeno(1,2, 3-cd)pyrene ug/L	Naphthalene ug/L	Phenanthrene ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U	0.12	0.01 U	2 U	0.05 U
MW-31(A)	MW-31 (A)	1/12/2004	0.05 U	0.0661	0.01 U	9.96	0.05 U
MW-31(A)	MW-31 (A)	1/12/2004				13.5	
MW-31(A)	BM-31 (A)	4/13/2004	0.05 U	0.05 U	0.01 U	116	0.05 U
MW-31(A)	BM-31 (A)	4/13/2004				67.6	
MW-31(A)	MW-31 (A)	4/13/2004	0.1 U	0.1 U	0.02 U	64.1	0.1 U
MW-31(A)	MW-31 (A)	4/13/2004				145	
MW-32(A)	MW-32(A)	10/14/2003	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-32(A)	MW-32(A)	10/14/2003				0.05 U	
MW-32(A)	MW-32 (A)	1/12/2004	0.05 U	0.05 U	0.01 U	0.05 U	0.05 U
MW-32(A)	MW-32 (A)	1/12/2004				2 U	
MW-32(A)	MW-32 (A)	4/13/2004	0.05 U	0.05 U	0.01 U	0.075 U	0.05 U
MW-32(A)	MW-32 (A)	4/13/2004				2 U	
MW-33(A)	MW-33(A)	10/14/2003	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-33(A)	MW-33(A)	10/14/2003				0.07 U	
MW-33(A)	MW-33 (A)	1/12/2004	0.05 U	0.05 U	0.01 U	0.175 U B	0.05 U
MW-33(A)	MW-33 (A)	1/12/2004				0.19 J	
MW-33(A)	MW-33 (A)	4/13/2004	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-33(A)	MW-33 (A)	4/13/2004				0.65 U	
MW-34(A)	MW-34(A)	10/14/2003	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-34(A)	MW-34(A)	10/14/2003				0.0623	
MW-34(A)	MW-34 (A)	1/13/2004	0.05 U	0.05 U	0.01 U	0.116	0.05 U
MW-34(A)	MW-34 (A)	1/13/2004				2 U	
MW-34(A)	MW-34 (A)	4/14/2004	0.05 U	0.05 U	0.01 U	0.162	0.05 U
MW-34(A)	MW-34 (A)	4/14/2004				2 U	

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Fluoranthene ug/L	Fluorene ug/L	Indeno(1,2, 3-cd)pyrene ug/L	Naphthalene ug/L	Phenanthrene ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U	0.12	0.01 U	2 U	0.05 U
MW-35(A)	MW-35 (A)	10/16/2003	0.05 U	0.05 U	0.01 U	1.04 J	0.05 U
MW-35(A)	MW-35 (A)	10/16/2003				0.124	
MW-35(A)	MW-35 (A)	1/16/2004	0.05 U	0.05 U	0.01 U	0.31 J	0.05 U
MW-35(A)	MW-35 (A)	1/16/2004				0.349	
MW-35(A)	MW-35 (A)	4/13/2004	0.05 U	0.05 U	0.01 U	0.05 U	0.05 U
MW-35(A)	MW-35 (A)	4/13/2004				2 U	
MW-36(A)	MW-36(A)	10/21/2003	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-36(A)	MW-36(A)	10/21/2003				0.05 U	
MW-36(A)	MW-36 (A)	1/14/2004	0.05 U	0.05 U	0.01 U	0.68 J	0.05 U
MW-36(A)	MW-36 (A)	1/14/2004				0.05 U	
MW-36(A)	MW-36 (A)	4/14/2004	0.05 U	0.05 U	0.01 U	0.84 J	0.05 U
MW-36(A)	MW-36 (A)	4/14/2004				0.214	
MW-37(A)	MW-37 (A)	10/17/2003	0.05 U	0.05 U	0.01 U	21.5	0.05 U
MW-37(A)	MW-37 (A)	10/17/2003				11.1	
MW-38(A)	MW-38(A)	10/21/2003	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-38(A)	MW-38(A)	10/21/2003				0.05 U	
MW-38(A)	MW-38 (A)	1/14/2004	0.05 U	0.05 U	0.01 U	2 U B	0.05 U
MW-38(A)	MW-38 (A)	1/14/2004				0.121	
MW-38(A)	MW-38 (A)	4/14/2004	0.05 U	0.05 U	0.01 U	0.5 J	0.05 U
MW-38(A)	MW-38 (A)	4/14/2004				0.05 U	
MW-39(A)	MW-39 (A)	10/16/2003	0.05 U	2.24	0.01 U	17.7	0.806
MW-39(A)	MW-39 (A)	10/16/2003				22.8	

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

Locator ID	Sample ID	Sample Date	Fluoranthene ug/L	Fluorene ug/L	Indeno(1,2, 3-cd)pyrene ug/L	Naphthalene ug/L	Phenanthrene ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U	0.12	0.01 U	2 U	0.05 U
MW-39(A)	MW-39 (A)	1/16/2004	0.05 U	1.04	0.01 U	23.4	0.629
MW-39(A)	MW-39 (A)	1/16/2004				17.3	
MW-39(A)	MW-39 (A)	4/14/2004	0.05 U	0.633	0.01 U	18.7	0.357
MW-39(A)	MW-39 (A)	4/14/2004				4.14	
MW-40(A)	MW-40 (A)	10/17/2003	0.05 U	0.618	0.01 U	82.5	0.317
MW-40(A)	MW-40 (A)	10/17/2003				43.8	
MW-40(A)	MW-40(A)	1/20/2004	0.1 U	0.72	0.02 U	1220	1.11
MW-40(A)	MW-40(A)	1/20/2004				682	
MW-40(A)	MW-40(A)	4/16/2004	0.2 U	1.16	0.04 U	1500	2.13
MW-40(A)	MW-40(A)	4/16/2004				850	
MW-41(A)	MW-41(A)	10/14/2003	1.25 U	4.97	0.01 U	105	6.93
MW-41(A)	MW-41(A)	10/14/2003				82.3	
MW-42(A)	MW-42 (A)	10/15/2003	0.05 U	2.56	0.01 U	141	2.16
MW-42(A)	MW-42 (A)	10/15/2003				190	
MW-43(A)	MW-43(A)	10/13/2003	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-43(A)	MW-43(A)	10/13/2003				0.05 U	
MW-43(A)	MW-43 (A)	1/12/2004	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-43(A)	MW-43 (A)	1/12/2004				0.05 U	
MW-43(A)	MW-43 (A)	4/13/2004	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-43(A)	MW-43 (A)	4/13/2004				0.05 U	
MW-44(A)	MW-44 (A)	10/17/2003	0.05 U	0.362	0.01 U	1050	0.44
MW-44(A)	MW-44 (A)	10/17/2003				696	

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Fluoranthene ug/L	Fluorene ug/L	Indeno(1,2, 3-cd)pyrene ug/L	Naphthalene ug/L	Phenanthrene ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U	0.12	0.01 U	2 U	0.05 U
MW-45(A)	MW-45 (A)	10/16/2003	0.05 U	0.05 U	0.01 U	1.11 J	0.05 U
MW-45(A)	MW-45 (A)	10/16/2003				0.0896	
MW-45(A)	MW-45 (A)	1/16/2004	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-45(A)	MW-45 (A)	1/16/2004				0.05 U	
MW-45(A)	MW-45 (A)	4/14/2004	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-45(A)	MW-45 (A)	4/14/2004				0.0798	
MW-46(A)	MW-46(A)	10/14/2003	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-46(A)	MW-46(A)	10/14/2003				0.05 U	
MW-46(A)	MW-46(A)	1/14/2004	0.05 U	0.05 U	0.01 U	0.05 U	0.05 U
MW-46(A)	MW-46(A)	1/14/2004				2 U	
MW-46(A)	MW-46 (A)	4/12/2004	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-46(A)	MW-46 (A)	4/12/2004				0.0526	
MW-47(A)	MW-47(A)	10/13/2003	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-47(A)	MW-47(A)	10/13/2003				0.05 U	
MW-47(A)	MW-47 (A)	1/14/2004	0.05 U	0.05 U	0.01 U	0.0783	0.05 U
MW-47(A)	MW-47 (A)	1/14/2004				2 U	
MW-47(A)	MW-47 (A)	4/12/2004	0.05 U	0.05 U	0.01 U	2 U	0.05 U
MW-47(A)	MW-47 (A)	4/12/2004				0.05 U	
MW-48(A)	MW-48(A)	10/14/2003	0.123	0.204	0.01 U	0.76 J	0.345
MW-48(A)	MW-48(A)	10/14/2003				0.538	
MW-48(A)	MW-48 (A)	1/14/2004	0.05 U	0.0763	0.01 U	0.397	0.131
MW-48(A)	MW-48 (A)	1/14/2004				2 U	
MW-48(A)	MW-48 (A)	4/12/2004	0.0507	0.0569	0.01 U	0.244	0.101

TABLE 6**SVOCs IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene
			ug/L	ug/L	ug/L	ug/L	ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U	0.12	0.01 U	2 U	0.05 U
MW-48(A)	MW-48 (A)	4/12/2004				2 U	
R-1(M)	R-1(M)	10/22/2003	0.05 U	0.05 U	0.01 U	2 U B	0.05 U
R-1(M)	R-1(M)	10/22/2003				0.0972	

TABLE 6**SVOCs IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Pyrene
			ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U
MW-1(F)	MW-1-082302	8/23/2002	
MW-1(F)	MW-1(F)	10/22/2003	0.05 U
MW-1(F)	MW-1(F)	10/22/2003	
MW-1(F)	MW-1 (F)	1/15/2004	0.05 U
MW-1(F)	MW-1 (F)	1/15/2004	
MW-1(F)	MW-1(F)	4/15/2004	0.05 U
MW-1(F)	MW-1(F)	4/15/2004	
MW-2(M)	MW-2(M)	6/19/2003	0.5 U
MW-2(M)	MW-2(M)	6/19/2003	
MW-2(M)	MW-2 (M)	10/15/2003	0.051
MW-2(M)	MW-2 (M)	10/15/2003	
MW-2(M)	MW-2 (M)	1/12/2004	0.1 U
MW-2(M)	MW-2 (M)	1/12/2004	
MW-2(M)	MW-2(M)	4/14/2004	0.5 U
MW-2(M)	MW-2(M)	4/14/2004	
MW-6(M)	MW-6(M)	6/19/2003	0.1 U
MW-6(M)	MW-6(M)	6/19/2003	
MW-6(M)	MW-6(M)	10/22/2003	0.05 U
MW-6(M)	MW-6(M)	10/22/2003	
MW-6(M)	MW-6 (M)	1/12/2004	0.05 U
MW-6(M)	MW-6 (M)	1/12/2004	
MW-6(M)	MW-6 (M)	4/13/2004	0.05 U
MW-6(M)	MW-6 (M)	4/13/2004	
MW-7(M)	BM-7(M)	6/19/2003	0.1 U

TABLE 6**SVOCs IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Pyrene
			ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U
MW-7(M)	BM-7(M)	6/19/2003	
MW-7(M)	MW-7(M)	6/19/2003	0.1 U
MW-7(M)	MW-7(M)	6/19/2003	
MW-7(M)	MW-7(M)	10/13/2003	0.05 U
MW-7(M)	MW-7(M)	10/13/2003	
MW-7(M)	MW-7 (M)	1/12/2004	0.05 U
MW-7(M)	MW-7 (M)	1/12/2004	
MW-7(M)	MW-7 (M)	4/12/2004	0.05 U
MW-7(M)	MW-7 (M)	4/12/2004	
MW-10(M)	MW-10(M)	6/19/2003	0.5 U
MW-10(M)	MW-10(M)	6/19/2003	
MW-10(M)	MW-10 (M)	10/15/2003	0.0589
MW-10(M)	MW-10 (M)	10/15/2003	
MW-10(M)	MW-10 (M)	1/13/2004	0.05 U
MW-10(M)	MW-10 (M)	1/13/2004	
MW-10(M)	MW-10 (M)	4/13/2004	0.1 U
MW-10(M)	MW-10 (M)	4/13/2004	
MW-11(M)	MW-11(M)	6/19/2003	0.1 U
MW-11(M)	MW-11(M)	6/19/2003	
MW-11(M)	MW-11 (M)	10/15/2003	0.05 U
MW-11(M)	MW-11 (M)	10/15/2003	
MW-11(M)	MW-11 (M)	1/13/2004	0.05 U
MW-11(M)	MW-11 (M)	1/13/2004	
MW-11(M)	MW-11 (M)	4/13/2004	0.05 U
MW-11(M)	MW-11 (M)	4/13/2004	

TABLE 6**SVOCs IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Pyrene
			ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U
MW-12(A)	MW-12(A)	10/22/2003	0.05 U
MW-12(A)	MW-12(A)	10/22/2003	
MW-12(A)	MW-12 (A)	1/15/2004	0.05 U
MW-12(A)	MW-12 (A)	1/15/2004	
MW-12(A)	MW-12(A)	4/16/2004	0.05 U
MW-12(A)	MW-12(A)	4/16/2004	
MW-13(A)	MW-13(A)	10/22/2003	0.05 U
MW-13(A)	MW-13(A)	10/22/2003	
MW-13(A)	MW-13 (A)	1/15/2004	0.1 U
MW-13(A)	MW-13 (A)	1/15/2004	
MW-13(A)	MW-13(A)	4/16/2004	0.1 U
MW-13(A)	MW-13(A)	4/16/2004	
MW-14(A)	MW-14(A)	10/21/2003	0.05 U
MW-14(A)	MW-14(A)	10/21/2003	
MW-14(A)	MW-14 (A)	1/15/2004	0.05 U
MW-14(A)	MW-14 (A)	1/15/2004	
MW-14(A)	MW-14(A)	4/16/2004	0.05 U
MW-14(A)	MW-14(A)	4/16/2004	
MW-15(A)	MW-15(A)	10/20/2003	0.05 U
MW-15(A)	MW-15(A)	10/20/2003	
MW-16(A)	MW-16(A)	10/20/2003	0.05 U
MW-16(A)	MW-16(A)	10/20/2003	

TABLE 6**SVOCs IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Pyrene
			ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U
MW-16(A)	MW-16(A)	1/19/2004	0.05 U
MW-16(A)	MW-16(A)	1/19/2004	
MW-16(A)	MW-16(A)	4/15/2004	0.05 U
MW-16(A)	MW-16(A)	4/15/2004	
MW-17(A)	MW-17 (A)	10/17/2003	0.05 U
MW-17(A)	MW-17 (A)	10/17/2003	
MW-17(A)	BM-17(A)	1/19/2004	0.05 U
MW-17(A)	BM-17(A)	1/19/2004	
MW-17(A)	MW-17(A)	1/19/2004	0.05 U
MW-17(A)	MW-17(A)	1/19/2004	
MW-17(A)	MW-17(A)	4/15/2004	0.05 U
MW-17(A)	MW-17(A)	4/15/2004	
MW-18(A)	MW-18(A)	10/21/2003	0.05 U
MW-18(A)	MW-18(A)	10/21/2003	
MW-18(A)	MW-18(A)	1/19/2004	0.05 U
MW-18(A)	MW-18(A)	1/19/2004	
MW-18(A)	MW-18(A)	4/15/2004	0.05 U
MW-18(A)	MW-18(A)	4/15/2004	
MW-19(A)	BM-19(A)	10/20/2003	0.05 U
MW-19(A)	BM-19(A)	10/20/2003	
MW-19(A)	MW-19(A)	10/20/2003	0.05 U
MW-19(A)	MW-19(A)	10/20/2003	
MW-19(A)	MW-19 (A)	1/13/2004	0.05 U
MW-19(A)	MW-19 (A)	1/13/2004	

TABLE 6**SVOCs IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Pyrene
			ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U
MW-19(A)	MW-19(A)	4/15/2004	0.05 U
MW-19(A)	MW-19(A)	4/15/2004	
MW-20(A)	MW-20(A)	10/20/2003	0.05 U
MW-20(A)	MW-20(A)	10/20/2003	
MW-20(A)	MW-20 (A)	1/13/2004	0.05 U
MW-20(A)	MW-20 (A)	1/13/2004	
MW-20(A)	MW-20(A)	4/15/2004	0.1 U
MW-20(A)	MW-20(A)	4/15/2004	
MW-21(A)	MW-21(A)	10/20/2003	0.05 U
MW-21(A)	MW-21(A)	10/20/2003	
MW-21(A)	BM-21 (A)	1/13/2004	0.05 U
MW-21(A)	BM-21 (A)	1/13/2004	
MW-21(A)	MW-21 (A)	1/13/2004	0.05 U
MW-21(A)	MW-21 (A)	1/13/2004	
MW-21(A)	MW-21(A)	4/16/2004	0.1 U
MW-21(A)	MW-21(A)	4/16/2004	
MW-22(A)	MW-22 (A)	10/16/2003	0.05 U
MW-22(A)	MW-22 (A)	10/16/2003	
MW-22(A)	MW-22(A)	1/19/2004	0.05 U
MW-22(A)	MW-22(A)	1/19/2004	
MW-22(A)	MW-22(A)	4/15/2004	0.05 U
MW-22(A)	MW-22(A)	4/15/2004	
MW-23(A)	MW-23(A)	10/20/2003	0.05 U

TABLE 6**SVOCs IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Pyrene
			ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U
MW-23(A)	MW-23(A)	10/20/2003	
MW-23(A)	MW-23 (A)	1/15/2004	0.05 U
MW-23(A)	MW-23 (A)	1/15/2004	
MW-23(A)	BM-23(A)	4/15/2004	0.05 U
MW-23(A)	BM-23(A)	4/15/2004	
MW-23(A)	MW-23(A)	4/15/2004	0.05 U
MW-23(A)	MW-23(A)	4/15/2004	
MW-24(A)	MW-24(A)	10/21/2003	0.05 U
MW-24(A)	MW-24(A)	10/21/2003	
MW-24(A)	MW-24 (A)	1/15/2004	0.05 U
MW-24(A)	MW-24 (A)	1/15/2004	
MW-24(A)	MW-24(A)	4/14/2004	0.05 U
MW-24(A)	MW-24(A)	4/14/2004	
MW-26(A)	MW-26 (A)	10/17/2003	0.05 U
MW-26(A)	MW-26 (A)	10/17/2003	
MW-26(A)	MW-26 (A)	1/15/2004	0.05 U
MW-26(A)	MW-26 (A)	1/15/2004	
MW-26(A)	MW-26(A)	4/14/2004	0.05 U
MW-26(A)	MW-26(A)	4/14/2004	
MW-27(A)	MW-27(A)	10/21/2003	0.05 U
MW-27(A)	MW-27(A)	10/21/2003	
MW-27(A)	MW-27 (A)	1/14/2004	0.05 U
MW-27(A)	MW-27 (A)	1/14/2004	
MW-27(A)	MW-27 (A)	4/14/2004	0.05 U

TABLE 6**SVOCs IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Pyrene
			ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U
MW-27(A)	MW-27 (A)	4/14/2004	
MW-28(A)	MW-28 (A)	10/17/2003	0.05 U
MW-28(A)	MW-28 (A)	10/17/2003	
MW-28(A)	MW-28(A)	1/19/2004	0.05 U
MW-28(A)	MW-28(A)	1/19/2004	
MW-28(A)	MW-28(A)	4/14/2004	0.05 U
MW-28(A)	MW-28(A)	4/14/2004	
MW-29(A)	MW-29(A)	10/21/2003	0.05 U
MW-29(A)	MW-29(A)	10/21/2003	
MW-29(A)	MW-29(A)	1/19/2004	0.05 U
MW-29(A)	MW-29(A)	1/19/2004	
MW-29(A)	MW-29(A)	4/16/2004	0.1 U
MW-29(A)	MW-29(A)	4/16/2004	
MW-30(A)	MW-30 (A)	10/16/2003	0.05 U
MW-30(A)	MW-30 (A)	10/16/2003	
MW-30(A)	MW-30 (A)	1/16/2004	0.05 U
MW-30(A)	MW-30 (A)	1/16/2004	
MW-30(A)	MW-30 (A)	4/13/2004	0.05 U
MW-30(A)	MW-30 (A)	4/13/2004	
MW-31(A)	BM-31 (A)	10/16/2003	0.05 U
MW-31(A)	BM-31 (A)	10/16/2003	
MW-31(A)	MW-31 (A)	10/16/2003	0.05 U
MW-31(A)	MW-31 (A)	10/16/2003	

TABLE 6**SVOCs IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Pyrene
			ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U
MW-31(A)	MW-31 (A)	1/12/2004	0.05 U
MW-31(A)	MW-31 (A)	1/12/2004	
MW-31(A)	BM-31 (A)	4/13/2004	0.05 U
MW-31(A)	BM-31 (A)	4/13/2004	
MW-31(A)	MW-31 (A)	4/13/2004	0.1 U
MW-31(A)	MW-31 (A)	4/13/2004	
MW-32(A)	MW-32(A)	10/14/2003	0.05 U
MW-32(A)	MW-32(A)	10/14/2003	
MW-32(A)	MW-32 (A)	1/12/2004	0.05 U
MW-32(A)	MW-32 (A)	1/12/2004	
MW-32(A)	MW-32 (A)	4/13/2004	0.05 U
MW-32(A)	MW-32 (A)	4/13/2004	
MW-33(A)	MW-33(A)	10/14/2003	0.05 U
MW-33(A)	MW-33(A)	10/14/2003	
MW-33(A)	MW-33 (A)	1/12/2004	0.05 U
MW-33(A)	MW-33 (A)	1/12/2004	
MW-33(A)	MW-33 (A)	4/13/2004	0.05 U
MW-33(A)	MW-33 (A)	4/13/2004	
MW-34(A)	MW-34(A)	10/14/2003	0.05 U
MW-34(A)	MW-34(A)	10/14/2003	
MW-34(A)	MW-34 (A)	1/13/2004	0.05 U
MW-34(A)	MW-34 (A)	1/13/2004	
MW-34(A)	MW-34 (A)	4/14/2004	0.05 U
MW-34(A)	MW-34 (A)	4/14/2004	

TABLE 6**SVOCs IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Pyrene
			ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U
MW-35(A)	MW-35 (A)	10/16/2003	0.05 U
MW-35(A)	MW-35 (A)	10/16/2003	
MW-35(A)	MW-35 (A)	1/16/2004	0.05 U
MW-35(A)	MW-35 (A)	1/16/2004	
MW-35(A)	MW-35 (A)	4/13/2004	0.05 U
MW-35(A)	MW-35 (A)	4/13/2004	
MW-36(A)	MW-36(A)	10/21/2003	0.05 U
MW-36(A)	MW-36(A)	10/21/2003	
MW-36(A)	MW-36 (A)	1/14/2004	0.05 U
MW-36(A)	MW-36 (A)	1/14/2004	
MW-36(A)	MW-36 (A)	4/14/2004	0.05 U
MW-36(A)	MW-36 (A)	4/14/2004	
MW-37(A)	MW-37 (A)	10/17/2003	0.05 U
MW-37(A)	MW-37 (A)	10/17/2003	
MW-38(A)	MW-38(A)	10/21/2003	0.05 U
MW-38(A)	MW-38(A)	10/21/2003	
MW-38(A)	MW-38 (A)	1/14/2004	0.05 U
MW-38(A)	MW-38 (A)	1/14/2004	
MW-38(A)	MW-38 (A)	4/14/2004	0.05 U
MW-38(A)	MW-38 (A)	4/14/2004	
MW-39(A)	MW-39 (A)	10/16/2003	0.05 U
MW-39(A)	MW-39 (A)	10/16/2003	

TABLE 6**SVOCs IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Pyrene
			ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U
MW-39(A)	MW-39 (A)	1/16/2004	0.05 U
MW-39(A)	MW-39 (A)	1/16/2004	
MW-39(A)	MW-39 (A)	4/14/2004	0.05 U
MW-39(A)	MW-39 (A)	4/14/2004	
MW-40(A)	MW-40 (A)	10/17/2003	0.05 U
MW-40(A)	MW-40 (A)	10/17/2003	
MW-40(A)	MW-40(A)	1/20/2004	0.1 U
MW-40(A)	MW-40(A)	1/20/2004	
MW-40(A)	MW-40(A)	4/16/2004	0.2 U
MW-40(A)	MW-40(A)	4/16/2004	
MW-41(A)	MW-41(A)	10/14/2003	0.2
MW-41(A)	MW-41(A)	10/14/2003	
MW-42(A)	MW-42 (A)	10/15/2003	0.05 U
MW-42(A)	MW-42 (A)	10/15/2003	
MW-43(A)	MW-43(A)	10/13/2003	0.05 U
MW-43(A)	MW-43(A)	10/13/2003	
MW-43(A)	MW-43 (A)	1/12/2004	0.05 U
MW-43(A)	MW-43 (A)	1/12/2004	
MW-43(A)	MW-43 (A)	4/13/2004	0.05 U
MW-43(A)	MW-43 (A)	4/13/2004	
MW-44(A)	MW-44 (A)	10/17/2003	0.05 U
MW-44(A)	MW-44 (A)	10/17/2003	

TABLE 6**SVOCs IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Pyrene
			ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U
MW-45(A)	MW-45 (A)	10/16/2003	0.05 U
MW-45(A)	MW-45 (A)	10/16/2003	
MW-45(A)	MW-45 (A)	1/16/2004	0.05 U
MW-45(A)	MW-45 (A)	1/16/2004	
MW-45(A)	MW-45 (A)	4/14/2004	0.05 U
MW-45(A)	MW-45 (A)	4/14/2004	
MW-46(A)	MW-46(A)	10/14/2003	0.05 U
MW-46(A)	MW-46(A)	10/14/2003	
MW-46(A)	MW-46(A)	1/14/2004	0.05 U
MW-46(A)	MW-46(A)	1/14/2004	
MW-46(A)	MW-46 (A)	4/12/2004	0.05 U
MW-46(A)	MW-46 (A)	4/12/2004	
MW-47(A)	MW-47(A)	10/13/2003	0.05 U
MW-47(A)	MW-47(A)	10/13/2003	
MW-47(A)	MW-47 (A)	1/14/2004	0.05 U
MW-47(A)	MW-47 (A)	1/14/2004	
MW-47(A)	MW-47 (A)	4/12/2004	0.05 U
MW-47(A)	MW-47 (A)	4/12/2004	
MW-48(A)	MW-48(A)	10/14/2003	0.0812
MW-48(A)	MW-48(A)	10/14/2003	
MW-48(A)	MW-48 (A)	1/14/2004	0.05 U
MW-48(A)	MW-48 (A)	1/14/2004	
MW-48(A)	MW-48 (A)	4/12/2004	0.0729

TABLE 6

SVOCs IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Pyrene
			ug/L
MW-1(F)	MW-1-082302	8/23/2002	0.05 U
MW-48(A)	MW-48 (A)	4/12/2004	
R-1(M)	R-1(M)	10/22/2003	0.05 U
R-1(M)	R-1(M)	10/22/2003	

TABLE 7

TOTAL METALS IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Arsenic, Total ug/L	Barium ug/L	Cadmium ug/L	Chromium ug/L	Lead ug/L
MW-1(F)	MW-1(F)	10/22/2003	9.53	254	0.24 J	23.7	25.5
MW-1(F)	MW-1 (F)	1/15/2004	2.34	64.9	1 U	1 U	1 U B
MW-1(F)	MW-1(F)	4/15/2004					1.89
MW-2(M)	MW-2(M)	6/19/2003					10 U
MW-2(M)	MW-2 (M)	10/15/2003	21.6	32	1 U	4.98	8.72
MW-2(M)	MW-2 (M)	1/12/2004	17.2	13.8	1 U	1 U	1.77 J+,B
MW-2(M)	MW-2(M)	4/14/2004					60.5
MW-6(M)	MW-6(M)	10/22/2003	13.3	20	1 U	2.07	7.57
MW-6(M)	MW-6 (M)	1/12/2004	10.4	16	0.25 J	1.85	3.79 JB
MW-6(M)	MW-6 (M)	4/13/2004					2.32
MW-7(M)	MW-7(M)	10/13/2003	12.6	32.3	1 U	3.54	8.4
MW-7(M)	MW-7 (M)	1/12/2004	8.04	33.1	1 U	2.26	8.07
MW-7(M)	MW-7 (M)	4/12/2004					20.3
MW-10(M)	MW-10(M)	6/19/2003					10 U
MW-10(M)	MW-10 (M)	10/15/2003	25.7	111	0.7 J	13.3	11.5
MW-10(M)	MW-10 (M)	1/13/2004	25.3	42.6	1 U	1 U	1 U B
MW-10(M)	MW-10 (M)	4/13/2004					9.58
MW-11(M)	MW-11 (M)	10/15/2003	13.9	10.3	1 U	1 U	1 U
MW-11(M)	MW-11 (M)	1/13/2004	24	30.1	1 U	3.63	4.96 J+,B
MW-11(M)	MW-11 (M)	4/13/2004					2.23
MW-12(A)	MW-12(A)	10/22/2003	1 U	38	1 U	1 U	1 U
MW-12(A)	MW-12 (A)	1/15/2004	1 U	39.1	1 U	1 U	1 U B
MW-12(A)	MW-12(A)	4/16/2004					2.08

TABLE 7

TOTAL METALS IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Arsenic, Total ug/L	Barium ug/L	Cadmium ug/L	Chromium ug/L	Lead ug/L
MW-13(A)	MW-13(A)	10/22/2003	1 U	15	1 U	1 U	0.83 J
MW-13(A)	MW-13 (A)	1/15/2004	2.88	38.5	1 U	1 U	2.6
MW-13(A)	MW-13(A)	4/16/2004					6.71
MW-14(A)	MW-14(A)	10/21/2003	1 U	28.3	1 U	1 U	1 U
MW-14(A)	MW-14 (A)	1/15/2004	1 U	26.7	1 U	1 U	1 U B
MW-14(A)	MW-14(A)	4/16/2004					1.18
MW-15(A)	MW-15(A)	10/20/2003	1 U	33.6	1 U	1 U	0.47 J
MW-16(A)	MW-16(A)	10/20/2003	2.13	39.6	1 U	1.09	0.97 J
MW-16(A)	MW-16(A)	1/19/2004	2.6	42.5	1 U	1.39	148
MW-16(A)	MW-16(A)	4/15/2004					5.04
MW-17(A)	MW-17 (A)	10/17/2003	1 U	49.3	1 U	2.58	1.65
MW-17(A)	BM-17(A)	1/19/2004	1.22	33.2	1 U	1 U	1.97
MW-17(A)	MW-17(A)	1/19/2004	1.77	32.6	1 U	1 U	2.03
MW-17(A)	MW-17(A)	4/15/2004					3.22
MW-18(A)	MW-18(A)	10/21/2003	1 U	55.6	1 U	1.82	4.57
MW-18(A)	MW-18(A)	1/19/2004	1 U	67	1 U	4.06	7.81
MW-18(A)	MW-18(A)	4/15/2004					14.2
MW-19(A)	BM-19(A)	10/20/2003	1.69	29	1 U	1 U	0.57 J
MW-19(A)	MW-19(A)	10/20/2003	1.32	29.9	1 U	1 U	0.5 J
MW-19(A)	MW-19 (A)	1/13/2004	0.97 J	14.1	1 U	1 U	1 U B
MW-19(A)	MW-19(A)	4/15/2004					12.3

TABLE 7

TOTAL METALS IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Arsenic, Total ug/L	Barium ug/L	Cadmium ug/L	Chromium ug/L	Lead ug/L	
MW-20(A)	MW-20(A)	10/20/2003	1.29	23.7	1 U	1.42	1.45	
MW-20(A)	MW-20 (A)	1/13/2004	2.15	35.8	1 U	2.4	3.88	J+,B
MW-20(A)	MW-20(A)	4/15/2004					9.24	
MW-21(A)	MW-21(A)	10/20/2003	1.21	30.6	1 U	1.93	1.8	
MW-21(A)	BM-21 (A)	1/13/2004	1 U	13.6	1 U	1 U	1 U	B
MW-21(A)	MW-21 (A)	1/13/2004	1 U	13.4	1 U	1 U	1 U	B
MW-21(A)	MW-21(A)	4/16/2004					2.16	
MW-22(A)	MW-22 (A)	10/16/2003	1.47	24.1	1 U	1.45	0.69	J
MW-22(A)	MW-22(A)	1/19/2004	1.69	26	1 U	2.03	1.35	
MW-22(A)	MW-22(A)	4/15/2004					4.73	
MW-23(A)	MW-23(A)	10/20/2003	1 U	25.7	1 U	1 U	0.61	J
MW-23(A)	MW-23 (A)	1/15/2004	1 U	11.4	1 U	1 U	3.27	
MW-23(A)	BM-23(A)	4/15/2004					23.7	
MW-23(A)	MW-23(A)	4/15/2004					23.3	
MW-24(A)	MW-24(A)	10/21/2003	2.15	57.9	1 U	0.89	0.93	J
MW-24(A)	MW-24 (A)	1/15/2004	5.74	23.8	1 U	1.01	5.75	
MW-24(A)	MW-24(A)	4/14/2004					4.54	
MW-26(A)	MW-26 (A)	10/17/2003	1.04	J 59.3	1 U	1.37	1.97	
MW-26(A)	MW-26 (A)	1/15/2004	8.61	22.9	1 U	1.57	5.98	
MW-26(A)	MW-26(A)	4/14/2004					4.03	
MW-27(A)	MW-27(A)	10/21/2003	1	11.2	1 U	1 U	0.33	J
MW-27(A)	MW-27 (A)	1/14/2004	16.5	13.3	1 U	1 U	1 U	B
MW-27(A)	MW-27 (A)	4/14/2004					1 U	

TABLE 7

TOTAL METALS IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Arsenic, Total ug/L	Barium ug/L	Cadmium ug/L	Chromium ug/L	Lead ug/L
MW-28(A)	MW-28 (A)	10/17/2003	3.45 J	112	1 U	12.8	46.4
MW-28(A)	MW-28(A)	1/19/2004	3.11	60.8	1 U	6.18	19.8
MW-28(A)	MW-28(A)	4/14/2004					101
MW-29(A)	MW-29(A)	10/21/2003	5.73	33.6	1 U	2.5	5.04
MW-29(A)	MW-29(A)	1/19/2004	6.82	28.5	1 U	2.25	7.74
MW-29(A)	MW-29(A)	4/16/2004					12.7
MW-30(A)	MW-30 (A)	10/16/2003	7.95	65.4	1 U	6.53	3.7
MW-30(A)	MW-30 (A)	1/16/2004	10.9	51.5	1 U	4.79	3.17
MW-30(A)	MW-30 (A)	4/13/2004					17.3
MW-31(A)	BM-31 (A)	10/16/2003	13.9	27.1	1 U	0.96 J	0.26 J
MW-31(A)	MW-31 (A)	10/16/2003	13.3	26.5	1 U	0.91 J	0.56 J
MW-31(A)	MW-31 (A)	1/12/2004	13	46	1 U	2.85	3.02 J+,B
MW-31(A)	BM-31 (A)	4/13/2004					15.3
MW-31(A)	MW-31 (A)	4/13/2004					11.1
MW-32(A)	MW-32(A)	10/14/2003	1.4	27.9	1 U	1.41	0.58 J
MW-32(A)	MW-32 (A)	1/12/2004	2.29	11.9	1 U	1 U	1 U B
MW-32(A)	MW-32 (A)	4/13/2004					3.02
MW-33(A)	MW-33(A)	10/14/2003	21.6	18.2	1 U	0.94 J	0.41 J
MW-33(A)	MW-33 (A)	1/12/2004	30.7	32.1	1 U	1.57	1.51 J+.B
MW-33(A)	MW-33 (A)	4/13/2004					11.8
MW-34(A)	MW-34(A)	10/14/2003	1.42	36.7	1 U	3.05	1.32
MW-34(A)	MW-34 (A)	1/13/2004	3.26	33.3	0.19 J	2.53	1.62 J+,B

TABLE 7

TOTAL METALS IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Arsenic, Total ug/L	Barium ug/L	Cadmium ug/L	Chromium ug/L	Lead ug/L
MW-34(A)	MW-34 (A)	4/14/2004					7.5
MW-35(A)	MW-35 (A)	10/16/2003	1.02	13.6	1 U	1.5	0.24 J
MW-35(A)	MW-35 (A)	1/16/2004	1.8	22.1	1 U	1.9	1.44
MW-35(A)	MW-35 (A)	4/13/2004					5.11
MW-36(A)	MW-36(A)	10/21/2003	2.27	169	1 U	4.74	12.6
MW-36(A)	MW-36 (A)	1/14/2004	1 U	38.4	1 U	1.42	3.06
MW-36(A)	MW-36 (A)	4/14/2004					26.8
MW-37(A)	MW-37 (A)	10/17/2003	1 U	27.5	1 U	0.93 J	0.58 J
MW-38(A)	MW-38(A)	10/21/2003	1 U	20.9	1 U	1 U	0.48 J
MW-38(A)	MW-38 (A)	1/14/2004	1 U	12.3	1 U	1 U	1.2 J+,B
MW-38(A)	MW-38 (A)	4/14/2004					8.28
MW-39(A)	MW-39 (A)	10/16/2003	1.65	7.54	1 U	1 U	0.19 J
MW-39(A)	MW-39 (A)	1/16/2004	2.29	11.2	1 U	0.88 J	1 U B
MW-39(A)	MW-39 (A)	4/14/2004					1.12
MW-40(A)	MW-40 (A)	10/17/2003	3.81	46.2	1 U	5.42	2.95
MW-40(A)	MW-40(A)	1/20/2004	12.8	33.1	1 U	1 U	5.19
MW-40(A)	MW-40(A)	4/16/2004					56.7
MW-41(A)	MW-41(A)	10/14/2003	14.4	23.5	1 U	1 U	0.13 J
MW-42(A)	MW-42 (A)	10/15/2003	37.2	43.6	1 U	4.66	2.75
MW-43(A)	MW-43(A)	10/13/2003	7.52	22.7	1 U	0.85 J	0.23 J

TABLE 7

TOTAL METALS IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Arsenic, Total ug/L	Barium ug/L	Cadmium ug/L	Chromium ug/L	Lead ug/L
MW-43(A)	MW-43 (A)	1/12/2004	11.6	31.2	1 U	1.89	2.18 J+,B
MW-43(A)	MW-43 (A)	4/13/2004					0.51 J
MW-44(A)	MW-44 (A)	10/17/2003	12.2	14.7	1 U	0.85 J	0.86 J
MW-45(A)	MW-45 (A)	10/16/2003	6.55	8.55	1 U	1.11	0.54 J
MW-45(A)	MW-45 (A)	1/16/2004	1 U	8.37	1 U	1 U	1 U B
MW-45(A)	MW-45 (A)	4/14/2004					1.49
MW-46(A)	MW-46(A)	10/14/2003	1.25	15.6	1 U	60.6	1.41
MW-46(A)	MW-46(A)	1/14/2004	3.11	26	1 U	16.5	2.17 J+,B
MW-46(A)	MW-46 (A)	4/12/2004					4.95
MW-46(A)	MW-46(A)	4/12/2004				34.9	
MW-47(A)	MW-47(A)	10/13/2003	1 U	19.5	1 U	1.65	0.57 J
MW-47(A)	MW-47 (A)	1/14/2004	4.14	26.6	1 U	2.34	3.14 J+,B
MW-47(A)	MW-47 (A)	4/12/2004					8.81
MW-47(A)	MW-47(A)	4/12/2004				5.81	
MW-48(A)	MW-48(A)	10/14/2003	1 U	43.5	1 U	2.5	21.6
MW-48(A)	MW-48 (A)	1/14/2004	1.14	19.5	1 U	1 U	1 U J
MW-48(A)	MW-48 (A)	4/12/2004					33.5
MW-48(A)	MW-48(A)	4/12/2004				3.45	
R-1(M)	R-1(M)	10/22/2003	3.56 J	12	1 U	0.99 J	4.01

TABLE 7

TOTAL METALS IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Mercury	Selenium	Silver
			ug/L	ug/L	ug/L
MW-1(F)	MW-1(F)	10/22/2003	0.2 U B	2.22	0.18 J
MW-1(F)	MW-1 (F)	1/15/2004	0.2 U B	1.29	1 U
MW-1(F)	MW-1(F)	4/15/2004			
MW-2(M)	MW-2(M)	6/19/2003			
MW-2(M)	MW-2 (M)	10/15/2003	0.2 U	1 U	1 U
MW-2(M)	MW-2 (M)	1/12/2004	0.2 U B	1 U	1 U
MW-2(M)	MW-2(M)	4/14/2004			
MW-6(M)	MW-6(M)	10/22/2003	0.2 U B	0.98 J	1 U
MW-6(M)	MW-6 (M)	1/12/2004	0.288 J+,B	1.11	0.08 J
MW-6(M)	MW-6 (M)	4/13/2004			
MW-7(M)	MW-7(M)	10/13/2003	0.2 U B	2 U	0.11 J
MW-7(M)	MW-7 (M)	1/12/2004	0.2 U	1 U	1 U
MW-7(M)	MW-7 (M)	4/12/2004			
MW-10(M)	MW-10(M)	6/19/2003			
MW-10(M)	MW-10 (M)	10/15/2003	0.262 J+, B	1 U	1 U
MW-10(M)	MW-10 (M)	1/13/2004	0.2 U	1 U	1 U
MW-10(M)	MW-10 (M)	4/13/2004			
MW-11(M)	MW-11 (M)	10/15/2003	0.2 U	1 U	1 U
MW-11(M)	MW-11 (M)	1/13/2004	0.2 U	1 U	1 U
MW-11(M)	MW-11 (M)	4/13/2004			
MW-12(A)	MW-12(A)	10/22/2003	0.2 U	2.77	1 U
MW-12(A)	MW-12 (A)	1/15/2004	0.2 U B	4.41	1 U
MW-12(A)	MW-12(A)	4/16/2004			

TABLE 7

TOTAL METALS IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Mercury	Selenium	Silver
			ug/L	ug/L	ug/L
MW-13(A)	MW-13(A)	10/22/2003	0.2 U	1 U	1 U
MW-13(A)	MW-13 (A)	1/15/2004	0.2 U B	0.96 J	1 U
MW-13(A)	MW-13(A)	4/16/2004			
MW-14(A)	MW-14(A)	10/21/2003	0.2 U	1 U	1 U
MW-14(A)	MW-14 (A)	1/15/2004	0.2 U B	1.05	1 U
MW-14(A)	MW-14(A)	4/16/2004			
MW-15(A)	MW-15(A)	10/20/2003	0.2 U	1 U	1 U
MW-16(A)	MW-16(A)	10/20/2003	0.2 U	1 U	1 U
MW-16(A)	MW-16(A)	1/19/2004	0.2 U	1.35 J+,B	1 U
MW-16(A)	MW-16(A)	4/15/2004			
MW-17(A)	MW-17 (A)	10/17/2003	0.2 U	1 U	1 U
MW-17(A)	BM-17(A)	1/19/2004	0.2 U	1.27 J+,B	1 U
MW-17(A)	MW-17(A)	1/19/2004	0.2 U	1.07 J+,B	1 U
MW-17(A)	MW-17(A)	4/15/2004			
MW-18(A)	MW-18(A)	10/21/2003	0.2 U	1 U	1 U
MW-18(A)	MW-18(A)	1/19/2004	0.2 U	1.28 J+,B	1 U
MW-18(A)	MW-18(A)	4/15/2004			
MW-19(A)	BM-19(A)	10/20/2003	0.2 U	1 U	1 U
MW-19(A)	MW-19(A)	10/20/2003	0.2 U	1 U	1 U
MW-19(A)	MW-19 (A)	1/13/2004	0.33	1 U	1 U
MW-19(A)	MW-19(A)	4/15/2004			

TABLE 7

TOTAL METALS IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Mercury	Selenium	Silver
			ug/L	ug/L	ug/L
MW-20(A)	MW-20(A)	10/20/2003	0.2 U	1 U	1 U
MW-20(A)	MW-20 (A)	1/13/2004	0.2 U	1 U	1 U
MW-20(A)	MW-20(A)	4/15/2004			
MW-21(A)	MW-21(A)	10/20/2003	0.2 U	0.87 J	1 U
MW-21(A)	BM-21 (A)	1/13/2004	0.157 J	1 U	0.07 J
MW-21(A)	MW-21 (A)	1/13/2004	0.0836 J	1 U	1 U
MW-21(A)	MW-21(A)	4/16/2004			
MW-22(A)	MW-22 (A)	10/16/2003	0.2 U	1 U	1 U
MW-22(A)	MW-22(A)	1/19/2004	0.2 U	1.17 J+,B	1 U
MW-22(A)	MW-22(A)	4/15/2004			
MW-23(A)	MW-23(A)	10/20/2003	0.2 U	1 U	1 U
MW-23(A)	MW-23 (A)	1/15/2004	0.2 U B	1.23	1 U
MW-23(A)	BM-23(A)	4/15/2004			
MW-23(A)	MW-23(A)	4/15/2004			
MW-24(A)	MW-24(A)	10/21/2003	0.2 U	0.6 J	1 U
MW-24(A)	MW-24 (A)	1/15/2004	0.2 U B	1 U	1 U
MW-24(A)	MW-24(A)	4/14/2004			
MW-26(A)	MW-26 (A)	10/17/2003	0.223 J+, B	1 U	1 U
MW-26(A)	MW-26 (A)	1/15/2004	0.2 U B	1 U	1 U
MW-26(A)	MW-26(A)	4/14/2004			
MW-27(A)	MW-27(A)	10/21/2003	0.2 U	1.05	1 U
MW-27(A)	MW-27 (A)	1/14/2004	0.2 U B	1 U	1 U
MW-27(A)	MW-27 (A)	4/14/2004			

TABLE 7

TOTAL METALS IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Mercury	Selenium	Silver
			ug/L	ug/L	ug/L
MW-28(A)	MW-28 (A)	10/17/2003	0.2 U	1 U	1 U
MW-28(A)	MW-28(A)	1/19/2004	0.2 U	1.3 J+,B	1 U
MW-28(A)	MW-28(A)	4/14/2004			
MW-29(A)	MW-29(A)	10/21/2003	0.2 U	1 U	1 U
MW-29(A)	MW-29(A)	1/19/2004	0.2 U	1.23 J+,B	1 U
MW-29(A)	MW-29(A)	4/16/2004			
MW-30(A)	MW-30 (A)	10/16/2003	0.248 J+, B	1 U	1 U
MW-30(A)	MW-30 (A)	1/16/2004	0.2 U B	1.06	1 U
MW-30(A)	MW-30 (A)	4/13/2004			
MW-31(A)	BM-31 (A)	10/16/2003	0.2 U	1 U	1 U
MW-31(A)	MW-31 (A)	10/16/2003	0.2 U	1 U	1 U
MW-31(A)	MW-31 (A)	1/12/2004	0.115 J	1 U	1 U
MW-31(A)	BM-31 (A)	4/13/2004			
MW-31(A)	MW-31 (A)	4/13/2004			
MW-32(A)	MW-32(A)	10/14/2003	0.2 U B	2 U	1 U
MW-32(A)	MW-32 (A)	1/12/2004	0.19 J	1 U	1 U
MW-32(A)	MW-32 (A)	4/13/2004			
MW-33(A)	MW-33(A)	10/14/2003	0.2 U B	2 U	1 U
MW-33(A)	MW-33 (A)	1/12/2004	0.0747 B	1 U	1 U
MW-33(A)	MW-33 (A)	4/13/2004			
MW-34(A)	MW-34(A)	10/14/2003	0.2 U B	2 U	1 U
MW-34(A)	MW-34 (A)	1/13/2004	0.2 U	1 U	1 U

TABLE 7

TOTAL METALS IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Mercury	Selenium	Silver
			ug/L	ug/L	ug/L
MW-34(A)	MW-34 (A)	4/14/2004			
MW-35(A)	MW-35 (A)	10/16/2003	0.2 U	1 U	1 U
MW-35(A)	MW-35 (A)	1/16/2004	0.2 U B	1.49	1 U
MW-35(A)	MW-35 (A)	4/13/2004			
MW-36(A)	MW-36(A)	10/21/2003	0.2 U	2.16	1 U
MW-36(A)	MW-36 (A)	1/14/2004	0.2 U B	1 U	1 U
MW-36(A)	MW-36 (A)	4/14/2004			
MW-37(A)	MW-37 (A)	10/17/2003	0.2 U	1 U	1 U
MW-38(A)	MW-38(A)	10/21/2003	0.2 U	1 U	1 U
MW-38(A)	MW-38 (A)	1/14/2004	0.2 U	1 U	1 U
MW-38(A)	MW-38 (A)	4/14/2004			
MW-39(A)	MW-39 (A)	10/16/2003	0.2 U	1 U	1 U
MW-39(A)	MW-39 (A)	1/16/2004	0.31 JB	0.9 J	1 U
MW-39(A)	MW-39 (A)	4/14/2004			
MW-40(A)	MW-40 (A)	10/17/2003	0.2 U	1 U	1 U
MW-40(A)	MW-40(A)	1/20/2004	0.2 U	1.14 J+,B	1 U
MW-40(A)	MW-40(A)	4/16/2004			
MW-41(A)	MW-41(A)	10/14/2003	0.2 U B	2 U	1 U
MW-42(A)	MW-42 (A)	10/15/2003	0.2 U	0.71 J	1 U
MW-43(A)	MW-43(A)	10/13/2003	0.2 U B	2 U	1 U

TABLE 7

TOTAL METALS IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Mercury	Selenium	Silver
			ug/L	ug/L	ug/L
MW-43(A)	MW-43 (A)	1/12/2004	0.2 U B	1 U	1 U
MW-43(A)	MW-43 (A)	4/13/2004			
MW-44(A)	MW-44 (A)	10/17/2003	0.2 U	1 U	1 U
MW-45(A)	MW-45 (A)	10/16/2003	0.2 U	1 U	1 U
MW-45(A)	MW-45 (A)	1/16/2004	0.2 U	1.45	1 U
MW-45(A)	MW-45 (A)	4/14/2004			
MW-46(A)	MW-46(A)	10/14/2003	0.2 U B	2 U	1 U
MW-46(A)	MW-46(A)	1/14/2004	0.2 U	1 U	1 U
MW-46(A)	MW-46 (A)	4/12/2004			
MW-46(A)	MW-46(A)	4/12/2004			
MW-47(A)	MW-47(A)	10/13/2003	0.2 U	2 U	1 U
MW-47(A)	MW-47 (A)	1/14/2004	0.2 U	1 U	1 U
MW-47(A)	MW-47 (A)	4/12/2004			
MW-47(A)	MW-47(A)	4/12/2004			
MW-48(A)	MW-48(A)	10/14/2003	0.2 U	2 U	1 U
MW-48(A)	MW-48 (A)	1/14/2004	0.2 U	1 U	1 U
MW-48(A)	MW-48 (A)	4/12/2004			
MW-48(A)	MW-48(A)	4/12/2004			
R-1(M)	R-1(M)	10/22/2003	0.2 U	1 U	1 U

**TABLE 8
DISSOLVED METALS IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Arsenic ug/L	Barium ug/L	Cadmium ug/L	Chromium ug/L	Lead ug/L	Mercury ug/L
MW-1(F)	MW-1 (F)	1/15/2004	1.4	60.9	1 U	1 U	1 U B	0.2 U
MW-2(M)	MW-2 (M)	10/15/2003	19.3	11.8	1 U	1.37	2.03	0.2 U B
MW-6(M)	MW-6(M)	6/19/2003					10 U	
MW-6(M)	MW-6(M)	10/22/2003	13.3	12.4	1 U	1.32	0.27 J	0.038 J
MW-7(M)	BM-7(M)	6/19/2003					10 U	
MW-7(M)	MW-7(M)	6/19/2003					10 U	
MW-7(M)	MW-7(M)	10/13/2003	9.85	17.8	1 U	1 U	1 U	0.2 U B
MW-10(M)	MW-10 (M)	1/13/2004	26.4	38.2	1 U	1 U	0.37 J	0.2 U
MW-11(M)	MW-11(M)	6/19/2003					10 U	
MW-11(M)	MW-11 (M)	10/15/2003	14.8	10	0.14 J	1.02	0.24 J	0.2 U B
MW-12(A)	MW-12(A)	10/22/2003	1 U	39.5	1 U	1 U	0.24 J	0.2 U
MW-13(A)	MW-13(A)	10/22/2003	1 U	14.3	1 U	1.18	0.74 J	0.2 U
MW-14(A)	MW-14(A)	10/21/2003	1 U	27.7	1 U	1 U	0.21 J	0.2 U
MW-15(A)	MW-15(A)	10/20/2003	1 U	32.8	1 U	1 U	0.32 J	0.2 U
MW-16(A)	MW-16(A)	10/20/2003	1 U	25.4	1 U	1 U	0.34 J	0.2 U
MW-17(A)	MW-17 (A)	10/17/2003	1 U	36.2	1 U	1 U	0.1 J	0.2 U
MW-18(A)	MW-18(A)	10/21/2003	1 U	44.3	1 U	1 U	0.19 J	0.072 J
MW-19(A)	BM-19(A)	10/20/2003	1.88	26.4	1 U	1 U	0.14 J	0.2 U
MW-19(A)	MW-19(A)	10/20/2003	1.73	28.8	1 U	1 U	0.39 J	0.2 U
MW-20(A)	MW-20(A)	10/20/2003	1.18	15	1 U	1 U	0.22 J	0.2 U
MW-21(A)	MW-21(A)	10/20/2003	1 U	15.2	1 U	1 U	0.43 J	0.2 U

**TABLE 8
DISSOLVED METALS IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury
			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-22(A)	MW-22 (A)	10/16/2003	1 U	17	1 U	1.04	0.19 J	0.2 U B
MW-23(A)	MW-23(A)	10/20/2003	1 U	24.7	1 U	1 U	0.33 J	0.2 U
MW-24(A)	MW-24(A)	10/21/2003	2.43	57.2	1 U	1 U	0.33 J	0.2 U
MW-26(A)	MW-26 (A)	10/17/2003	1 U	52	1 U	1 U	1.16	0.2 U B
MW-27(A)	MW-27(A)	10/21/2003	0.99 J	11.9	0.1 J	1 U	0.3 J	0.2 U
MW-28(A)	MW-28 (A)	10/17/2003	1 U	38.1	1 U	1 U	1.02	0.2 U B
MW-29(A)	MW-29(A)	10/21/2003	5.97	19.7	1 U	1 U	3	0.088 J
MW-30(A)	MW-30 (A)	10/16/2003	6.93	27.6	1 U	1.25	0.44 J	0.2 U B
MW-31(A)	BM-31 (A)	10/16/2003	13.3	23.3	1 U	0.99 J	1 U	0.2 U
MW-31(A)	MW-31 (A)	10/16/2003	15.3	25.2	1 U	1.11	0.18 J	0.2 U B
MW-32(A)	MW-32(A)	10/14/2003	2.28	25	1 U	1 U	0.13 J	0.2 U
MW-33(A)	MW-33(A)	10/14/2003	18.2	15.5	1 U	1 U	0.14 J	0.2 U B
MW-34(A)	MW-34(A)	10/14/2003	1 U	23.5	1 U	1 U	0.14 J	0.2 U
MW-35(A)	MW-35 (A)	10/16/2003	1 U	13.2	1 U	0.92 J	1 U	0.2 U J
MW-36(A)	MW-36(A)	10/21/2003	1 U	82.7	1 U	1 U	0.98 J	0.2 U
MW-37(A)	MW-37 (A)	10/17/2003	1 U	24.8	1 U	2.03	0.41 J	0.2 U B
MW-38(A)	MW-38(A)	10/21/2003	1 U	20	1 U	1 U	0.24 J	0.2 U
MW-39(A)	MW-39 (A)	10/16/2003	1.79	6.83	1 U	0.86 J	0.19 J	0.2 U B

**TABLE 8
DISSOLVED METALS IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury
			ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-40(A)	MW-40 (A)	10/17/2003	1.86	22.2	1 U	1.3	0.27 J	0.2 U B
MW-41(A)	MW-41(A)	10/14/2003	12.4	23	1 U	1 U	1 U	0.2 U B
MW-42(A)	MW-42 (A)	10/15/2003	35.6	20.2	1 U	1 U	0.48 J	0.2 U B
MW-43(A)	MW-43(A)	10/13/2003	7.34	23.4	1 U	1 U	0.14 J	0.2 U
MW-44(A)	MW-44 (A)	10/17/2003	11.9	13	1 U	1.09	0.29 J	0.2 U B
MW-45(A)	MW-45 (A)	10/16/2003	2.25	3.79	1 U	0.97 J	0.16 J	0.2 U
MW-46(A)	MW-46(A)	10/14/2003	1 U	9.1	1 U	54.3	0.29 J	0.2 U B
MW-47(A)	MW-47(A)	10/13/2003	1 U	17.4	1 U	1 U	0.18 J	0.2 U
MW-48(A)	MW-48(A)	10/14/2003	1 U	31.4	1 U	1 U	0.51 J	0.2 U J

**TABLE 8
DISSOLVED METALS IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Selenium	Silver
			ug/L	ug/L
MW-1(F)	MW-1 (F)	1/15/2004	1.41	1 U
MW-2(M)	MW-2 (M)	10/15/2003	2 U B	1 U
MW-6(M)	MW-6(M)	6/19/2003		
MW-6(M)	MW-6(M)	10/22/2003	0.76 J	1 U
MW-7(M)	BM-7(M)	6/19/2003		
MW-7(M)	MW-7(M)	6/19/2003		
MW-7(M)	MW-7(M)	10/13/2003	0.93 J	1 U
MW-10(M)	MW-10 (M)	1/13/2004	1.19 J+,B	0.07 J
MW-11(M)	MW-11(M)	6/19/2003		
MW-11(M)	MW-11 (M)	10/15/2003	2 U B	1 U
MW-12(A)	MW-12(A)	10/22/2003	5 U B	1 U
MW-13(A)	MW-13(A)	10/22/2003	5 U B	1 U
MW-14(A)	MW-14(A)	10/21/2003	5 U B	1 U
MW-15(A)	MW-15(A)	10/20/2003	1 U	1 U
MW-16(A)	MW-16(A)	10/20/2003	1 U B	1 U
MW-17(A)	MW-17 (A)	10/17/2003	1 U B	1 U
MW-18(A)	MW-18(A)	10/21/2003	1 U B	1 U
MW-19(A)	BM-19(A)	10/20/2003	1 U B	1 U
MW-19(A)	MW-19(A)	10/20/2003	1 U B	1 U
MW-20(A)	MW-20(A)	10/20/2003	1 U	1 U
MW-21(A)	MW-21(A)	10/20/2003	1 U B	1 U

**TABLE 8
DISSOLVED METALS IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Selenium ug/L	Silver ug/L
MW-22(A)	MW-22 (A)	10/16/2003	2 U B	1 U
MW-23(A)	MW-23(A)	10/20/2003	1 U	1 U
MW-24(A)	MW-24(A)	10/21/2003	1.27 J+,B	1 U
MW-26(A)	MW-26 (A)	10/17/2003	1 U B	1 U
MW-27(A)	MW-27(A)	10/21/2003	1.6 J+,B	1 U
MW-28(A)	MW-28 (A)	10/17/2003	1 U B	1 U
MW-29(A)	MW-29(A)	10/21/2003	5 U	1 U
MW-30(A)	MW-30 (A)	10/16/2003	2 U B	1 U
MW-31(A)	BM-31 (A)	10/16/2003	1 U	1 U
MW-31(A)	MW-31 (A)	10/16/2003	1 U B	1 U
MW-32(A)	MW-32(A)	10/14/2003	1 U	1 U
MW-33(A)	MW-33(A)	10/14/2003	1 U	1 U
MW-34(A)	MW-34(A)	10/14/2003	1 U	1 U
MW-35(A)	MW-35 (A)	10/16/2003	1 U	1 U
MW-36(A)	MW-36(A)	10/21/2003	2.61 J+,B	1 U
MW-37(A)	MW-37 (A)	10/17/2003	1 U B	1 U
MW-38(A)	MW-38(A)	10/21/2003	1.34 J+,B	1 U
MW-39(A)	MW-39 (A)	10/16/2003	1.11 J+, B	1 U

**TABLE 8
DISSOLVED METALS IN GROUND WATER**

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

Locator ID	Sample ID	Sample Date	Selenium	Silver
			ug/L	ug/L
MW-40(A)	MW-40 (A)	10/17/2003	1 U	1 U
MW-41(A)	MW-41(A)	10/14/2003	1 U	1 U
MW-42(A)	MW-42 (A)	10/15/2003	2 U B	1 U
MW-43(A)	MW-43(A)	10/13/2003	0.96 J	1 U
MW-44(A)	MW-44 (A)	10/17/2003	1 U B	1 U
MW-45(A)	MW-45 (A)	10/16/2003	1 U	1 U
MW-46(A)	MW-46(A)	10/14/2003	1 U	1 U
MW-47(A)	MW-47(A)	10/13/2003	1 U	1 U
MW-48(A)	MW-48(A)	10/14/2003	1 U	1 U

TABLE 9
ANIONS and CATIONS IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Alkalinity,	Calcium	Chemical	Chloride	Iron	Magnesium	Manganese
			Total		Oxygen				
			mgCaCO ₃ /L	mg/L	Demand	mg/L	mg/L	mg/L	mg/L
					mg/L				
MW-1(F)	MW-1(F)	10/22/2003	490	119		17.5	46.6	46.8	10.5
MW-2(M)	MW-2(M)	6/19/2003			26.1		28.1		
MW-2(M)	MW-2 (M)	10/15/2003	116	23.4		16.8	39.3	11.1	1.69
MW-6(M)	MW-6(M)	6/19/2003			15.8		11.8		
MW-6(M)	MW-6 (M)	1/12/2004	130	15.7		16.5	29	11.1	2.32
MW-7(M)	BM-7(M)	6/19/2003			16.4		12.2		
MW-7(M)	MW-7(M)	6/19/2003			14.8		13		
MW-7(M)	MW-7(M)	10/13/2003	208	41.8		13.2	19.6	19.5	1.06
MW-10(M)	MW-10(M)	6/19/2003			30.6		47		
MW-10(M)	MW-10 (M)	10/15/2003	225	46.5		9.61	68.3	32.6	1.32
MW-11(M)	MW-11(M)	6/19/2003			9.51		25.7		
MW-11(M)	MW-11 (M)	10/15/2003	115	13.8		20.8	27.8	17.6	0.473
MW-12(A)	MW-12(A)	10/22/2003					0.87		
MW-12(A)	MW-12 (A)	1/15/2004	136	131		13.9	0.133	J 18.3	0.0127
MW-13(A)	MW-13(A)	10/22/2003	497	136		14.8	1.27	20.5	0.131
MW-14(A)	MW-14(A)	10/21/2003	132	110		12.9	0.348	18.3	0.245
MW-15(A)	MW-15(A)	10/20/2003					7.81		
MW-16(A)	MW-16(A)	10/20/2003					13.3		
MW-16(A)	MW-16(A)	1/19/2004	300	92.2		15.8	12	22	0.458
MW-17(A)	MW-17 (A)	10/17/2003	240	102		13.4	18.4	22.4	0.991
MW-18(A)	MW-18(A)	10/21/2003					20		
MW-18(A)	MW-18(A)	1/19/2004	332	67		13.2	28.6	28.1	1.53
MW-19(A)	BM-19(A)	10/20/2003					12.8		
MW-19(A)	MW-19(A)	10/20/2003					12.7		
MW-19(A)	MW-19 (A)	1/13/2004	92.7	19.7		12.6	3.01	10.4	0.162

TABLE 9
ANIONS and CATIONS IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Alkalinity, Total mgCaCO3/L	Calcium mg/L	Chemical Oxygen Demand mg/L	Chloride mg/L	Iron mg/L	Magnesium mg/L	Manganese mg/L
MW-20(A)	MW-20(A)	10/20/2003	71.2	17.8		7.24	15.7	15	0.581
MW-21(A)	MW-21(A)	10/20/2003					25		
MW-21(A)	BM-21 (A)	1/13/2004	109	20.8		7.85	15.3	9.32	0.576
MW-21(A)	MW-21 (A)	1/13/2004	107	20.4		7.86	14.1	9.33	0.581
MW-22(A)	MW-22 (A)	10/16/2003					18.6		
MW-22(A)	MW-22(A)	1/19/2004	85	26.6		10.2	14.3	10	0.337
MW-23(A)	MW-23(A)	10/20/2003	90.3	37.8		11.5	6.21	11.2	0.293
MW-24(A)	MW-24(A)	10/21/2003	206	12.1		54.5	1.2	7.62	0.225
MW-26(A)	MW-26 (A)	10/17/2003					13.9		
MW-26(A)	MW-26 (A)	1/15/2004	127	21		12.3	34.6	7.66	1.39
MW-27(A)	MW-27(A)	10/21/2003					0.996		
MW-27(A)	MW-27 (A)	1/14/2004	34.4	12.5		10.2	33.3	5.72	0.294
MW-28(A)	MW-28 (A)	10/17/2003					58.5		
MW-28(A)	MW-28(A)	1/19/2004	138	46.9		10.7	48.3	14.5	1.61
MW-29(A)	MW-29(A)	10/21/2003					37.6		
MW-29(A)	MW-29(A)	1/19/2004	173	26.4		10.1	41.4	13.1	1.78
MW-30(A)	MW-30 (A)	10/16/2003	162	28		8.51	38.2	16.6	1.47
MW-31(A)	BM-31 (A)	10/16/2003	200	33.9		10.8	29.5	23.3	1.75
MW-31(A)	MW-31 (A)	10/16/2003	202	33.5		10.7	29.1	23.5	1.7
MW-32(A)	MW-32(A)	10/14/2003	153	12.4		26.7	3.24	24.4	0.11
MW-33(A)	MW-33(A)	10/14/2003	186	24.1		16.6	16.7	14.1	0.575
MW-34(A)	MW-34(A)	10/14/2003	179	31.6		19.1	5.5	26	0.324
MW-35(A)	MW-35 (A)	10/16/2003	45.7	9.06		16.6	5.93	6.62	0.206

TABLE 9
ANIONS and CATIONS IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Alkalinity, Total mgCaCO ₃ /L	Calcium mg/L	Chemical Oxygen Demand mg/L	Chloride mg/L	Iron mg/L	Magnesium mg/L	Manganese mg/L
MW-36(A)	MW-36(A)	10/21/2003					15		
MW-36(A)	MW-36 (A)	1/14/2004	84	17.9		6.75	0.41	5.45	0.059
MW-37(A)	MW-37 (A)	10/17/2003					27.1		
MW-38(A)	MW-38(A)	10/21/2003	150	32.4		17.2	1.48	13	0.209
MW-39(A)	MW-39 (A)	10/16/2003					6.09		
MW-39(A)	MW-39 (A)	1/16/2004	63.7	11.8		9.7	12.8	5.05	0.146
MW-40(A)	MW-40 (A)	10/17/2003	190	28.4		10.4	42.5	24.9	1.44
MW-41(A)	MW-41(A)	10/14/2003	185	40.6		9.23	35	13.6	2.29
MW-42(A)	MW-42 (A)	10/15/2003	218	48.3		7.64	48.2	18.1	2.62
MW-43(A)	MW-43(A)	10/13/2003	91	25.9		9.31	6.25	5.58	0.598
MW-44(A)	MW-44 (A)	10/17/2003	90.8	17.1		14.6	36.8	5.1	0.54
MW-45(A)	MW-45 (A)	10/16/2003					10.4		
MW-45(A)	MW-45 (A)	1/16/2004	71.6	24.1		12.1	0.798	7.53	0.0577
MW-46(A)	MW-46(A)	10/14/2003	54	10.1		7.64	15.4	6.32	0.722
MW-47(A)	MW-47(A)	10/13/2003	36.1	7.89		11.6	0.49	8.34	0.0476
MW-48(A)	MW-48(A)	10/14/2003	83.3	18		11.6	25.7	10.4	0.872

TABLE 9
ANIONS and CATIONS IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Nitrogen, Nitrate (as N) mg/L	Nitrogen, Nitrate- Nitrite mg/L	Potassium mg/L	Sodium mg/L	Sulfate mg/L	Total Dissolved Solids mg/L	Total Organic Carbon (TOC) mg/L
MW-1(F)	MW-1(F)	10/22/2003		1 U	8.54	96.3	168		
MW-2(M)	MW-2(M)	6/19/2003	0.1 U					138	4.61
MW-2(M)	MW-2 (M)	10/15/2003		2 U B	6.03	12.6	1 U B		
MW-6(M)	MW-6(M)	6/19/2003	0.1 U					163	4.07
MW-6(M)	MW-6 (M)	1/12/2004		0.5 U	4	21.9	1.43		
MW-7(M)	BM-7(M)	6/19/2003	0.1 U					244	3.96
MW-7(M)	MW-7(M)	6/19/2003	0.1 U					248	3.9
MW-7(M)	MW-7(M)	10/13/2003		0.149	6.69	14.3	5.76		
MW-10(M)	MW-10(M)	6/19/2003	0.1 U					330	7.59
MW-10(M)	MW-10 (M)	10/15/2003		2 U B	11.3	11.6	0.77 U B		
MW-11(M)	MW-11(M)	6/19/2003	0.1 U					182	1.92
MW-11(M)	MW-11 (M)	10/15/2003		2 U	8.13	8.56	2.36		
MW-12(A)	MW-12(A)	10/22/2003							
MW-12(A)	MW-12 (A)	1/15/2004		2.01	7.11	64	371		
MW-13(A)	MW-13(A)	10/22/2003		0.02 U	7.71	62.6	52.6		
MW-14(A)	MW-14(A)	10/21/2003		0.0472	7.41	51.4	353		
MW-15(A)	MW-15(A)	10/20/2003							
MW-16(A)	MW-16(A)	10/20/2003							
MW-16(A)	MW-16(A)	1/19/2004		0.107 J+,B	7.99	43.5	133		
MW-17(A)	MW-17 (A)	10/17/2003		2 U	11.8	56.4	204		
MW-18(A)	MW-18(A)	10/21/2003							
MW-18(A)	MW-18(A)	1/19/2004		0.05 U	11.1	45.4	24.2		
MW-19(A)	BM-19(A)	10/20/2003							
MW-19(A)	MW-19(A)	10/20/2003							
MW-19(A)	MW-19 (A)	1/13/2004		0.512	5.05	24.5	25		

TABLE 9
ANIONS and CATIONS IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Nitrogen, Nitrate (as N) mg/L	Nitrogen, Nitrate- Nitrite mg/L	Potassium mg/L	Sodium mg/L	Sulfate mg/L	Total Dissolved Solids mg/L	Total Organic Carbon (TOC) mg/L
MW-20(A)	MW-20(A)	10/20/2003		1 U	7.17	18	90.5		
MW-21(A)	MW-21(A)	10/20/2003							
MW-21(A)	BM-21 (A)	1/13/2004		0.5 U	5.52	13.9	8.34		
MW-21(A)	MW-21 (A)	1/13/2004		0.5 U	5.21	14.1	7.94		
MW-22(A)	MW-22 (A)	10/16/2003							
MW-22(A)	MW-22(A)	1/19/2004		0.415 J+,B	5.28	12	38.1		
MW-23(A)	MW-23(A)	10/20/2003		1 U B	4.71	20.9	104		
MW-24(A)	MW-24(A)	10/21/2003		1 U B	7.9	92.4	17.6		
MW-26(A)	MW-26 (A)	10/17/2003							
MW-26(A)	MW-26 (A)	1/15/2004		0.5 U	3.98	9.58	12.8		
MW-27(A)	MW-27(A)	10/21/2003							
MW-27(A)	MW-27 (A)	1/14/2004		0.76	3.07	14.4	43.9		
MW-28(A)	MW-28 (A)	10/17/2003							
MW-28(A)	MW-28(A)	1/19/2004		0.05 U	4.23	16.8	128		
MW-29(A)	MW-29(A)	10/21/2003							
MW-29(A)	MW-29(A)	1/19/2004		0.0531 J+,B	5.53	7.11	4.95		
MW-30(A)	MW-30 (A)	10/16/2003		2 U	7.18	7.49	1 U		
MW-31(A)	BM-31 (A)	10/16/2003		2 U B	9.03	11.4	3.28		
MW-31(A)	MW-31 (A)	10/16/2003		2 U	8.92	11.6	1.2 J+,B		
MW-32(A)	MW-32(A)	10/14/2003		0.052 J	12	48.2	64.5		
MW-33(A)	MW-33(A)	10/14/2003		0.094 J	9.21	39.6	13.8		
MW-34(A)	MW-34(A)	10/14/2003		0.039 J	12.4	14.8	16.4		
MW-35(A)	MW-35 (A)	10/16/2003		2 U	4.94	8.04	8.64		

TABLE 9
ANIONS and CATIONS IN GROUND WATER

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

Locator ID	Sample ID	Sample Date	Nitrogen, Nitrate (as N) mg/L	Nitrogen, Nitrate- Nitrite mg/L	Potassium mg/L	Sodium mg/L	Sulfate mg/L	Total Dissolved Solids mg/L	Total Organic Carbon (TOC) mg/L
MW-36(A)	MW-36(A)	10/21/2003							
MW-36(A)	MW-36 (A)	1/14/2004		0.852	3.86	19	9.99		
MW-37(A)	MW-37 (A)	10/17/2003							
MW-38(A)	MW-38(A)	10/21/2003		1 U	6.6	29.4	38.9		
MW-39(A)	MW-39 (A)	10/16/2003							
MW-39(A)	MW-39 (A)	1/16/2004		0.5 U	2.82	10.2	3.45		
MW-40(A)	MW-40 (A)	10/17/2003		2 U	12.4	10	1.13		
MW-41(A)	MW-41(A)	10/14/2003		0.2 U	5.33	8.68	5.91		
MW-42(A)	MW-42 (A)	10/15/2003		2 U	6.49	9.19	5.8		
MW-43(A)	MW-43(A)	10/13/2003		0.07 J	4.32	6.42	7.61		
MW-44(A)	MW-44 (A)	10/17/2003		2 U	3.42	10.3	8.53		
MW-45(A)	MW-45 (A)	10/16/2003							
MW-45(A)	MW-45 (A)	1/16/2004		1.18	4.38	13.2	22.7		
MW-46(A)	MW-46(A)	10/14/2003		0.112 J	5.74	5.77	1.24	J+,B	
MW-47(A)	MW-47(A)	10/13/2003		1.03	7.26	8.79	25.2		
MW-48(A)	MW-48(A)	10/14/2003		0.2 U	8.76	10.6	45.6		

TABLE 10**PRODUCT REMOVAL****Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

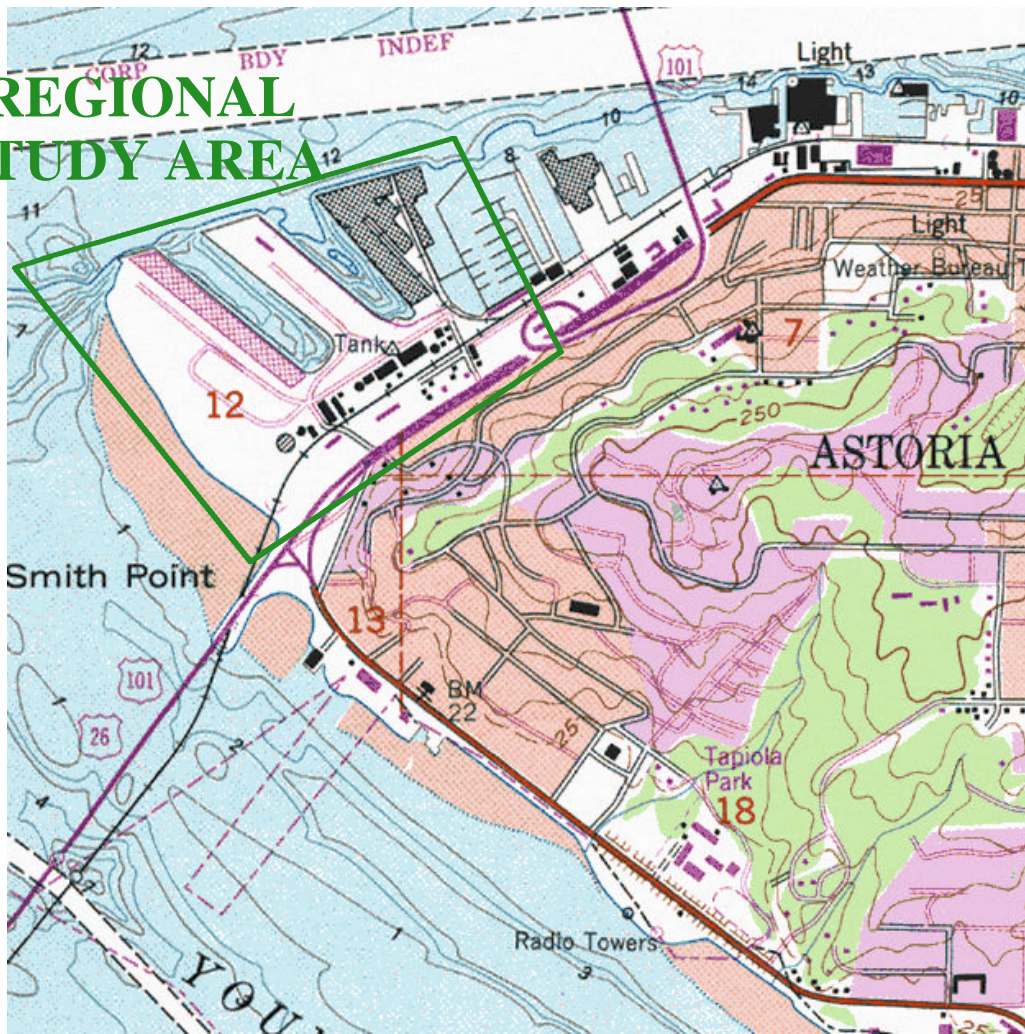
Well #	Date	Time	Amount of Product Removed (cubic feet)	Amount of Product Removed (ounces)	Amount of Product Removed (gallons)	Total Gallons
MW-3(M)	8/13/2003	15:09	0.02		0.150	2.201
MW-3(M)	10/23/2003	9:39		9	0.070	
MW-3(M)	10/23/2003	10:40		3	0.023	
MW-3(M)	11/12/2003	15:20		4	0.030	
MW-3(M)	11/12/2003	16:00		2	0.016	
MW-3(M)	12/16/2003	15:22		33	0.264	
MW-3(M)	1/20/2004	10:25		90	0.720	
MW-3(M)	2/12/2004	15:40		80	0.640	
MW-3(M)	3/18/2004	15:40		36	0.288	
MW-4(M)	7/14/2003	13:49	0.002		0.015	1.498
MW-4(M)	7/14/2003	14:52	0.0006		0.004	
MW-4(M)	8/13/2003	14:51	0.0004		0.004	
MW-4(M)	10/23/2003	9:18		4	0.032	
MW-4(M)	10/23/2003	10:29		0.2	0.002	
MW-4(M)	2/12/2004	0:00		55	0.440	
MW-4(M)	3/18/2004	16:00			1.000	
MW-8(M)	7/14/2003	13:34	0.007		0.052	0.273
MW-8(M)	7/14/2003	14:29	0.0008		0.006	
MW-8(M)	8/13/2003	14:42	0.003		0.022	
MW-8(M)	10/23/2003	8:36		15	0.120	
MW-8(M)	10/23/2003	10:20		1	0.008	
MW-8(M)	11/12/2003	15:30		4	0.032	
MW-8(M)	3/18/2004	15:00		4	0.032	
MW-9(M)	7/14/2003	13:15	0.02		0.150	0.982

TABLE 10**PRODUCT REMOVAL****Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

MW-9(M)	7/14/2003	14:39	0.005		0.037
MW-9(M)	8/13/2003	14:31	0.01		0.075
MW-9(M)	10/23/2003	9:56		18	0.144
MW-9(M)	10/23/2003	11:00		9	0.072
MW-9(M)	11/12/2003	15:45		5	0.040
MW-9(M)	12/16/2003	15:05		6	0.048
MW-9(M)	1/20/2004	10:50		4	0.032
MW-9(M)	2/12/2004	0:00		20	0.160
MW-9(M)	3/18/2004	15:20		28	0.224
MW-15(A)	5/19/2004	14:05			sample only
MW-37(A)	5/19/2004	14:30		1	0.008
MW-40(A)	11/12/2003	16:45		1	0.008
MW-40(A)	5/19/2004	15:10		5	0.040
MW-41(A)	5/19/2004	10:05		8	0.064
MW-42(A)	5/19/2004	10:30			2.000
MW-44(A)	5/19/2004	15:10			0.500

FIGURES

REGIONAL STUDY AREA



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

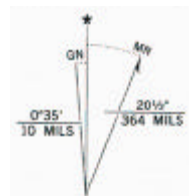
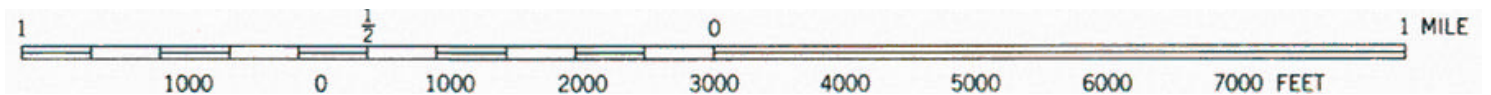


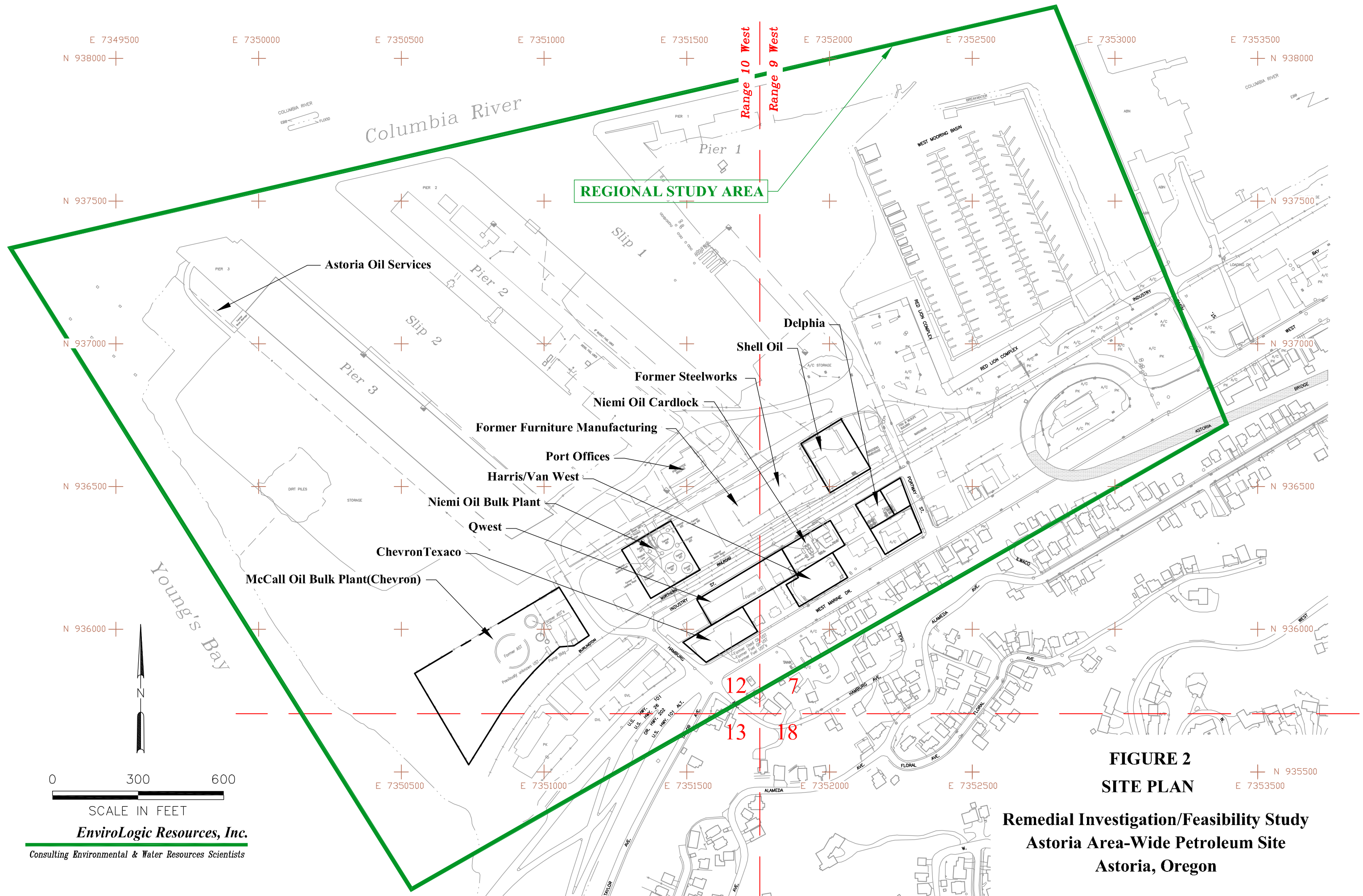
FIGURE 1

SITE LOCATION

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

EnviroLogic Resources, Inc.

Consulting Environmental & Water Resources Scientists



REGIONAL STUDY AREA

Range 10 West

Range 9 West

**FIGURE 2
SITE PLAN**

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

E 7349500 E 7350000 E 7350500 E 7351000 E 7351500 E 7352000 E 7352500 E 7353000 E 7353500

N 938000 N 937500 N 937000 N 936500 N 936000 N 935500

Columbia River

Young's Bay

Pier 1
Pier 2
Pier 3

Slip 1
Slip 2
Slip 3

Astoria Oil Services

Shell Oil

Delphia

Former Steelworks

Niemi Oil Cardlock

Former Furniture Manufacturing

Port Offices

Harris/Van West

Niemi Oil Bulk Plant

Qwest

ChevronTexaco

McCall Oil Bulk Plant(Chevron)

WEST MOORING BASIN

RED LION COMPLEX

INDUSTRY

ASTORIA BRIDGE

ALAMEDA AVE

HAMBURG AVE

FLORAL AVE

WEST MARINE DR

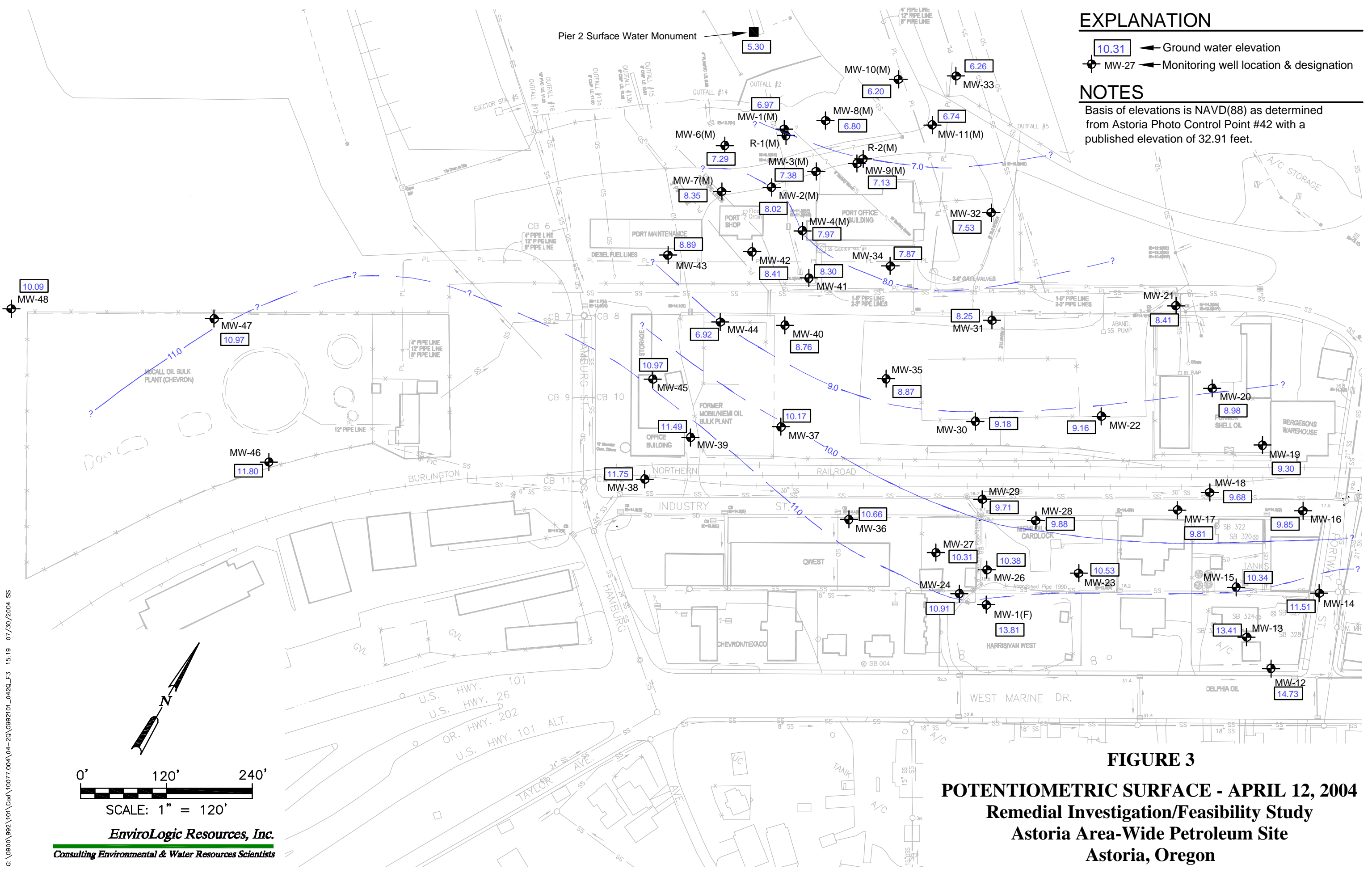
12 7
13 18



SCALE IN FEET

EnviroLogic Resources, Inc.

Consulting Environmental & Water Resources Scientists



EXPLANATION

- 10.31 ← Ground water elevation
- ⊕ MW-27 ← Monitoring well location & designation

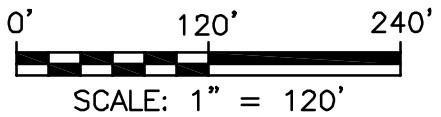
NOTES

Basis of elevations is NAVD(88) as determined from Astoria Photo Control Point #42 with a published elevation of 32.91 feet.

FIGURE 3

POTENTIOMETRIC SURFACE - APRIL 12, 2004
Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

c:\08001992\101\Cad\10077.004\04-20\C992101_0420_F3 15:19 07/30/2004 SS



EnviroLogic Resources, Inc.

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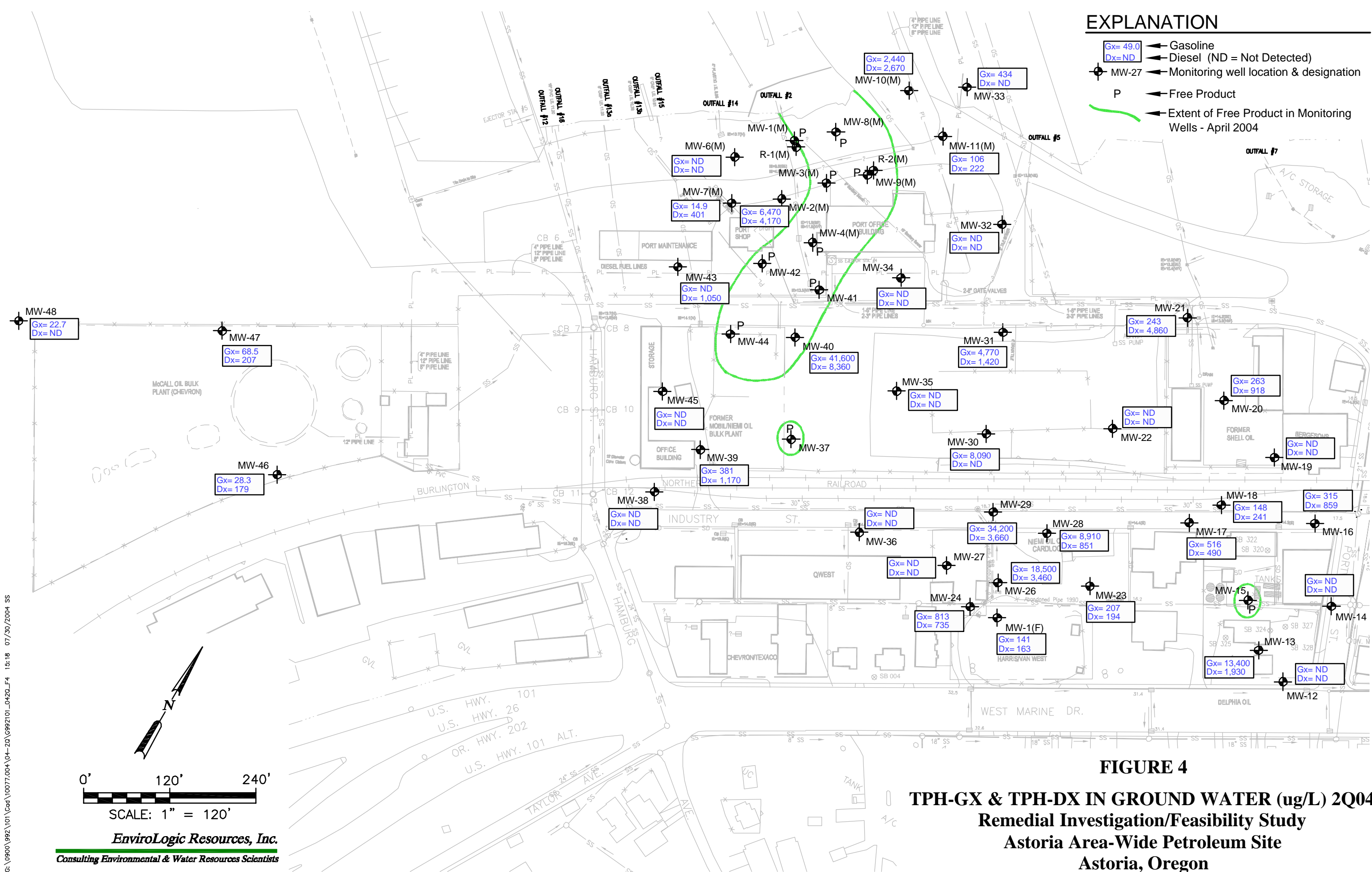


FIGURE 4
TPH-GX & TPH-DX IN GROUND WATER (ug/L) 2Q04
Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

G:\0900\992\101\Cad\10077.004\04-2a\9992101_0420_F4 15:18 07/30/2004 SS

EnviroLogic Resources, Inc.
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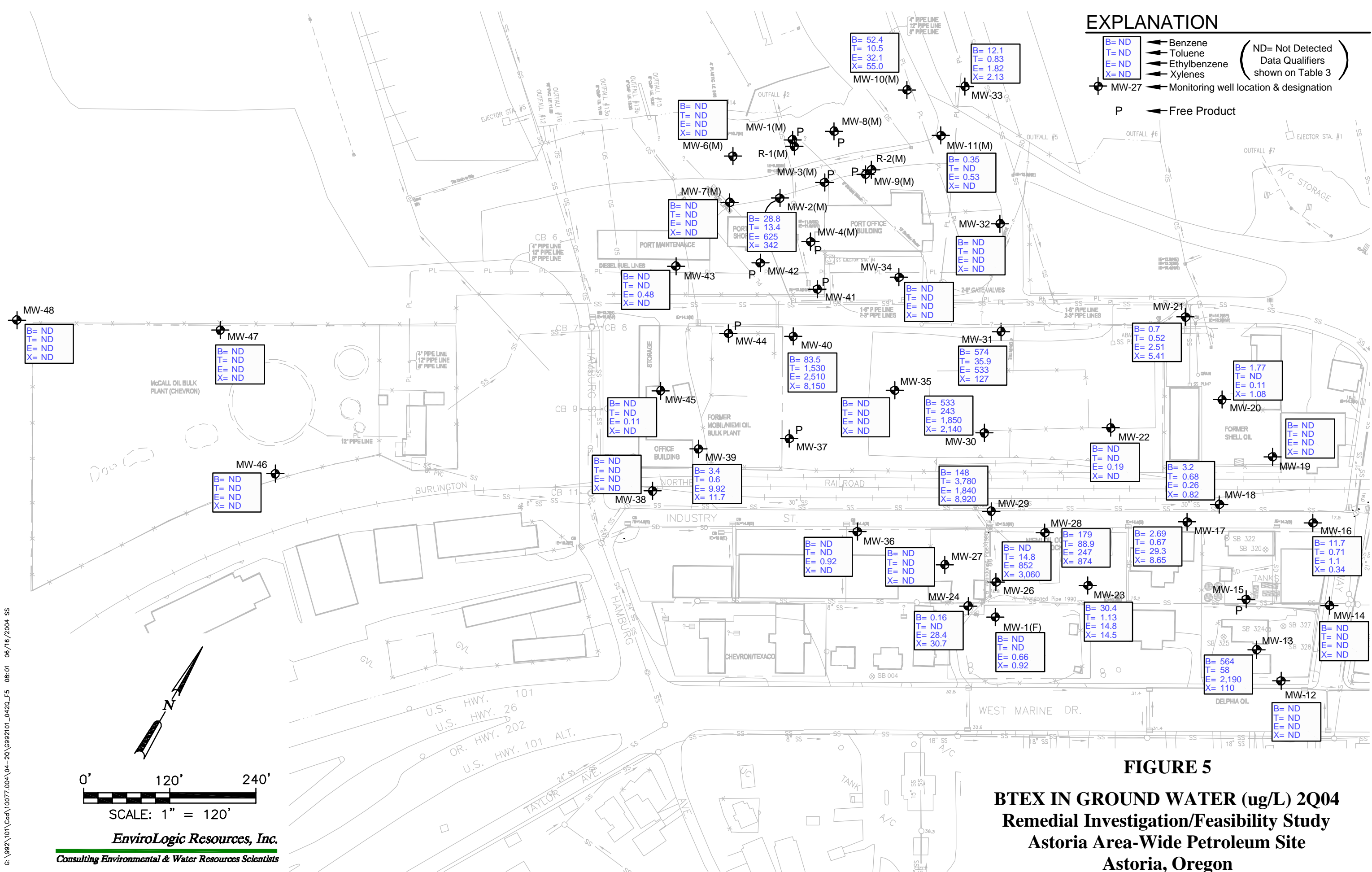


FIGURE 5
BTEX IN GROUND WATER (ug/L) 2Q04
Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon

EXPLANATION

- N = 0.0512 ← Naphthalene (ND= Not Detected, Data)
- T = ND ← 1,2,4-Trimethylbenzene (Qualifiers shown on Table 3)
- MW-27 ← Monitoring well location & designation
- P ← Free Product

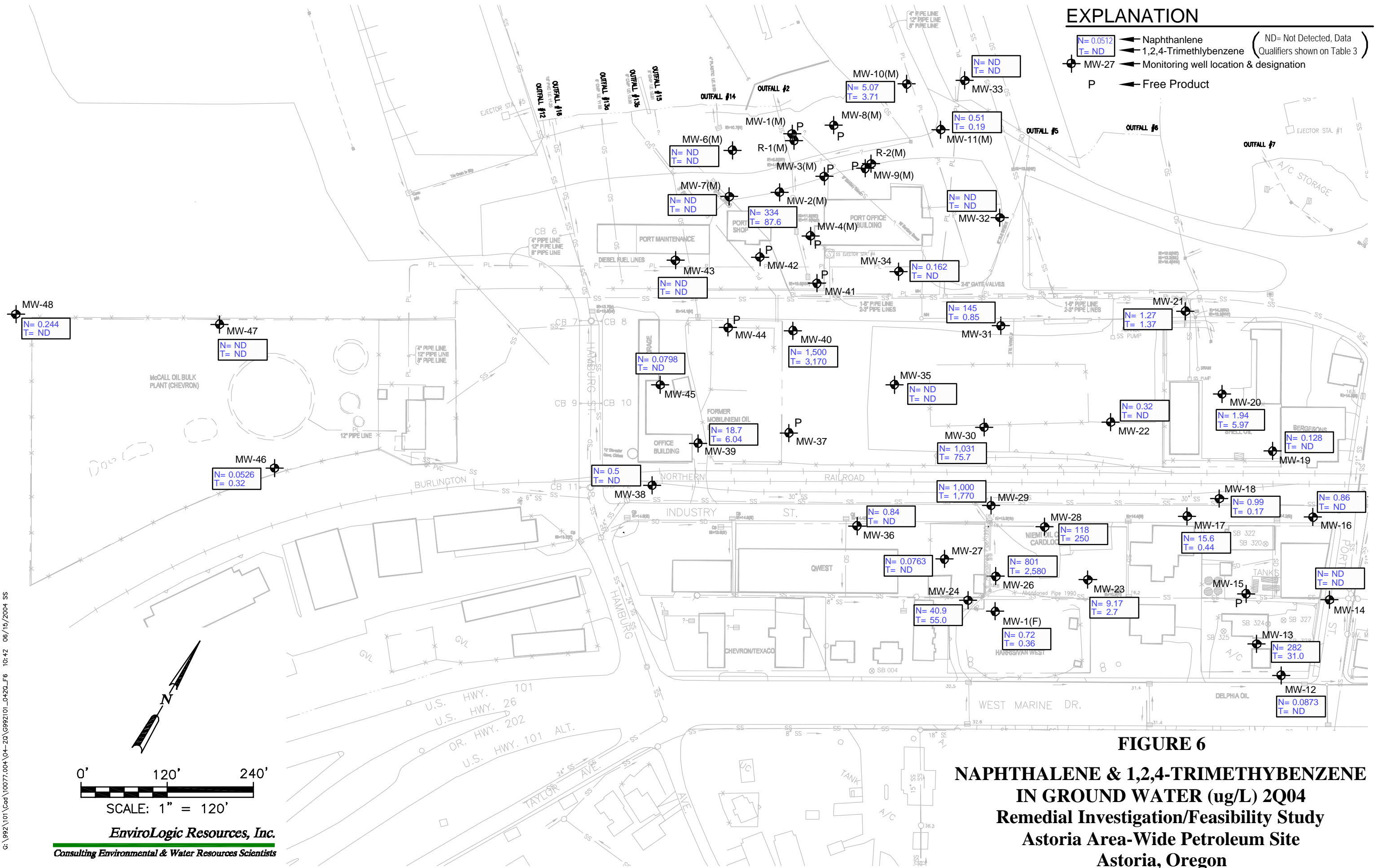


FIGURE 6

**NAPHTHALENE & 1,2,4-TRIMETHYLBENZENE
IN GROUND WATER (ug/L) 2Q04
Remedial Investigation/Feasibility Study
Astoria Area-Wide Petroleum Site
Astoria, Oregon**

c:\992\101\Cad\100771.004\04-20\6992101_0420_F6 10:42 06/15/2004 SS

APPENDIX A

METHODS AND PROCEDURES

APPENDIX A
METHODS AND PROCEDURES
GROUND-WATER SAMPLING

Standardized methods and procedures were developed prior to commencement of field activities. This protocol helped to control the quality of samples collected 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. 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.

EnviroLogic Resources, Inc., performed all ground-water sampling and related activities. Ground-water level measurements were recorded from the monitoring wells at the start of the sampling event.

Ground-water samples were collected from 37 wells. The monitoring wells were first checked for free product, water levels were measured, and then approximately 3-borehole volumes of ground water were removed. Wells were purged using an ES-40 purge pump connected to clear vinyl PVC tubing. The water was transferred into a 250-gallon tote. Once the appropriate amount of water was purged from the well, the pH, temperature, and conductivity were measured continuously until stabilization using an Oakton meter. If the well was purged of all water, then the purging process was considered complete. Once ground water recovered or the field parameter readings were stable, the DO was measured down hole using a YSI 55 DO meter. Next, ground water was sampled with a weighted disposable PVC bailer to fill the VOA bottles. After filling the VOA bottles, polyethylene tubing was inserted into the well if not already present in the well from the last sampling event and connected to silicon tubing, and ground water was sampled through this tubing into the appropriate bottles using a Model 410 Solinst peristaltic pump. Finally, ground water was collected into a glass beaker and field parameters (pH,

temperature, conductivity, and ORP) were measured and recorded. The ORP was measured with an ORPTestr. Field parameters are presented on the Ground-Water Sampling Logs in Appendix B. The tubing was left inside the well casing to be used during the next sampling event, and the well was closed. When the tote was full of purged water, the water was pumped into a 4,000-gallon Baker tank, which is stored near the bank at the base of Slip 2.

Product was removed by using polyethylene tubing and a peristaltic pump. The tubing was held at the elevation of the product to collect only product to the extent possible. The product is contained in a 55-gallon drum stored on site.

Investigation derived waste (IDW), including purged and decontamination water are stored on-site in one staging area. The water is stored in a 4,000-gallon Baker tank. Samples of the water in the Baker Tank were collected and analyzed to compare concentrations to the discharge limits set by DEQ in a letter dated August 27, 2003. The concentrations of constituents in the decontamination and purge water were below discharge limits and the water was discharged from the Baker tank to a nearby storm water catch basin that has an outfall in Slip 2.

Field equipment blanks were collected and analyzed along with laboratory method blanks 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. These are described in Appendix B of the RI/FS Work Plan (*EnviroLogic Resources, 2002b*).

APPENDIX B
WATER SAMPLING LOGS

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-1(F)
Sampled By: MNB, NAES

Date: 4/15/2004	Sample ID: MW-1(F)
Time Sample Collected: 7:30	Well or Boring No.: MW-1(F)
COC and RFA No.:	
Static Water Level: 18.36 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 50 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 23.6%, 2.56 mg/L
Color: tan/orange	Temperature: 12.2 deg C
Turbidity: clear to slight	ORP: 164 mV
Conductance: 640 μ S	pH: 6.75
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 7 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-2(M)
Sampled By: MNB, NAES

Date: 4/14/2004	Sample ID: MW-2(M)
Time Sample Collected: 17:30	Well or Boring No.: MW-2(M)
COC and RFA No.:	
Static Water Level: 7.07 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 70 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 0.6%, 0.08 mg/L
Color: light grey	Temperature: 12.4 deg C
Turbidity: cloudy	ORP: 126 mV
Conductance: 366 μ S	pH: 6.68
Odor: Medium	Other:
Analysis Requested:	
Comments: Approx. 11 ft water column; slight sheen	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-6(M)
Sampled By: MNB, NAES

Date: 4/13/2004	Sample ID: MW-6(M)
Time Sample Collected: 10:45	Well or Boring No.: MW-6(M)
COC and RFA No.:	
Static Water Level: 6.45 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 35 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 5.0%, 0.59 mg/L
Color: clear	Temperature: 12.6 deg C
Turbidity: none	ORP:
Conductance: 509 μ S	pH: 6.60
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 12 ft water column; pumped dry after 35 gallons	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-7(M)
Sampled By: MNB, NAES

Date: 4/12/2004	Sample ID: MW-7(M)
Time Sample Collected: 7:30	Well or Boring No.: MW-7(M)
COC and RFA No.:	
Static Water Level: 6.63 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 91 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 6.9%, 0.70 mg/L
Color: clear	Temperature: 13.2 deg C
Turbidity: none	ORP: 91 mV
Conductance: 357 μ S	pH: 6.93
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 13 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-10(M)
Sampled By: MNB, NAES

Date: 4/13/2004	Sample ID: MW-10(M)
Time Sample Collected: 8:20	Well or Boring No.: MW-10(M)
COC and RFA No.:	
Static Water Level: 10.19 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 70 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 0%, -0.5 mg/L
Color: mostly clear	Temperature: 12.6 deg C
Turbidity: cloudy	ORP: 14 mV
Conductance: 751 μ S	pH: 6.85
Odor: slight to none	Other:
Analysis Requested:	
Comments: Approx. 10 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-11(M)
Sampled By: MNB, NAES

Date: 4/13/2004	Sample ID: MW-11(M)
Time Sample Collected: 9:45	Well or Boring No.: MW-11(M)
COC and RFA No.:	
Static Water Level: 9.53 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 30 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 6.2%, 0.68 mg/L
Color: clear to tan	Temperature: 13.2 deg C
Turbidity:	ORP: 17 mV
Conductance: 371 μ S	pH: 6.89
Odor: slight to moderate	Other:
Analysis Requested:	
Comments: Approx. 10 ft water column; pumped dry after 30 gallons	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-12(A)
Sampled By: MNB, NAES

Date: 4/16/2004	Sample ID: MW-12(A)
Time Sample Collected: 7:25	Well or Boring No.: MW-12(A)
COC and RFA No.:	
Static Water Level: 16.0 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 65 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 15.3%, 1.62 mg/L
Color: clear	Temperature: 12.3 deg C
Turbidity: none	ORP: 199 mV
Conductance: 881 μ S	pH: 6.64
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 9 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-13(A)
Sampled By: MNB, NAES

Date: 4/16/2004	Sample ID: MW-13(A)
Time Sample Collected: 9:27	Well or Boring No.: MW-13(A)
COC and RFA No.:	
Static Water Level: 18.82 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 40 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 27.6%, 2.95 mg/L
Color: dark grey to start then light grey	Temperature: 13.6 deg C
Turbidity: slightly cloudy	ORP: 194 mV
Conductance: 728 μ S	pH: 7.46
Odor: medium to strong	Other:
Analysis Requested:	
Comments: Approx. 6 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-14(A)
Sampled By: MNB, NAES

Date: 4/16/2004	Sample ID: MW-14(A)
Time Sample Collected: 8:15	Well or Boring No.: MW-14(A)
COC and RFA No.:	
Static Water Level: 11.97 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 42 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 28.0%, 3.01 mg/L
Color: clear to tan/orange	Temperature: 12.1 deg C
Turbidity: slight	ORP: 232 mV
Conductance: 722 μ S	pH: 6.61
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 6 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-16(A)
Sampled By: MNB, NAES

Date: 4/15/2004	Sample ID: MW-16(A)
Time Sample Collected: 8:50	Well or Boring No.: MW-16(A)
COC and RFA No.:	
Static Water Level: 6.68 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 56 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 10.2%, 1.12 mg/L
Color: light yellowish/orange	Temperature: 12.2 deg C
Turbidity: none	ORP: 154 mV
Conductance: 729 μ S	pH: 6.86
Odor: Slight	Other:
Analysis Requested:	
Comments: Approx. 8 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-17(A)
Sampled By: MNB, NAES

Date: 4/15/2004	Sample ID: MW-17(A)
Time Sample Collected: 10:55	Well or Boring No.: MW-17(A)
COC and RFA No.:	
Static Water Level: 6.00 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 63 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 3.5%, 0.36 mg/L
Color: clear	Temperature: 12.3 deg C
Turbidity: none	ORP: 96 mV
Conductance: 545 μ S	pH: 6.95
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 9 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-18(A)
Sampled By: MNB, NAES

Date: 4/15/2004	Sample ID: MW-18(A)
Time Sample Collected: 10:00	Well or Boring No.: MW-18(A)
COC and RFA No.:	
Static Water Level: 6.62 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 56 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 4.1%, 0.38 mg/L
Color: mostly clear	Temperature: 12.6 deg C
Turbidity: slightly cloudy	ORP: 49 mV
Conductance: 657 μ S	pH: 6.88
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 8 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-19(A)
Sampled By: MNB, NAES

Date: 4/15/2004	Sample ID: MW-19(A)
Time Sample Collected: 15:45	Well or Boring No.: MW-19(A)
COC and RFA No.:	
Static Water Level: 8.67 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 42 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 13.6%, 1.48 mg/L
Color: clear	Temperature: 11.9 deg C
Turbidity: slightly cloudy	ORP: 159 mV
Conductance: 256 μ S	pH: 6.95
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 6 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-20(A)
Sampled By: MNB, NAES

Date: 4/15/2004	Sample ID: MW-20(A)
Time Sample Collected: 16:42	Well or Boring No.: MW-20(A)
COC and RFA No.:	
Static Water Level: 8.13 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 50 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 5.9%, 0.65 mg/L
Color: clear	Temperature: 13.1 deg C
Turbidity: none	ORP: 57 mV
Conductance: 324 μ S	pH: 6.88
Odor: Slight to none	Other:
Analysis Requested:	
Comments: Approx. 7 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-21(A)
Sampled By: MNB, NAES

Date: 4/16/2004	Sample ID: MW-21(A)
Time Sample Collected: 11:15	Well or Boring No.: MW-21(A)
COC and RFA No.:	
Static Water Level: 7.58 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 50 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 1.04%, 1.17 mg/L
Color: clear to tan/orange	Temperature: 12.7 deg C
Turbidity: slight	ORP: 149 mV
Conductance: 344 μ S	pH: 6.64
Odor: None to slight	Other:
Analysis Requested:	
Comments: Approx. 7.5 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-22(A)
Sampled By: MNB, NAES

Date: 4/15/2004	Sample ID: MW-22(A)
Time Sample Collected: 14:35	Well or Boring No.: MW-22(A)
COC and RFA No.:	
Static Water Level: 7.07 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 56 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 32.9%, 3.57 mg/L
Color:	Temperature: 11.9 deg C
Turbidity:	ORP: 173 mV
Conductance: 319 μ S	pH: 6.93
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 8 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-23(A)
Sampled By: MNB, NAES

Date: 4/15/2004	Sample ID: MW-23(A)
Time Sample Collected: 12:01	Well or Boring No.: MW-23(A)
COC and RFA No.:	
Static Water Level: 5.80 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 65 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 19.7%, 2.12 mg/L
Color: clear	Temperature: 12.5 deg C
Turbidity: none	ORP: 166 mV
Conductance: 438 μ S	pH: 6.45
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 9 ft water column; field duplicate taken	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-24(A)
Sampled By: MNB, NAES

Date: 4/14/2004	Sample ID: MW-24(A)
Time Sample Collected: 15:00	Well or Boring No.: MW-24(A)
COC and RFA No.:	
Static Water Level: 5.78 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 70 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 33.4%, 3.70 mg/L
Color:	Temperature: 11.1 deg C
Turbidity:	ORP: 117 mV
Conductance: 489 μ S	pH: 6.62
Odor:	Other:
Analysis Requested:	
Comments: Approx. 10 ft water column; equipment blank taken	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-26(A)
Sampled By: MNB, NAES

Date: 4/14/2004	Sample ID: MW-26(A)
Time Sample Collected: 14:14	Well or Boring No.: MW-26(A)
COC and RFA No.:	
Static Water Level: 6.0 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 45 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 31.5%, 3.45 mg/L
Color: clear	Temperature: 11.4 deg C
Turbidity: none to slight	ORP: 122 mV
Conductance: 315 μ S	pH: 6.48
Odor: moderate	Other:
Analysis Requested:	
Comments: Approx. 9 ft water column; pumped dry after 45 gallons	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-27(A)
Sampled By: MNB, NAES

Date: 4/14/2004	Sample ID: MW-27(A)
Time Sample Collected: 13:00	Well or Boring No.: MW-27(A)
COC and RFA No.:	
Static Water Level: 6.15 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 55 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 24.5%, 2.70 mg/L
Color: slightly light orange to clear	Temperature: 11.6 deg C
Turbidity: slightly cloudy	ORP: 216 mV
Conductance: 212 μ S	pH: 6.45
Odor: None	Other:
Analysis Requested:	
Comments:	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-28(A)
Sampled By: MNB, NAES

Date: 4/14/2004	Sample ID: MW-28(A)
Time Sample Collected: 16:12	Well or Boring No.: MW-28(A)
COC and RFA No.:	
Static Water Level: 6.31 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 63 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 6.8%, 0.76 mg/L
Color: light grey	Temperature: 12.3 deg C
Turbidity: cloudy	ORP: 63 mV
Conductance: 490 μ S	pH: 6.62
Odor: medium	Other:
Analysis Requested:	
Comments: Approx. 9 ft water column; Sheen on water.	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-29(A)
Sampled By: MNB, NAES

Date: 4/16/2004	Sample ID: MW-29(A)
Time Sample Collected: 12:22	Well or Boring No.: MW-29(A)
COC and RFA No.:	
Static Water Level: 6.25 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 63 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 10.2%, 1.10 mg/L
Color: slightly yellow to clear	Temperature: 12.1 deg C
Turbidity: none	ORP: 96 mV
Conductance: 315 μ S	pH: 6.67
Odor: medium to strong	Other:
Analysis Requested:	
Comments: Approx. 9 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-30(A)
Sampled By: MNB, NAES

Date: 4/13/2004	Sample ID: MW-30(A)
Time Sample Collected: 17:10	Well or Boring No.: MW-30(A)
COC and RFA No.:	
Static Water Level: 7.52 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 50 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 7.3%, 0.78 mg/L
Color: light grey	Temperature: 11.8 deg C
Turbidity: cloudy	ORP: 145 mV
Conductance: 432 μ S	pH: 6.75
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 7 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-31(A)
Sampled By: MNB, NAES

Date: 4/13/2004	Sample ID: MW-31(A)
Time Sample Collected: 14:25	Well or Boring No.: MW-31(A)
COC and RFA No.:	
Static Water Level: 8.0 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 50 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 1.2%, 0.17 mg/L
Color: slightly grey to clear	Temperature: 12.5 deg C
Turbidity: none	ORP: 28 mV
Conductance: 417 μ S	pH: 6.97
Odor: slight	Other:
Analysis Requested:	
Comments: Approx. 7 ft water column; collected field duplicate	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-32(A)
Sampled By: MNB, NAES

Date: 4/13/2004	Sample ID: MW-32(A)
Time Sample Collected: 13:40	Well or Boring No.: MW-32(A)
COC and RFA No.:	
Static Water Level: 9.12 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 42 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 0.2%, 0.1 mg/L
Color: clear	Temperature: 13.0 deg C
Turbidity: none	ORP: 142 mV
Conductance: 438 μ S	pH: 6.81
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 6 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-33(A)
Sampled By: MNB, NAES

Date: 4/13/2004	Sample ID: MW-33(A)
Time Sample Collected: 7:15	Well or Boring No.: MW-33(A)
COC and RFA No.:	
Static Water Level: 9.92 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 63 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 9.0%, 0.93 mg/L
Color: tan/orange	Temperature: 12.5 deg C
Turbidity: slight	ORP: 58 mV
Conductance: 555 μ S	pH: 6.92
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 10 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-34(A)
Sampled By: MNB, NAES

Date: 4/14/2004	Sample ID: MW-34(A)
Time Sample Collected: 7:20	Well or Boring No.: MW-34(A)
COC and RFA No.:	
Static Water Level: 8.04 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 50 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 5.3%, 0.57 mg/L
Color: clear	Temperature: 11.9 deg C
Turbidity: slight	ORP: 191 mV
Conductance: 514 μ S	pH: 6.20
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 7 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-35(A)
Sampled By: MNB, NAES

Date: 4/13/2004	Sample ID: MW-35(A)
Time Sample Collected: 15:50	Well or Boring No.: MW-35(A)
COC and RFA No.:	
Static Water Level: 7.65 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 56 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 10.1%, 1.11 mg/L
Color: clear	Temperature: 11.4 deg C
Turbidity: slightly cloudy	ORP: 139 mV
Conductance: 249 μ S	pH: 6.93
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 8 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-36(A)
Sampled By: MNB, NAES

Date: 4/14/2004	Sample ID: MW-36(A)
Time Sample Collected: 12:30	Well or Boring No.: MW-36(A)
COC and RFA No.:	
Static Water Level: 5.55 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 20 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 36%, 3.86 mg/L
Color: clear	Temperature: 12.4 deg C
Turbidity: none	ORP: 201 mV
Conductance: 335 μ S	pH: 6.46
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 10 ft water column; pumped dry after 20 gallons	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-38(A)
Sampled By: MNB, NAES

Date: 4/14/2004	Sample ID: MW-38(A)
Time Sample Collected: 10:45	Well or Boring No.: MW-38(A)
COC and RFA No.:	
Static Water Level: 5.48 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 50 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 11.2%, 1.30 mg/L
Color: mostly clear	Temperature: 11.4 deg C
Turbidity: slightly cloudy	ORP: 189 mV
Conductance: 287 μ S	pH: 6.72
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 9 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-39(A)
Sampled By: MNB, NAES

Date: 4/14/2004	Sample ID: MW-39(A)
Time Sample Collected: 9:20	Well or Boring No.: MW-39(A)
COC and RFA No.:	
Static Water Level: 5.89 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 63 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 14.5%, 1.60 mg/L
Color: clear	Temperature: 11.0 deg C
Turbidity: none	ORP: 193 mV
Conductance: 115 μ S	pH: 6.88
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 9 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-40(A)
Sampled By: MNB, NAES

Date: 4/16/2004	Sample ID: MW-40(A)
Time Sample Collected: 14:20	Well or Boring No.: MW-40(A)
COC and RFA No.:	
Static Water Level: 7.48 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 50 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 2.7%, 0.30 mg/L
Color: light yellow	Temperature: 12.1 deg C
Turbidity: slightly cloudy	ORP: 90 mV
Conductance: 409 μ S	pH: 6.61
Odor: strong	Other:
Analysis Requested:	
Comments: Approx. 7 ft water column; Sheen on water – close to being free product.	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-43(A)
Sampled By: MNB, NAES

Date: 4/13/2004	Sample ID: MW-43(A)
Time Sample Collected: 12:30	Well or Boring No.: MW-43(A)
COC and RFA No.:	
Static Water Level: 7.10 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 56 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 13.8%, 1.48 mg/L
Color: clear	Temperature: 12.1 deg C
Turbidity: clear	ORP: 120 mV
Conductance: 346 μ S	pH: 6.56
Odor: None to slight	Other:
Analysis Requested:	
Comments: Approx. 8 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-45(A)
Sampled By: MNB, NAES

Date: 4/14/2004	Sample ID: MW-45(A)
Time Sample Collected: 8:20	Well or Boring No.: MW-45(A)
COC and RFA No.:	
Static Water Level: 6.42 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 50 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 19.2%, 2.14 mg/L
Color: milky orange to start then mostly clear	Temperature: 10.9 deg C
Turbidity: none	ORP: 201 mV
Conductance: 198 μ S	pH: 6.68
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 8.5 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-46(A)
Sampled By: MNB, NAES

Date: 4/12/2004	Sample ID: MW-46(A)
Time Sample Collected: 15:55	Well or Boring No.: MW-46(A)
COC and RFA No.:	
Static Water Level: 4.21 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 75 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 14.7%, 1.59 mg/L
Color: creamy orange to start then lt yellow	Temperature: 11.6 deg C
Turbidity: cloudy	ORP: 166 mV
Conductance: 468 μ S	pH: 6.39
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 11 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-47(A)
Sampled By: MNB, NAES

Date: 4/12/2004	Sample ID: MW-47(A)
Time Sample Collected: 14:40	Well or Boring No.: MW-47(A)
COC and RFA No.:	
Static Water Level: 5.42 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 63 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 16.1%, 1.85 mg/L
Color: yellow to clear	Temperature: 10.8 deg C
Turbidity: none	ORP: 100 mV
Conductance: 199 μ S	pH: 6.57
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 9 ft water column	

WATER SAMPLE LOG

Project Number: 10077.004
Project Name: Astoria Area-Wide Petroleum Site
Facility: Astoria Area-Wide
Locator ID: MW-48(A)
Sampled By: MNB, NAES

Date: 4/12/2004	Sample ID: MW-48(A)
Time Sample Collected: 13:45	Well or Boring No.: MW-48(A)
COC and RFA No.:	
Static Water Level: 6.14 feet	Time:
Well Depth:	Date Drilled:
Filter Pack Thickness:	Casing or "Geoprobe" Diameter:
Amount Purged: 65 gallons	Bailer or Well Point Depth:
Sample Collection Method: Bailer and peristaltic pump	
Pump intake depth:	
Discharge rate during sampling:	DO: 13.6%, 1.43 mg/L
Color: clear	Temperature: 11.6 deg C
Turbidity: none	ORP: 55 mV
Conductance: 388 μ S	pH: 6.64
Odor: None	Other:
Analysis Requested:	
Comments: Approx. 9 ft water column	

APPENDIX C

*LABORATORY ANALYTICAL REPORTS
WITH DATA VALIDATION REPORTS*

MEMORANDUM

To: File – 10077.004

From: Nancy East-Smith

Date: June 15, 2004

Subject: **QUALITY ASSURANCE/QUALITY CONTROL REVIEW**
Third Complete Ground Water Sampling Event – 2nd Quarter 2004
ASTORIA AREA WIDE PETROLEUM SITE

This report presents the results of our review of laboratory analytical reports and the data validation conducted based on the laboratory reports for the third ground-water sampling event conducted at the site. The samples were collected on April 12, 13, 14, 15 and 16 2004 as part of the third ground-water sampling event. Sample handling, analysis and quality control (QC) procedures were established in the July 15, 2002, Remedial Investigation/Feasibility Study, Astoria Area-Wide Petroleum Site, Astoria, Oregon, Phase I Work Plan (Phase 1 RI/FS) and the Work Plan Addendum, Phase 1 Ground Water Assessment, Astoria Area-Wide Petroleum Site, Astoria, Oregon, DEQ ECSI File #2277. Both documents were prepared by *EnviroLogic Resources, Inc.* The samples were submitted to North Creek Analytical, Inc., (NCA) of Beaverton, Oregon, for analysis.

A total of 47 water samples were submitted for analysis. This included 37 field samples, 2 field duplicates, 2 equipment blanks and 6 trip blanks. The samples were submitted in 3 groups, each group was assigned a lab order number. Basic information about each lab order number is presented below:

Lab Order	Number of Samples	Sample Type	Date Collected	Field Locations
P4D0481	19 3 1	Field Samples Trip Blanks Field Duplicate	4/12, 13, 14/2004	MW-48, MW-47, MW-46, MW-7, MW-33, MW-10, MW-11, MW-6, MW-43, MW-32. MW-31, BM-31 MW-35, MW-30, MW-34, MW-45, MW-39, MW-38, MW-36, MW-27

P4D0600	16 1 1 2	Field Samples Field Duplicate Equipment Blank Trip Blank	4/14, 15, 16/2004	MW-28, MW-24, MW-26, MW-2, MW-23, MW-17, MW-18, BM-23 MW-16, MW-1, MW-22, MW-19, MW-20, MW-12 MW-14, MW-13 MW-21
P4D0629	2 1 1	Field Samples Equipment Blank Trip Blanks	4/16/2004	MW-29, MW-40

As stated in Appendix B, Sections 8.0, 9.0, and 10.0 of the Phase I RI/FS Work Plan, our goal was to review the laboratory reports and chain of custodies 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 (lead only)	EPA Method 6000/7000
Volatile Organic Compounds (VOCs)	EPA Method 8260B
Polynuclear Aromatic Compounds (PAHs)	EPA Method 8270M-SIM

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

CHAIN OF CUSTODY REVIEW

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

- Two special conditions were noted on the laboratory cooler receipt form for P4D0600. One sample jar was mislabeled with an incorrect field sample name (time was correct) and two sample jars had loose lids. No sample containers were broken or otherwise in an adverse condition upon arrival at the laboratory.
- Cooler temperatures recorded at the laboratory upon receipt ranged from 0.1°C to 5.5°C.

- Analyses requested on the COC reflect 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.
- **J+.** The analyte was positively identified; the associated numerical value of the analyte in the sample is the estimated to be biased high
- **U.** The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

The attached tables present the original result and the qualified result for all analyses that were qualified. The tables are organized by analytical method and 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. No holding time exceptions were noted.

FIELD BLANKS

Equipment Blanks

Equipment blanks were analyzed at the required frequency. A total of two equipment blanks were submitted for analysis of VOCs. Both equipment blanks were obtained by running de-ionized water through a sample bailer. Toluene was detected in both equipment blanks as noted below.

Analyte	Detected Concentration	MDL	RL
Toluene	0.470J µg/l	0.155 µg/l	0.500 µg/l
Toluene	0.300J µg/l	0.155 µg/l	0.500 µg/l

MDL = Method Detection Limit

RL = Reporting Limit

µg/l = micrograms per liter

Water samples which had this analyte detected within 5 times the concentration detected in the equipment blank are qualified with a UB flag and reported at the RL if the concentration was less than the RL or qualified with a JB flag (at the detected concentration) if the concentration is greater than the RL. Where field samples had analytes detected at concentrations greater than the 5 times the data is not qualified. Laboratory dilution of field samples was considered.

Trip Blanks

A total of 6 trip blanks were submitted for VOC analyses with the 3 lab orders. The trip blanks were provided by the laboratory and consisted of water in a 40 ml clear VOA (volatile organic analysis) vial.

No analytes were detected in the trip blanks.

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. Analytes detected in laboratory blanks are noted below:

Lab Order/ Batch No.	Field Samples Qualified	Analyte Detected in Laboratory Blank	Analytical Method	Blank MDL	Blank RL
P4D0481					
4040615	MW-6, MW-43, MW-35, MW-34, MW-45, MW-38, MW-36, MW-27	TPH-Gx 11.4J ug/l	NWTPH-Gx	6.02 ug/l	80.0 ug/l
4040708	None	Naphthalene – 0.190J ug/l	EPA 8260	0.0989ug/l	2.00 ug/l
P4D0600					
404739	MW-18, MW-1, MW-22, MW-19, MW-12, MW-14	TPH-Gx – 35.2J mg/l	NWTPH-Gx	6.02 ug/l	80.0 ug/l
P4D0629					
4041051	None	TPH-Gx – 36.1J	NWTPH-Gx	6.02 ug/l	80.0 ug/l

Field samples in the same batch that had analytes detected within 5 times the blank concentration are qualified by placing a JB 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 (for both organics and inorganics). 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. We reviewed all of the surrogate recoveries relative to the specified control limits and observed exceptions for six analyses. Where surrogate recoveries were not within control limits batch specific QC information and laboratory notes were reviewed to evaluate the data. This evaluation resulted in no data being qualified due to surrogate recovery issues.

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.

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. Where surrogate recoveries were not within control limits batch specific QC information and laboratory notes were reviewed to evaluate the data. This evaluation resulted in no data being qualified due to spike recovery issues.

LABORATORY AND FIELD DUPLICATES/RELATIVE PERCENT DIFFERENCE

Field duplicate samples were obtained at the frequency of two for 37 field samples. The two duplicates were BM-31 and BM-23. The field duplicate frequency set by the Work Plan was one for every 20 field samples. MSD, Laboratory Control Sample Duplicates (LCSDs), laboratory duplicates and field duplicate analytical information was reviewed. Based on our review several laboratory duplicate sample relative percent differences (RPDs) were not within acceptable limits. Where RPDs were not within control limits, batch specific QC information and laboratory notes were reviewed to evaluate the data. This evaluation resulted in no data being qualified due to RPD exceptions. MS/MSD exceptions for duplicate samples were included in the previous section. Field duplicate exceptions are noted below. RPD exceptions are generally not evaluated for concentrations within 5 times the RL and these are not presented below.

Lab Order	Sample	Analysis/ Sample Type	QC Exception	Comment
P4D0600	MW-23 and BM-23	VOCs by EPA Method 8260	Xylene, 1,2,4-Trimethylbenzene and 1,3,5- Trimethylbenzene RPDs were outside the control limit of 20%.	Review of all other batch QA/QC information does not indicate these represent an out-of- control condition for the batch.
P3J0775	MW-31 and BM-31	TPH-Gx by NWTPHGx, Lead by EPA Method 200s, and VOCs by EPA Method 8260	TPH-Gx, lead and ethylbenzene RPDs for were outside the control limit of 20%	Review of all other batch QA/QC information does not indicate these represent an out-of- control condition for the batch.

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 Work Plan, but they are still acceptable. Overall precision for the analysis was acceptable

RPDs outside the control limits would represent statistical exceptions and indicate a lack of ability to reproduce the data. LCSD evaluate the effect 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 the duplicates did not indicate there was 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.

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 accuracy was acceptable.

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 there were some problems with laboratory and field equipment introducing analytes that were not representative of sample conditions. These problems are summarized here and were discussed in detail

previously. Each of these problems should be addressed to prevent further non-representative samples during future phases of fieldwork.

- Toluene was noted in both equipment blanks. The equipment blanks are obtained by running de-ionized water through a new disposable bailer. The toluene detections indicate there is either toluene in the de-ionized water or the disposable bailers.
- Two different analytes were detected in the laboratory method blanks at concentrations above the MDL but below the RL. These detected analytes, as noted in the Laboratory Method Blank section of this report would not be considered representative of field conditions.

Duplicate field samples attempt to evaluate how representative a sample is of site conditions. Two duplicate water samples were reviewed. Each sample had several analytes that did not met QC criteria. Overall, the representative ness of the laboratory data is acceptable.

Completeness

Completeness evaluates how successful the data set is at being valid. Our data group was 100 percent complete with respect to rejected analysis.

Qualified TPH Data

Laboratory Identification	Sample Name	Analyte	Original Result	Qualified Result	Method Detection Limit	Reporting Limit	Units
P4D0481-10	MW-6(M)	TPH-Gx	7.45 J	80.0 U B	6.02	80.0	ug/l
P4D0481-11	MW-43(A)	TPH-Gx	18.5 J	80.0 U B	6.02	80.0	ug/l
P4D0481-15	MW-35(A)	TPH-Gx	20.7 J	80.0 U B	6.02	80.0	ug/l
P4D0481-17	MW-34(A)	TPH-Gx	37.2 J	80.0 U B	6.02	80.0	ug/l
P4D0481-19	MW-45(A)	TPH-Gx	9.45 J	80.0 U B	6.02	80.0	ug/l
P4D0481-21	MW-38(A)	TPH-Gx	9.36 J	80.0 U B	6.02	80.0	ug/l
P4D0481-22	MW-36(A)	TPH-Gx	18.6 J	80.0 U B	6.02	80.0	ug/l
P4D0481-23	MW-27(A)	TPH-Gx	49.0 J	80.0 U B	6.02	80.0	ug/l
P4D0600-09	MW-18(A)	TPH-Gx	148	148 J B	6.02	80.0	ug/l
P4D0600-12	MW-1(F)	TPH-Gx	141	141 J B	6.02	80.0	ug/l
P4D0600-13	MW-22(A)	TPH-Gx	28.3 J	80.0 U B	6.02	80.0	ug/l
P4D0600-14	MW-19(A)	TPH-Gx	19.9 J	80.0 U B	6.02	80.0	ug/l
P4D0600-16	MW-12(A)	TPH-Gx	27.9 J	80.0 U B	6.02	80.0	ug/l
P4D0600-17	MW-14(A)	TPH-Gx	22.5 J	80.0 U B	6.02	80.0	ug/l

Qualified VOC Data

Laboratory Identification	Sample Name	Analyte	Original Result	Qualified Result	Method Detection Limit	Reporting Limit	Units
P4D0481-05	MW-33(A)	Toluene	0.830	0.830 J B	0.155	0.500	ug/l
P4D0481-07	MW-11(M)	Toluene	0.270 J	0.500 U B	0.155	0.500	ug/l
P4D0481-20	MW-39(A)	Toluene	0.600	0.600 J B	0.155	0.500	ug/l
P4D0481-22	MW-36(A)	Toluene	0.160 J	0.500 U B	0.155	0.500	ug/l
P4D0600-02	MW-24(A)	Toluene	0.330 J	0.500 U B	0.155	0.500	ug/l
P4D0600-03	MW-26(A)	Toluene	14.8	14.8 J B	3.10	10.0	ug/l
P4D0600-07	MW-23(A)	Toluene	1.13	1.13 J B	0.155	0.500	ug/l
P4D0600-08	MW-17(A)	Toluene	0.670	0.670 J B	0.155	0.500	ug/l
P4D0600-09	MW-18(A)	Toluene	0.680	0.680 J B	0.155	0.500	ug/l
P4D0600-10	BM-23(A)	Toluene	0.940	0.940 J B	0.155	0.500	ug/l
P4D0600-11	MW-16(A)	Toluene	0.710	0.710 J B	0.155	0.500	ug/l
P4D0600-15	MW-20(A)	Toluene	0.250 J	0.500 U B	0.155	0.500	ug/l
P4D0600-19	MW-21(A)	Toluene	0.520	0.520 J B	0.155	0.500	ug/l

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). 2001. USEPA Contract Laboratory Program, National Functional Guidelines for Low Concentration Organic Data Review. Office of Emergency and Remedial Response, U.S. Environmental Protection Agency. EPA 540/R-00/006.

USEPA (United States Environmental Protection Agency). 2003. Inorganic National Functional Guidelines Proposed Changes. <http://www.epa.gov/superfund/programs/clp/inorgfgchanges.htm>

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.

EnviroLogic Resources, Inc. Work Plan Addendum, Phase 1 Ground Water Assessment, Astoria Area-Wide Petroleum Site, Astoria, Oregon, DEQ ECSI File #2277, July 2, 2003.



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03 May 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 04/14/04 15:55. 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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-48 (A)	P4D0481-01	Water	04/12/04 13:45	04/14/04 15:55
MW-47 (A)	P4D0481-02	Water	04/12/04 14:40	04/14/04 15:55
MW-46 (A)	P4D0481-03	Water	04/12/04 15:55	04/14/04 15:55
MW-7 (M)	P4D0481-04	Water	04/12/04 17:25	04/14/04 15:55
MW-33 (A)	P4D0481-05	Water	04/13/04 07:15	04/14/04 15:55
MW-10 (M)	P4D0481-06	Water	04/13/04 08:20	04/14/04 15:55
MW-11 (M)	P4D0481-07	Water	04/13/04 09:45	04/14/04 15:55
Trip Blank	P4D0481-08	Water	04/13/04 09:45	04/14/04 15:55
Trip Blank	P4D0481-09	Water	04/12/04 15:55	04/14/04 15:55
MW-6 (M)	P4D0481-10	Water	04/13/04 10:45	04/14/04 15:55
MW-43 (A)	P4D0481-11	Water	04/13/04 12:30	04/14/04 15:55
MW-32 (A)	P4D0481-12	Water	04/13/04 13:40	04/14/04 15:55
MW-31 (A)	P4D0481-13	Water	04/13/04 14:25	04/14/04 15:55
BM-31 (A)	P4D0481-14	Water	04/13/04 14:25	04/14/04 15:55
MW-35 (A)	P4D0481-15	Water	04/13/04 15:50	04/14/04 15:55
MW-30 (A)	P4D0481-16	Water	04/13/04 17:10	04/14/04 15:55
MW-34 (A)	P4D0481-17	Water	04/14/04 07:20	04/14/04 15:55
Trip Blank	P4D0481-18	Water	04/14/04 07:20	04/14/04 15:55
MW-45 (A)	P4D0481-19	Water	04/14/04 08:20	04/14/04 15:55
MW-39 (A)	P4D0481-20	Water	04/14/04 09:20	04/14/04 15:55
MW-38 (A)	P4D0481-21	Water	04/14/04 10:45	04/14/04 15:55
MW-36 (A)	P4D0481-22	Water	04/14/04 12:30	04/14/04 15:55
MW-27 (A)	P4D0481-23	Water	04/14/04 13:00	04/14/04 15:55

North Creek Analytical - Portland

Joy D. Chang, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-48 (A) (P4D0481-01RE1) Water Sampled: 04/12/04 13:45 Received: 04/14/04 15:55										
Gasoline Range Hydrocarbons	22.7	6.02	80.0	ug/l	1	4040740	04/19/04	04/20/04	NW TPH-G	J
Surrogate: 4-BFB	89.6 %		50-150			"	"	"	"	
MW-47 (A) (P4D0481-02RE1) Water Sampled: 04/12/04 14:40 Received: 04/14/04 15:55										
Gasoline Range Hydrocarbons	6.85	6.02	80.0	ug/l	1	4040740	04/19/04	04/20/04	NW TPH-G	J
Surrogate: 4-BFB	84.6 %		50-150			"	"	"	"	
MW-46 (A) (P4D0481-03RE1) Water Sampled: 04/12/04 15:55 Received: 04/14/04 15:55										
Gasoline Range Hydrocarbons	28.3	6.02	80.0	ug/l	1	4040740	04/19/04	04/20/04	NW TPH-G	J
Surrogate: 4-BFB	87.0 %		50-150			"	"	"	"	
MW-7 (M) (P4D0481-04RE1) Water Sampled: 04/12/04 17:25 Received: 04/14/04 15:55										
Gasoline Range Hydrocarbons	14.9	6.02	80.0	ug/l	1	4040740	04/19/04	04/20/04	NW TPH-G	J
Surrogate: 4-BFB	82.6 %		50-150			"	"	"	"	
MW-33 (A) (P4D0481-05RE1) Water Sampled: 04/13/04 07:15 Received: 04/14/04 15:55										
Gasoline Range Hydrocarbons	434	6.02	80.0	ug/l	1	4040740	04/19/04	04/20/04	NW TPH-G	
Surrogate: 4-BFB	120 %		50-150			"	"	"	"	
MW-10 (M) (P4D0481-06RE1) Water Sampled: 04/13/04 08:20 Received: 04/14/04 15:55										
Gasoline Range Hydrocarbons	2440	6.02	80.0	ug/l	1	4040740	04/19/04	04/20/04	NW TPH-G	
Surrogate: 4-BFB	206 %		50-150			"	"	"	"	S-09
MW-11 (M) (P4D0481-07) Water Sampled: 04/13/04 09:45 Received: 04/14/04 15:55										
Gasoline Range Hydrocarbons	106	6.02	80.0	ug/l	1	4040615	04/16/04	04/16/04	NW TPH-G	
Surrogate: 4-BFB	59.4 %		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: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 13:23

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-6 (M) (P4D0481-10) Water Sampled: 04/13/04 10:45 Received: 04/14/04 15:55										
Gasoline Range Hydrocarbons	7.45	6.02	80.0	ug/l	1	4040615	04/16/04	04/16/04	NW TPH-G	J
Surrogate: 4-BFB	74.8 %		50-150			"	"	"	"	
MW-43 (A) (P4D0481-11) Water Sampled: 04/13/04 12:30 Received: 04/14/04 15:55										
Gasoline Range Hydrocarbons	18.5	6.02	80.0	ug/l	1	4040615	04/16/04	04/16/04	NW TPH-G	J
Surrogate: 4-BFB	67.6 %		50-150			"	"	"	"	
MW-32 (A) (P4D0481-12) Water Sampled: 04/13/04 13:40 Received: 04/14/04 15:55										
Gasoline Range Hydrocarbons	ND	6.02	80.0	ug/l	1	4040615	04/16/04	04/16/04	NW TPH-G	U
Surrogate: 4-BFB	52.6 %		50-150			"	"	"	"	
MW-31 (A) (P4D0481-13) Water Sampled: 04/13/04 14:25 Received: 04/14/04 15:55										
Gasoline Range Hydrocarbons	3230	6.02	80.0	ug/l	1	4040615	04/16/04	04/16/04	NW TPH-G	
Surrogate: 4-BFB	156 %		50-150			"	"	"	"	S-09
BM-31 (A) (P4D0481-14) Water Sampled: 04/13/04 14:25 Received: 04/14/04 15:55										
Gasoline Range Hydrocarbons	4770	6.02	80.0	ug/l	1	4040615	04/16/04	04/16/04	NW TPH-G	
Surrogate: 4-BFB	185 %		50-150			"	"	"	"	S-09
MW-35 (A) (P4D0481-15) Water Sampled: 04/13/04 15:50 Received: 04/14/04 15:55										
Gasoline Range Hydrocarbons	20.7	6.02	80.0	ug/l	1	4040615	04/16/04	04/16/04	NW TPH-G	J
Surrogate: 4-BFB	53.2 %		50-150			"	"	"	"	
MW-30 (A) (P4D0481-16RE1) Water Sampled: 04/13/04 17:10 Received: 04/14/04 15:55										
Gasoline Range Hydrocarbons	8090	60.2	800	ug/l	10	4040740	04/19/04	04/20/04	NW TPH-G	D
Surrogate: 4-BFB	104 %		50-150			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-34 (A) (P4D0481-17) Water Sampled: 04/14/04 07:20 Received: 04/14/04 15:55										
Gasoline Range Hydrocarbons	37.2	6.02	80.0	ug/l	1	4040615	04/16/04	04/16/04	NW TPH-G	J
<i>Surrogate: 4-BFB</i>	<i>53.0 %</i>		<i>50-150</i>			"	"	"	"	
MW-45 (A) (P4D0481-19) Water Sampled: 04/14/04 08:20 Received: 04/14/04 15:55										
Gasoline Range Hydrocarbons	9.45	6.02	80.0	ug/l	1	4040615	04/16/04	04/16/04	NW TPH-G	J
<i>Surrogate: 4-BFB</i>	<i>66.4 %</i>		<i>50-150</i>			"	"	"	"	
MW-39 (A) (P4D0481-20) Water Sampled: 04/14/04 09:20 Received: 04/14/04 15:55										
Gasoline Range Hydrocarbons	381	6.02	80.0	ug/l	1	4040615	04/16/04	04/16/04	NW TPH-G	J
<i>Surrogate: 4-BFB</i>	<i>77.4 %</i>		<i>50-150</i>			"	"	"	"	
MW-38 (A) (P4D0481-21) Water Sampled: 04/14/04 10:45 Received: 04/14/04 15:55										
Gasoline Range Hydrocarbons	9.36	6.02	80.0	ug/l	1	4040615	04/16/04	04/16/04	NW TPH-G	J
<i>Surrogate: 4-BFB</i>	<i>52.0 %</i>		<i>50-150</i>			"	"	"	"	
MW-36 (A) (P4D0481-22) Water Sampled: 04/14/04 12:30 Received: 04/14/04 15:55										
Gasoline Range Hydrocarbons	18.6	6.02	80.0	ug/l	1	4040615	04/16/04	04/16/04	NW TPH-G	J
<i>Surrogate: 4-BFB</i>	<i>55.2 %</i>		<i>50-150</i>			"	"	"	"	
MW-27 (A) (P4D0481-23) Water Sampled: 04/14/04 13:00 Received: 04/14/04 15:55										
Gasoline Range Hydrocarbons	49.0	6.02	80.0	ug/l	1	4040615	04/16/04	04/16/04	NW TPH-G	J
<i>Surrogate: 4-BFB</i>	<i>61.4 %</i>		<i>50-150</i>			"	"	"	"	

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EnviroLogic Resources, Inc.
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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

**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
MW-48 (A) (P4D0481-01) Water Sampled: 04/12/04 13:45 Received: 04/14/04 15:55										
Diesel Range Organics	ND	0.153	0.250	mg/l	1	4040570	04/15/04	04/15/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	77.2 %		50-150			"	"	"	"	
MW-47 (A) (P4D0481-02) Water Sampled: 04/12/04 14:40 Received: 04/14/04 15:55										
Diesel Range Organics	0.207	0.153	0.250	mg/l	1	4040570	04/15/04	04/15/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	92.4 %		50-150			"	"	"	"	
MW-46 (A) (P4D0481-03) Water Sampled: 04/12/04 15:55 Received: 04/14/04 15:55										
Diesel Range Organics	0.179	0.153	0.250	mg/l	1	4040570	04/15/04	04/16/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	84.8 %		50-150			"	"	"	"	
MW-7 (M) (P4D0481-04) Water Sampled: 04/12/04 17:25 Received: 04/14/04 15:55										
Diesel Range Organics	0.401	0.153	0.250	mg/l	1	4040570	04/15/04	04/16/04	NWTPH-Dx	D-15
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	91.2 %		50-150			"	"	"	"	
MW-33 (A) (P4D0481-05) Water Sampled: 04/13/04 07:15 Received: 04/14/04 15:55										
Diesel Range Organics	ND	0.153	0.250	mg/l	1	4040570	04/15/04	04/16/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	85.4 %		50-150			"	"	"	"	
MW-10 (M) (P4D0481-06) Water Sampled: 04/13/04 08:20 Received: 04/14/04 15:55										
Diesel Range Organics	2.67	0.153	0.250	mg/l	1	4040570	04/15/04	04/16/04	NWTPH-Dx	D-17
Heavy Oil Range Hydrocarbons	0.379	0.286	0.500	"	"	"	"	"	"	J
Surrogate: 1-Chlorooctadecane	97.8 %		50-150			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

**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
MW-11 (M) (P4D0481-07) Water Sampled: 04/13/04 09:45 Received: 04/14/04 15:55										
Diesel Range Organics	0.222	0.153	0.250	mg/l	1	4040570	04/15/04	04/16/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	93.4 %		50-150			"	"	"	"	
MW-6 (M) (P4D0481-10) Water Sampled: 04/13/04 10:45 Received: 04/14/04 15:55										
Diesel Range Organics	ND	0.153	0.250	mg/l	1	4040570	04/15/04	04/16/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	84.8 %		50-150			"	"	"	"	
MW-43 (A) (P4D0481-11) Water Sampled: 04/13/04 12:30 Received: 04/14/04 15:55										
Diesel Range Organics	1.05	0.153	0.250	mg/l	1	4040570	04/15/04	04/16/04	NWTPH-Dx	D-17
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	91.5 %		50-150			"	"	"	"	
MW-32 (A) (P4D0481-12) Water Sampled: 04/13/04 13:40 Received: 04/14/04 15:55										
Diesel Range Organics	ND	0.153	0.250	mg/l	1	4040570	04/15/04	04/16/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	87.7 %		50-150			"	"	"	"	
MW-31 (A) (P4D0481-13) Water Sampled: 04/13/04 14:25 Received: 04/14/04 15:55										
Diesel Range Organics	1.42	0.153	0.250	mg/l	1	4040570	04/15/04	04/16/04	NWTPH-Dx	A-02
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	102 %		50-150			"	"	"	"	
BM-31 (A) (P4D0481-14) Water Sampled: 04/13/04 14:25 Received: 04/14/04 15:55										
Diesel Range Organics	1.37	0.153	0.250	mg/l	1	4040570	04/15/04	04/16/04	NWTPH-Dx	A-02
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	100 %		50-150			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

**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
MW-35 (A) (P4D0481-15) Water Sampled: 04/13/04 15:50 Received: 04/14/04 15:55										
Diesel Range Organics	ND	0.153	0.250	mg/l	1	4040570	04/15/04	04/16/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	70.6 %		50-150			"	"	"	"	
MW-30 (A) (P4D0481-16) Water Sampled: 04/13/04 17:10 Received: 04/14/04 15:55										
Diesel Range Organics	ND	0.153	0.250	mg/l	1	4040570	04/15/04	04/16/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	88.1 %		50-150			"	"	"	"	
MW-34 (A) (P4D0481-17) Water Sampled: 04/14/04 07:20 Received: 04/14/04 15:55										
Diesel Range Organics	ND	0.153	0.250	mg/l	1	4040571	04/15/04	04/16/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	91.8 %		50-150			"	"	"	"	
MW-45 (A) (P4D0481-19) Water Sampled: 04/14/04 08:20 Received: 04/14/04 15:55										
Diesel Range Organics	ND	0.153	0.250	mg/l	1	4040571	04/15/04	04/16/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	76.4 %		50-150			"	"	"	"	
MW-39 (A) (P4D0481-20) Water Sampled: 04/14/04 09:20 Received: 04/14/04 15:55										
Diesel Range Organics	1.17	0.153	0.250	mg/l	1	4040571	04/15/04	04/16/04	NWTPH-Dx	A-02
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	90.9 %		50-150			"	"	"	"	
MW-38 (A) (P4D0481-21) Water Sampled: 04/14/04 10:45 Received: 04/14/04 15:55										
Diesel Range Organics	ND	0.153	0.250	mg/l	1	4040571	04/15/04	04/16/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	84.3 %		50-150			"	"	"	"	

North Creek Analytical - Portland

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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

**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
MW-36 (A) (P4D0481-22) Water Sampled: 04/14/04 12:30 Received: 04/14/04 15:55										
Diesel Range Organics	ND	0.153	0.250	mg/l	1	4040571	04/15/04	04/16/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	92.7 %		50-150			"	"	"	"	
MW-27 (A) (P4D0481-23) Water Sampled: 04/14/04 13:00 Received: 04/14/04 15:55										
Diesel Range Organics	ND	0.153	0.250	mg/l	1	4040571	04/15/04	04/16/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	87.9 %		50-150			"	"	"	"	

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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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

**Total Metals per EPA 200 Series Methods
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-48 (A) (P4D0481-01) Water Sampled: 04/12/04 13:45 Received: 04/14/04 15:55										
Lead	0.0335	0.0000870	0.00100	mg/l	1	4040637	04/16/04	04/21/04	EPA 200.8	
MW-47 (A) (P4D0481-02) Water Sampled: 04/12/04 14:40 Received: 04/14/04 15:55										
Lead	0.00881	0.0000870	0.00100	mg/l	1	4040637	04/16/04	04/21/04	EPA 200.8	
MW-46 (A) (P4D0481-03) Water Sampled: 04/12/04 15:55 Received: 04/14/04 15:55										
Lead	0.00495	0.0000870	0.00100	mg/l	1	4040637	04/16/04	04/21/04	EPA 200.8	
MW-7 (M) (P4D0481-04) Water Sampled: 04/12/04 17:25 Received: 04/14/04 15:55										
Lead	0.0203	0.0000870	0.00100	mg/l	1	4040637	04/16/04	04/23/04	EPA 200.8	
MW-33 (A) (P4D0481-05) Water Sampled: 04/13/04 07:15 Received: 04/14/04 15:55										
Lead	0.0118	0.0000870	0.00100	mg/l	1	4040637	04/16/04	04/23/04	EPA 200.8	
MW-10 (M) (P4D0481-06) Water Sampled: 04/13/04 08:20 Received: 04/14/04 15:55										
Lead	0.00958	0.0000870	0.00100	mg/l	1	4040637	04/16/04	04/23/04	EPA 200.8	
MW-11 (M) (P4D0481-07) Water Sampled: 04/13/04 09:45 Received: 04/14/04 15:55										
Lead	0.00223	0.0000870	0.00100	mg/l	1	4040637	04/16/04	04/23/04	EPA 200.8	
MW-6 (M) (P4D0481-10) Water Sampled: 04/13/04 10:45 Received: 04/14/04 15:55										
Lead	0.00232	0.0000870	0.00100	mg/l	1	4040637	04/16/04	04/22/04	EPA 200.8	
MW-43 (A) (P4D0481-11) Water Sampled: 04/13/04 12:30 Received: 04/14/04 15:55										
Lead	0.000510	0.0000870	0.00100	mg/l	1	4040637	04/16/04	04/22/04	EPA 200.8	J

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: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 13:23

Total Metals per EPA 200 Series Methods
North Creek Analytical - Portland

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-32 (A) (P4D0481-12) Water Sampled: 04/13/04 13:40 Received: 04/14/04 15:55										
Lead	0.00302	0.0000870	0.00100	mg/l	1	4040637	04/16/04	04/23/04	EPA 200.8	
MW-31 (A) (P4D0481-13) Water Sampled: 04/13/04 14:25 Received: 04/14/04 15:55										
Lead	0.0111	0.0000870	0.00100	mg/l	1	4040637	04/16/04	04/23/04	EPA 200.8	
BM-31 (A) (P4D0481-14) Water Sampled: 04/13/04 14:25 Received: 04/14/04 15:55										
Lead	0.0153	0.0000870	0.00100	mg/l	1	4040637	04/16/04	04/23/04	EPA 200.8	
MW-35 (A) (P4D0481-15) Water Sampled: 04/13/04 15:50 Received: 04/14/04 15:55										
Lead	0.00511	0.0000870	0.00100	mg/l	1	4040637	04/16/04	04/23/04	EPA 200.8	
MW-30 (A) (P4D0481-16) Water Sampled: 04/13/04 17:10 Received: 04/14/04 15:55										
Lead	0.0173	0.0000870	0.00100	mg/l	1	4040637	04/16/04	04/23/04	EPA 200.8	
MW-34 (A) (P4D0481-17) Water Sampled: 04/14/04 07:20 Received: 04/14/04 15:55										
Lead	0.00750	0.0000870	0.00100	mg/l	1	4040637	04/16/04	04/23/04	EPA 200.8	
MW-45 (A) (P4D0481-19) Water Sampled: 04/14/04 08:20 Received: 04/14/04 15:55										
Lead	0.00149	0.0000870	0.00100	mg/l	1	4040637	04/16/04	04/23/04	EPA 200.8	
MW-39 (A) (P4D0481-20) Water Sampled: 04/14/04 09:20 Received: 04/14/04 15:55										
Lead	0.00112	0.0000870	0.00100	mg/l	1	4040637	04/16/04	04/23/04	EPA 200.8	
MW-38 (A) (P4D0481-21) Water Sampled: 04/14/04 10:45 Received: 04/14/04 15:55										
Lead	0.00828	0.0000870	0.00100	mg/l	1	4040637	04/16/04	04/23/04	EPA 200.8	

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 13:23

**Total Metals per EPA 200 Series Methods
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-36 (A) (P4D0481-22) Water										
Sampled: 04/14/04 12:30 Received: 04/14/04 15:55										
Lead	0.0268	0.0000870	0.00100	mg/l	1	4040637	04/16/04	04/23/04	EPA 200.8	
MW-27 (A) (P4D0481-23) Water										
Sampled: 04/14/04 13:00 Received: 04/14/04 15:55										
Lead	ND	0.0000870	0.00100	mg/l	1	4040637	04/16/04	04/23/04	EPA 200.8	U

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

**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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MW-48 (A) (P4D0481-01) Water Sampled: 04/12/04 13:45 Received: 04/14/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040632	04/16/04	04/16/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	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	76.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	108 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	100 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	86.5 %		80-120			"	"	"	"	

MW-47 (A) (P4D0481-02) Water Sampled: 04/12/04 14:40 Received: 04/14/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040632	04/16/04	04/16/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	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	81.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	110 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	106 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	89.5 %		80-120			"	"	"	"	

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

**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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MW-46 (A) (P4D0481-03) Water Sampled: 04/12/04 15:55 Received: 04/14/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040632	04/16/04	04/16/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	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	0.320	0.0884	1.00	"	"	"	"	"	"	J
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	79.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	108 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	106 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	84.0 %		80-120			"	"	"	"	

MW-7 (M) (P4D0481-04) Water Sampled: 04/12/04 17:25 Received: 04/14/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040632	04/16/04	04/16/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	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	82.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	111 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	110 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	90.0 %		80-120			"	"	"	"	

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-33 (A) (P4D0481-05) Water Sampled: 04/13/04 07:15 Received: 04/14/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040632	04/16/04	04/16/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	12.1	0.147	0.200	"	"	"	"	"	"	
Toluene	0.830	0.155	0.500	"	"	"	"	"	"	
Ethylbenzene	1.82	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	2.13	0.262	1.00	"	"	"	"	"	"	
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	4.07	0.107	2.00	"	"	"	"	"	"	
n-Propylbenzene	8.46	0.138	0.500	"	"	"	"	"	"	
Surrogate: 4-BFB	89.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	106 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	104 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	86.5 %		80-120			"	"	"	"	
MW-10 (M) (P4D0481-06) Water Sampled: 04/13/04 08:20 Received: 04/14/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040632	04/16/04	04/16/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	52.4	0.147	0.200	"	"	"	"	"	"	
Toluene	10.5	0.155	0.500	"	"	"	"	"	"	
Ethylbenzene	32.1	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	55.0	0.262	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	5.07	0.0989	2.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	3.71	0.0884	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	3.15	0.157	0.500	"	"	"	"	"	"	
Isopropylbenzene	23.1	0.107	2.00	"	"	"	"	"	"	
n-Propylbenzene	21.7	0.138	0.500	"	"	"	"	"	"	
Surrogate: 4-BFB	97.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	103 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	102 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	98.0 %		80-120			"	"	"	"	

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: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 13:23

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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MW-11 (M) (P4D0481-07) Water Sampled: 04/13/04 09:45 Received: 04/14/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040632	04/16/04	04/16/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	0.350	0.147	0.200	"	"	"	"	"	"	
Toluene	0.270	0.155	0.500	"	"	"	"	"	"	J
Ethylbenzene	0.530	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	0.510	0.0989	2.00	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	0.190	0.0884	1.00	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	0.430	0.107	2.00	"	"	"	"	"	"	J
n-Propylbenzene	3.19	0.138	0.500	"	"	"	"	"	"	
<i>Surrogate: 4-BFB</i>	<i>94.0 %</i>		<i>75-120</i>			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	<i>93.5 %</i>		<i>77-129</i>			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	<i>95.0 %</i>		<i>80-121</i>			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	<i>90.5 %</i>		<i>80-120</i>			"	"	"	"	

Trip Blank (P4D0481-08) Water Sampled: 04/13/04 09:45 Received: 04/14/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040632	04/16/04	04/16/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	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
<i>Surrogate: 4-BFB</i>	<i>78.5 %</i>		<i>75-120</i>			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	<i>105 %</i>		<i>77-129</i>			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>		<i>80-121</i>			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	<i>93.0 %</i>		<i>80-120</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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Trip Blank (P4D0481-09) Water Sampled: 04/12/04 15:55 Received: 04/14/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040632	04/16/04	04/16/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	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
<i>Surrogate: 4-BFB</i>	<i>329 %</i>		<i>75-120</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	<i>S-08</i>
<i>Surrogate: 1,2-DCA-d4</i>	<i>108 %</i>		<i>77-129</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>		<i>80-121</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>	<i>98.0 %</i>		<i>80-120</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
MW-6 (M) (P4D0481-10) Water Sampled: 04/13/04 10:45 Received: 04/14/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040632	04/16/04	04/16/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	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
<i>Surrogate: 4-BFB</i>	<i>89.0 %</i>		<i>75-120</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 1,2-DCA-d4</i>	<i>98.0 %</i>		<i>77-129</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>100 %</i>		<i>80-121</i>			<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>	<i>89.5 %</i>		<i>80-120</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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

**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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MW-43 (A) (P4D0481-11) Water Sampled: 04/13/04 12:30 Received: 04/14/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040632	04/16/04	04/16/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	0.480	0.110	0.500	"	"	"	"	"	"	J
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	3.76	0.138	0.500	"	"	"	"	"	"	U
<i>Surrogate: 4-BFB</i>	81.0 %		75-120			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	106 %		77-129			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	106 %		80-121			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	87.5 %		80-120			"	"	"	"	

MW-32 (A) (P4D0481-12) Water Sampled: 04/13/04 13:40 Received: 04/14/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040632	04/16/04	04/16/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	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
<i>Surrogate: 4-BFB</i>	79.5 %		75-120			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	99.0 %		77-129			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	102 %		80-121			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	85.0 %		80-120			"	"	"	"	

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-31 (A) (P4D0481-13RE1) Water Sampled: 04/13/04 14:25 Received: 04/14/04 15:55										
1,2-Dibromoethane	ND	0.935	2.50	ug/l	5	4040706	04/19/04	04/19/04	EPA 8260B	D, U
1,2-Dichloroethane	ND	0.710	2.50	"	"	"	"	"	"	D, U
Benzene	574	0.735	1.00	"	"	"	"	"	"	D
Toluene	35.9	0.775	2.50	"	"	"	"	"	"	D
Ethylbenzene	533	0.550	2.50	"	"	"	"	"	"	D
Xylenes (total)	127	1.31	5.00	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	0.432	10.0	"	"	"	"	"	"	D, U
Naphthalene	145	0.494	10.0	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	0.850	0.442	5.00	"	"	"	"	"	"	J, D
1,3,5-Trimethylbenzene	2.65	0.785	2.50	"	"	"	"	"	"	D
Isopropylbenzene	35.2	0.535	10.0	"	"	"	"	"	"	D
n-Propylbenzene	80.2	0.690	2.50	"	"	"	"	"	"	D
<i>Surrogate: 4-BFB</i>	<i>97.0 %</i>		<i>75-120</i>							
<i>Surrogate: 1,2-DCA-d4</i>	<i>101 %</i>		<i>77-129</i>							
<i>Surrogate: Dibromofluoromethane</i>	<i>101 %</i>		<i>80-121</i>							
<i>Surrogate: Toluene-d8</i>	<i>96.0 %</i>		<i>80-120</i>							
BM-31 (A) (P4D0481-14) Water Sampled: 04/13/04 14:25 Received: 04/14/04 15:55										
1,2-Dibromoethane	ND	0.935	2.50	ug/l	5	4040632	04/16/04	04/16/04	EPA 8260B	D, U
1,2-Dichloroethane	ND	0.710	2.50	"	"	"	"	"	"	D, U
Benzene	538	0.735	1.00	"	"	"	"	"	"	D
Toluene	29.2	0.775	2.50	"	"	"	"	"	"	D
Ethylbenzene	432	0.550	2.50	"	"	"	"	"	"	D
Xylenes (total)	121	1.31	5.00	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	0.432	10.0	"	"	"	"	"	"	D, U
Naphthalene	116	0.494	10.0	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	0.900	0.442	5.00	"	"	"	"	"	"	J, D
1,3,5-Trimethylbenzene	2.70	0.785	2.50	"	"	"	"	"	"	D
Isopropylbenzene	33.0	0.535	10.0	"	"	"	"	"	"	D
n-Propylbenzene	73.0	0.690	2.50	"	"	"	"	"	"	D
<i>Surrogate: 4-BFB</i>	<i>90.0 %</i>		<i>75-120</i>							
<i>Surrogate: 1,2-DCA-d4</i>	<i>89.0 %</i>		<i>77-129</i>							
<i>Surrogate: Dibromofluoromethane</i>	<i>91.5 %</i>		<i>80-121</i>							
<i>Surrogate: Toluene-d8</i>	<i>88.0 %</i>		<i>80-120</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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

**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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MW-35 (A) (P4D0481-15RE1) Water Sampled: 04/13/04 15:50 Received: 04/14/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040708	04/19/04	04/19/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	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	107 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	128 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	124 %		80-121			"	"	"	"	S-08
Surrogate: Toluene-d8	96.0 %		80-120			"	"	"	"	

MW-30 (A) (P4D0481-16) Water Sampled: 04/13/04 17:10 Received: 04/14/04 15:55

1,2-Dibromoethane	ND	1.87	5.00	ug/l	10	4040632	04/16/04	04/16/04	EPA 8260B	D, U
1,2-Dichloroethane	ND	1.42	5.00	"	"	"	"	"	"	D, U
Benzene	533	1.47	2.00	"	"	"	"	"	"	D
Toluene	243	1.55	5.00	"	"	"	"	"	"	D
Ethylbenzene	1850	1.10	5.00	"	"	"	"	"	"	D
Xylenes (total)	2140	2.62	10.0	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	0.865	20.0	"	"	"	"	"	"	D, U
Naphthalene	1030	0.989	20.0	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	75.7	0.884	10.0	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	85.5	1.57	5.00	"	"	"	"	"	"	D
Isopropylbenzene	70.2	1.07	20.0	"	"	"	"	"	"	D
n-Propylbenzene	170	1.38	5.00	"	"	"	"	"	"	D
Surrogate: 4-BFB	101 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	87.0 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	89.0 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	97.0 %		80-120			"	"	"	"	

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

**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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MW-34 (A) (P4D0481-17RE2) Water Sampled: 04/14/04 07:20 Received: 04/14/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040833	04/21/04	04/21/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	0.210	0.110	0.500	"	"	"	"	"	"	J
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
<i>Surrogate: 4-BFB</i>	84.5 %		75-120			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	90.5 %		77-129			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	92.5 %		80-121			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	85.5 %		80-120			"	"	"	"	

Trip Blank (P4D0481-18) Water Sampled: 04/14/04 07:20 Received: 04/14/04 15:55

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040632	04/16/04	04/16/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	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
<i>Surrogate: 4-BFB</i>	82.0 %		75-120			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	104 %		77-129			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	101 %		80-121			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	89.0 %		80-120			"	"	"	"	

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-45 (A) (P4D0481-19) Water Sampled: 04/14/04 08:20 Received: 04/14/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040706	04/19/04	04/19/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	0.110	0.110	0.500	"	"	"	"	"	"	J
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
<i>Surrogate: 4-BFB</i>	78.0 %		75-120			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	112 %		77-129			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	108 %		80-121			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	81.5 %		80-120			"	"	"	"	
MW-39 (A) (P4D0481-20) Water Sampled: 04/14/04 09:20 Received: 04/14/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040706	04/19/04	04/19/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	3.40	0.147	0.200	"	"	"	"	"	"	
Toluene	0.600	0.155	0.500	"	"	"	"	"	"	
Ethylbenzene	9.92	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	11.7	0.262	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	18.7	0.0989	2.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	6.04	0.0884	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	1.12	0.157	0.500	"	"	"	"	"	"	
Isopropylbenzene	3.36	0.107	2.00	"	"	"	"	"	"	
n-Propylbenzene	6.58	0.138	0.500	"	"	"	"	"	"	
<i>Surrogate: 4-BFB</i>	86.5 %		75-120			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	109 %		77-129			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	102 %		80-121			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	86.5 %		80-120			"	"	"	"	

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-38 (A) (P4D0481-21) Water Sampled: 04/14/04 10:45 Received: 04/14/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040706	04/19/04	04/19/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	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	0.500	0.0989	2.00	"	"	"	"	"	"	J
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
<i>Surrogate: 4-BFB</i>	88.5 %		75-120			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	112 %		77-129			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	105 %		80-121			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	88.0 %		80-120			"	"	"	"	
MW-36 (A) (P4D0481-22) Water Sampled: 04/14/04 12:30 Received: 04/14/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040706	04/19/04	04/19/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	0.160	0.155	0.500	"	"	"	"	"	"	J
Ethylbenzene	0.920	0.110	0.500	"	"	"	"	"	"	J
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	0.840	0.0989	2.00	"	"	"	"	"	"	J
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
<i>Surrogate: 4-BFB</i>	86.5 %		75-120			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	108 %		77-129			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	106 %		80-121			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	86.0 %		80-120			"	"	"	"	

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: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 13:23

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-27 (A) (P4D0481-23) Water Sampled: 04/14/04 13:00 Received: 04/14/04 15:55										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040706	04/19/04	04/19/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	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	83.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	114 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	112 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	86.0 %		80-120			"	"	"	"	

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-48 (A) (P4D0481-01) Water Sampled: 04/12/04 13:45 Received: 04/14/04 15:55										
Acenaphthene	0.117	0.0500	0.0500	ug/l	1	4040712	04/19/04	04/26/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	0.0109	0.0100	0.0100	"	"	"	"	"	"	
Benzo (a) pyrene	0.0104	0.0100	0.0100	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0105	0.0100	0.0100	"	"	"	"	"	"	
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	0.0122	0.0100	0.0100	"	"	"	"	"	"	
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	0.0507	0.0500	0.0500	"	"	"	"	"	"	
Fluorene	0.0569	0.0500	0.0500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.244	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	0.101	0.0500	0.0500	"	"	"	"	"	"	
Pyrene	0.0729	0.0500	0.0500	"	"	"	"	"	"	
Surrogate: Fluorene-d10	82.2 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	111 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	58.5 %		10-150			"	"	"	"	

MW-47 (A) (P4D0481-02) Water Sampled: 04/12/04 14:40 Received: 04/14/04 15:55										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4040712	04/19/04	04/26/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-47 (A) (P4D0481-02) Water Sampled: 04/12/04 14:40 Received: 04/14/04 15:55										
Surrogate: Fluorene-d10	64.8 %		25-150			4040712	04/19/04	04/26/04	EPA 8270m	
Surrogate: Pyrene-d10	65.3 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	34.6 %		10-150			"	"	"	"	
MW-46 (A) (P4D0481-03) Water Sampled: 04/12/04 15:55 Received: 04/14/04 15:55										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4040712	04/19/04	04/26/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.0526	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	66.1 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	77.5 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	63.1 %		10-150			"	"	"	"	

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 RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

**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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MW-7 (M) (P4D0481-04) Water Sampled: 04/12/04 17:25 Received: 04/14/04 15:55

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4040712	04/19/04	04/26/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

Surrogate: Fluorene-d10	65.7 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	79.2 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	57.6 %		10-150			"	"	"	"	

MW-33 (A) (P4D0481-05) Water Sampled: 04/13/04 07:15 Received: 04/14/04 15:55

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4040712	04/19/04	04/26/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.650	0.650	"	"	"	"	"	"	R-03, U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

**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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MW-33 (A) (P4D0481-05) Water Sampled: 04/13/04 07:15 Received: 04/14/04 15:55

Surrogate: Fluorene-d10	62.3 %		25-150			4040712	04/19/04	04/26/04	EPA 8270m	
Surrogate: Pyrene-d10	75.8 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	34.3 %		10-150			"	"	"	"	

MW-10 (M) (P4D0481-06) Water Sampled: 04/13/04 08:20 Received: 04/14/04 15:55

R-05

Acenaphthene	0.375	0.100	0.100	ug/l	2	4040712	04/19/04	04/28/04	EPA 8270m	D
Acenaphthylene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Anthracene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Benzo (a) anthracene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Benzo (a) pyrene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Benzo (b) fluoranthene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Benzo (ghi) perylene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Benzo (k) fluoranthene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Chrysene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Dibenzo (a,h) anthracene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Fluoranthene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Fluorene	0.187	0.100	0.100	"	"	"	"	"	"	D
Indeno (1,2,3-cd) pyrene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Naphthalene	ND	5.00	5.00	"	40	"	"	04/27/04	"	R-03, D, U
Phenanthrene	ND	0.100	0.100	"	2	"	"	04/28/04	"	D, U
Pyrene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Surrogate: Fluorene-d10	53.0 %		25-150			"	"	"	"	D
Surrogate: Pyrene-d10	75.8 %		23-150			"	"	"	"	D
Surrogate: Benzo (a) pyrene-d12	52.5 %		10-150			"	"	"	"	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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-11 (M) (P4D0481-07) Water Sampled: 04/13/04 09:45 Received: 04/14/04 15:55										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4040712	04/19/04	04/27/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.250	0.250	"	"	"	"	"	"	R-03, U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	69.5 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	80.9 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	62.3 %		10-150			"	"	"	"	

MW-6 (M) (P4D0481-10) Water Sampled: 04/13/04 10:45 Received: 04/14/04 15:55										
Acenaphthene	0.153	0.0500	0.0500	ug/l	1	4040712	04/19/04	04/27/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

North Creek Analytical - Portland

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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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

**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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MW-6 (M) (P4D0481-10) Water Sampled: 04/13/04 10:45 Received: 04/14/04 15:55

Surrogate: Fluorene-d10	76.3 %		25-150			4040712	04/19/04	04/27/04	EPA 8270m	
Surrogate: Pyrene-d10	86.4 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	65.7 %		10-150			"	"	"	"	

MW-43 (A) (P4D0481-11) Water Sampled: 04/13/04 12:30 Received: 04/14/04 15:55

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4040712	04/19/04	04/26/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	69.9 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	80.5 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	46.6 %		10-150			"	"	"	"	

North Creek Analytical - Portland

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EnviroLogic Resources, Inc.
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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-32 (A) (P4D0481-12) Water Sampled: 04/13/04 13:40 Received: 04/14/04 15:55										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4040712	04/19/04	04/27/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.0750	0.0750	"	"	"	"	"	"	R-03, U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	61.4 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	87.3 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	78.0 %		10-150			"	"	"	"	

MW-31 (A) (P4D0481-13) Water Sampled: 04/13/04 14:25 Received: 04/14/04 15:55											R-05
Acenaphthene	ND	0.100	0.100	ug/l	2	4040712	04/19/04	04/28/04	EPA 8270m		D, U
Acenaphthylene	ND	0.100	0.100	"	"	"	"	"	"		D, U
Anthracene	ND	0.100	0.100	"	"	"	"	"	"		D, U
Benzo (a) anthracene	ND	0.0200	0.0200	"	"	"	"	"	"		D, U
Benzo (a) pyrene	ND	0.0200	0.0200	"	"	"	"	"	"		D, U
Benzo (b) fluoranthene	ND	0.0200	0.0200	"	"	"	"	"	"		D, U
Benzo (ghi) perylene	ND	0.100	0.100	"	"	"	"	"	"		D, U
Benzo (k) fluoranthene	ND	0.0200	0.0200	"	"	"	"	"	"		D, U
Chrysene	ND	0.0200	0.0200	"	"	"	"	"	"		D, U
Dibenzo (a,h) anthracene	ND	0.0200	0.0200	"	"	"	"	"	"		D, U
Fluoranthene	ND	0.100	0.100	"	"	"	"	"	"		D, U
Fluorene	ND	0.100	0.100	"	"	"	"	"	"		D, U
Indeno (1,2,3-cd) pyrene	ND	0.0200	0.0200	"	"	"	"	"	"		D, U
Naphthalene	64.1	5.00	5.00	"	100	"	"	04/28/04	"		D
Phenanthrene	ND	0.100	0.100	"	2	"	"	04/28/04	"		D, U
Pyrene	ND	0.100	0.100	"	"	"	"	"	"		D, U

North Creek Analytical - Portland

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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

**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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MW-31 (A) (P4D0481-13) Water Sampled: 04/13/04 14:25 Received: 04/14/04 15:55 R-05

Surrogate: Fluorene-d10	58.5 %		25-150			4040712	04/19/04	04/28/04	EPA 8270m	D
Surrogate: Pyrene-d10	66.5 %		23-150			"	"	"	"	D
Surrogate: Benzo (a) pyrene-d12	46.6 %		10-150			"	"	"	"	D

BM-31 (A) (P4D0481-14) Water Sampled: 04/13/04 14:25 Received: 04/14/04 15:55

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4040712	04/19/04	04/27/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	67.6	10.0	10.0	"	200	"	"	04/28/04	"	D
Phenanthrene	ND	0.0500	0.0500	"	1	"	"	04/27/04	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	61.4 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	84.3 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	57.6 %		10-150			"	"	"	"	

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-35 (A) (P4D0481-15) Water Sampled: 04/13/04 15:50 Received: 04/14/04 15:55										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4040712	04/19/04	04/27/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	42.1 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	55.9 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	47.0 %		10-150			"	"	"	"	

MW-30 (A) (P4D0481-16) Water Sampled: 04/13/04 17:10 Received: 04/14/04 15:55										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4040712	04/19/04	04/27/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	381	5.00	5.00	"	100	"	"	04/28/04	"	D
Phenanthrene	ND	0.0500	0.0500	"	1	"	"	04/27/04	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

North Creek Analytical - Portland

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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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

**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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MW-30 (A) (P4D0481-16) Water Sampled: 04/13/04 17:10 Received: 04/14/04 15:55

Surrogate: Fluorene-d10	32.3 %		25-150			4040712	04/19/04	04/27/04	EPA 8270m	
Surrogate: Pyrene-d10	64.4 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	48.3 %		10-150			"	"	"	"	

MW-34 (A) (P4D0481-17) Water Sampled: 04/14/04 07:20 Received: 04/14/04 15:55

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4040712	04/19/04	04/28/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.162	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	59.3 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	64.0 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	46.2 %		10-150			"	"	"	"	

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 RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-45 (A) (P4D0481-19) Water Sampled: 04/14/04 08:20 Received: 04/14/04 15:55										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4040712	04/19/04	04/27/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.0798	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	55.9 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	83.5 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	66.9 %		10-150			"	"	"	"	

MW-39 (A) (P4D0481-20) Water Sampled: 04/14/04 09:20 Received: 04/14/04 15:55										
Acenaphthene	0.462	0.0500	0.0500	ug/l	1	4040712	04/19/04	04/27/04	EPA 8270m	
Acenaphthylene	ND	0.100	0.100	"	"	"	"	"	"	R-03, U
Anthracene	0.0707	0.0500	0.0500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	0.633	0.0500	0.0500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	4.14	0.500	0.500	"	10	"	"	04/28/04	"	D
Phenanthrene	0.357	0.0500	0.0500	"	1	"	"	04/27/04	"	
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	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 RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 13:23

**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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MW-39 (A) (P4D0481-20) Water Sampled: 04/14/04 09:20 Received: 04/14/04 15:55

Surrogate: Fluorene-d10	25.5 %		25-150			4040712	04/19/04	04/27/04	EPA 8270m	
Surrogate: Pyrene-d10	66.9 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	52.5 %		10-150			"	"	"	"	

MW-38 (A) (P4D0481-21) Water Sampled: 04/14/04 10:45 Received: 04/14/04 15:55

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4040712	04/19/04	04/27/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	67.4 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	83.9 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	62.7 %		10-150			"	"	"	"	

North Creek Analytical - Portland

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Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-36 (A) (P4D0481-22) Water Sampled: 04/14/04 12:30 Received: 04/14/04 15:55										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4040712	04/19/04	04/27/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.214	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	75.0 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	68.2 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	38.3 %		10-150			"	"	"	"	

MW-27 (A) (P4D0481-23) Water Sampled: 04/14/04 13:00 Received: 04/14/04 15:55										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4040712	04/19/04	04/27/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.0763	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

North Creek Analytical - Portland

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Joy D. Chang, Project 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 RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 13:23

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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MW-27 (A) (P4D0481-23) Water **Sampled: 04/14/04 13:00** **Received: 04/14/04 15:55**

Surrogate: Fluorene-d10	76.3 %		25-150			4040712	04/19/04	04/27/04	EPA 8270m	
Surrogate: Pyrene-d10	82.2 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	60.2 %		10-150			"	"	"	"	

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

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 13:23

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 4040615: Prepared 04/16/04 Using EPA 5030B											
Blank (4040615-BLK1)											
Gasoline Range Hydrocarbons	11.4	6.02	80.0	ug/l							J
Surrogate: 4-BFB	34.4			"	50.0		68.8	50-150			
LCS (4040615-BS1)											
Gasoline Range Hydrocarbons	889	6.02	80.0	ug/l	1000		88.9	70-130			
Surrogate: 4-BFB	38.0			"	50.0		76.0	50-150			
LCS Dup (4040615-BSD1)											
Gasoline Range Hydrocarbons	835	6.02	80.0	ug/l	1000		83.5	70-130	6.26	40	
Surrogate: 4-BFB	36.3			"	50.0		72.6	50-150			
Duplicate (4040615-DUP1) Source: P4D0481-01											
Gasoline Range Hydrocarbons	6.14	6.02	80.0	ug/l		7.81			23.9	40	J
Surrogate: 4-BFB	28.9			"	50.0		57.8	50-150			
Duplicate (4040615-DUP2) Source: P4D0481-17											
Gasoline Range Hydrocarbons	13.9	6.02	80.0	ug/l		37.2			91.2	40	Q-06, J
Surrogate: 4-BFB	36.4			"	50.0		72.8	50-150			
Matrix Spike (4040615-MS1) Source: P4D0481-11											
Gasoline Range Hydrocarbons	857	6.02	80.0	ug/l	1000	18.5	83.8	70-130			
Surrogate: 4-BFB	39.5			"	50.0		79.0	50-150			
Matrix Spike Dup (4040615-MSD1) Source: P4D0481-11											
Gasoline Range Hydrocarbons	824	6.02	80.0	ug/l	1000	18.5	80.6	70-130	3.93	30	
Surrogate: 4-BFB	38.4			"	50.0		76.8	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: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 13:23

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 4040740: Prepared 04/19/04 Using EPA 5030B

Blank (4040740-BLK1)

Gasoline Range Hydrocarbons	ND	6.02	80.0	ug/l							U
Surrogate: 4-BFB	43.4			"	50.0		86.8	50-150			

LCS (4040740-BS2)

Gasoline Range Hydrocarbons	1040	6.02	80.0	ug/l	1000		104	70-130			
Surrogate: 4-BFB	88.2			"	100		88.2	50-150			

LCS Dup (4040740-BSD2)

Gasoline Range Hydrocarbons	1080	6.02	80.0	ug/l	1000		108	70-130	3.77	40	
Surrogate: 4-BFB	49.2			"	50.0		98.4	50-150			

North Creek Analytical - Portland

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Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

**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 4040570: Prepared 04/15/04 Using EPA 3510 Fuels

Blank (4040570-BLK1)

Diesel Range Organics	ND	0.153	0.250	mg/l							U
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"							U
Surrogate: 1-Chlorooctadecane	0.0802			"	0.0960		83.5	50-150			

LCS (4040570-BS1)

Diesel Range Organics	1.81	0.153	0.250	mg/l	2.50		72.4	50-150			
Heavy Oil Range Hydrocarbons	1.23	0.286	0.500	"	1.50		82.0	50-150			
Surrogate: 1-Chlorooctadecane	0.0936			"	0.0960		97.5	50-150			

LCS Dup (4040570-BSD1)

Diesel Range Organics	2.00	0.153	0.250	mg/l	2.50		80.0	50-150	9.97	50	
Heavy Oil Range Hydrocarbons	1.32	0.286	0.500	"	1.50		88.0	50-150	7.06	50	
Surrogate: 1-Chlorooctadecane	0.0953			"	0.0960		99.3	50-150			

Matrix Spike (4040570-MS1)

Source: P4D0481-11

Diesel Range Organics	3.07	0.153	0.250	mg/l	2.36	1.05	85.6	50-150			
Heavy Oil Range Hydrocarbons	1.76	0.286	0.500	"	1.42	ND	124	50-150			
Surrogate: 1-Chlorooctadecane	0.0785			"	0.0906		86.6	50-150			

Matrix Spike Dup (4040570-MSD1)

Source: P4D0481-11

Diesel Range Organics	3.37	0.153	0.250	mg/l	2.36	1.05	98.3	50-150	9.32	50	
Heavy Oil Range Hydrocarbons	1.91	0.286	0.500	"	1.42	ND	135	50-150	8.17	50	
Surrogate: 1-Chlorooctadecane	0.0971			"	0.0906		107	50-150			

Batch 4040571: Prepared 04/15/04 Using EPA 3510 Fuels

Blank (4040571-BLK1)

Diesel Range Organics	ND	0.153	0.250	mg/l							U
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"							U
Surrogate: 1-Chlorooctadecane	0.0896			"	0.0960		93.3	50-150			

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 13:23

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 4040571: Prepared 04/15/04 Using EPA 3510 Fuels

LCS (4040571-BS1)

Diesel Range Organics	2.05	0.153	0.250	mg/l	2.50		82.0	50-150			
Heavy Oil Range Hydrocarbons	1.39	0.286	0.500	"	1.50		92.7	50-150			
<i>Surrogate: 1-Chlorooctadecane</i>	<i>0.102</i>			"	<i>0.0960</i>		<i>106</i>	<i>50-150</i>			

LCS Dup (4040571-BSD1)

Diesel Range Organics	1.99	0.153	0.250	mg/l	2.50		79.6	50-150	2.97	50	
Heavy Oil Range Hydrocarbons	1.42	0.286	0.500	"	1.50		94.7	50-150	2.14	50	
<i>Surrogate: 1-Chlorooctadecane</i>	<i>0.0919</i>			"	<i>0.0960</i>		<i>95.7</i>	<i>50-150</i>			

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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 13:23

Total Metals per EPA 200 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 4040637: Prepared 04/16/04 Using EPA 200/3005											
Blank (4040637-BLK1)											
Lead	ND	0.0000870	0.00100	mg/l							U
LCS (4040637-BS1)											
Lead	0.0943	0.0000870	0.00100	mg/l	0.100		94.3	85-115			
LCS Dup (4040637-BSD1)											
Lead	0.0972	0.0000870	0.00100	mg/l	0.100		97.2	85-115	3.03	20	
Duplicate (4040637-DUP1) Source: P4D0481-11											
Lead	0.000620	0.0000870	0.00100	mg/l		0.000510			19.5	20	J
Matrix Spike (4040637-MS1) Source: P4D0481-11											
Lead	0.0911	0.0000870	0.00100	mg/l	0.100	0.000510	90.6	70-130			
Matrix Spike Dup (4040637-MSD1) Source: P4D0481-11											
Lead	0.0940	0.0000870	0.00100	mg/l	0.100	0.000510	93.5	70-130	3.13	20	

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

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 13:23

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 4040632: Prepared 04/16/04 Using EPA 5030B

Blank (4040632-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	0.200	"							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
<i>Surrogate: 4-BFB</i>	<i>17.0</i>			"	<i>20.0</i>		<i>85.0</i>	<i>75-120</i>			
<i>Surrogate: 1,2-DCA-d4</i>	<i>20.4</i>			"	<i>20.0</i>		<i>102</i>	<i>77-129</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>20.8</i>			"	<i>20.0</i>		<i>104</i>	<i>80-121</i>			
<i>Surrogate: Toluene-d8</i>	<i>18.4</i>			"	<i>20.0</i>		<i>92.0</i>	<i>80-120</i>			

LCS (4040632-BS1)

Benzene	20.6	0.147	0.200	ug/l	20.0		103	80-120			
Toluene	20.5	0.155	0.500	"	20.0		102	80-124			
Ethylbenzene	21.7	0.110	0.500	"	20.0		108	80-120			
Xylenes (total)	65.9	0.262	1.00	"	60.0		110	73-124			
Methyl tert-butyl ether	22.2	0.0865	2.00	"	20.0		111	80-129			
Naphthalene	24.8	0.0989	2.00	"	20.0		124	72-149			
<i>Surrogate: 4-BFB</i>	<i>20.1</i>			"	<i>20.0</i>		<i>100</i>	<i>75-120</i>			
<i>Surrogate: 1,2-DCA-d4</i>	<i>19.3</i>			"	<i>20.0</i>		<i>96.5</i>	<i>77-129</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>19.4</i>			"	<i>20.0</i>		<i>97.0</i>	<i>80-121</i>			
<i>Surrogate: Toluene-d8</i>	<i>19.0</i>			"	<i>20.0</i>		<i>95.0</i>	<i>80-120</i>			

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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

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 4040632: Prepared 04/16/04 Using EPA 5030B

Matrix Spike (4040632-MS1)

Source: P4D0481-11

Benzene	19.3	0.147	0.200	ug/l	20.0	ND	96.5	80-124			
Toluene	17.5	0.155	0.500	"	20.0	ND	87.5	79.7-131			
Ethylbenzene	17.7	0.110	0.500	"	20.0	0.480	86.1	80-124			
Xylenes (total)	48.8	0.262	1.00	"	60.0	ND	81.3	44.6-154			
Methyl tert-butyl ether	19.7	0.0865	2.00	"	20.0	ND	98.5	80-130			
Naphthalene	24.2	0.0989	2.00	"	20.0	ND	121	69-163			
Surrogate: 4-BFB	19.0			"	20.0		95.0	75-120			
Surrogate: 1,2-DCA-d4	18.8			"	20.0		94.0	77-129			
Surrogate: Dibromofluoromethane	19.4			"	20.0		97.0	80-121			
Surrogate: Toluene-d8	18.2			"	20.0		91.0	80-120			

Matrix Spike Dup (4040632-MSD1)

Source: P4D0481-11

Benzene	20.7	0.147	0.200	ug/l	20.0	ND	104	80-124	7.00	25	
Toluene	18.7	0.155	0.500	"	20.0	ND	93.5	79.7-131	6.63	25	
Ethylbenzene	18.5	0.110	0.500	"	20.0	0.480	90.1	80-124	4.42	25	
Xylenes (total)	50.6	0.262	1.00	"	60.0	ND	84.3	44.6-154	3.62	25	
Methyl tert-butyl ether	21.2	0.0865	2.00	"	20.0	ND	106	80-130	7.33	25	
Naphthalene	23.1	0.0989	2.00	"	20.0	ND	116	69-163	4.65	25	
Surrogate: 4-BFB	19.6			"	20.0		98.0	75-120			
Surrogate: 1,2-DCA-d4	19.8			"	20.0		99.0	77-129			
Surrogate: Dibromofluoromethane	20.4			"	20.0		102	80-121			
Surrogate: Toluene-d8	19.8			"	20.0		99.0	80-120			

Batch 4040706: Prepared 04/19/04 Using EPA 5030B

Blank (4040706-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	0.200	"							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

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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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

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 4040706: Prepared 04/19/04 Using EPA 5030B

Blank (4040706-BLK1)

Naphthalene	ND	0.0989	2.00	ug/l							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
<i>Surrogate: 4-BFB</i>	16.2			"	20.0		81.0	75-120			
<i>Surrogate: 1,2-DCA-d4</i>	21.8			"	20.0		109	77-129			
<i>Surrogate: Dibromofluoromethane</i>	21.6			"	20.0		108	80-121			
<i>Surrogate: Toluene-d8</i>	18.4			"	20.0		92.0	80-120			

LCS (4040706-BS1)

Benzene	21.5	0.147	0.200	ug/l	20.0		108	80-120			
Toluene	21.6	0.155	0.500	"	20.0		108	80-124			
Ethylbenzene	21.5	0.110	0.500	"	20.0		108	80-120			
Xylenes (total)	64.8	0.262	1.00	"	60.0		108	73-124			
Methyl tert-butyl ether	23.6	0.0865	2.00	"	20.0		118	80-129			
Naphthalene	25.5	0.0989	2.00	"	20.0		128	72-149			
<i>Surrogate: 4-BFB</i>	20.1			"	20.0		100	75-120			
<i>Surrogate: 1,2-DCA-d4</i>	21.9			"	20.0		110	77-129			
<i>Surrogate: Dibromofluoromethane</i>	21.3			"	20.0		106	80-121			
<i>Surrogate: Toluene-d8</i>	20.6			"	20.0		103	80-120			

Matrix Spike (4040706-MS1)

Source: P4D0538-01

Benzene	19.2	0.147	0.200	ug/l	20.0	ND	96.0	80-124			
Toluene	19.2	0.155	0.500	"	20.0	0.280	94.6	79.7-131			
Ethylbenzene	19.2	0.110	0.500	"	20.0	ND	96.0	80-124			
Xylenes (total)	57.8	0.262	1.00	"	60.0	ND	96.3	44.6-154			
Methyl tert-butyl ether	19.8	0.0865	2.00	"	20.0	ND	99.0	80-130			
Naphthalene	22.7	0.0989	2.00	"	20.0	ND	114	69-163			
<i>Surrogate: 4-BFB</i>	18.4			"	20.0		92.0	75-120			
<i>Surrogate: 1,2-DCA-d4</i>	20.4			"	20.0		102	77-129			
<i>Surrogate: Dibromofluoromethane</i>	19.9			"	20.0		99.5	80-121			

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

**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 4040706: Prepared 04/19/04 Using EPA 5030B

Matrix Spike (4040706-MS1)

Source: P4D0538-01

Surrogate: Toluene-d8 19.4 ug/l 20.0 97.0 80-120

Matrix Spike Dup (4040706-MSD1)

Source: P4D0538-01

Benzene	19.9	0.147	0.200	ug/l	20.0	ND	99.5	80-124	3.58	25	
Toluene	20.4	0.155	0.500	"	20.0	0.280	101	79.7-131	6.06	25	
Ethylbenzene	20.2	0.110	0.500	"	20.0	ND	101	80-124	5.08	25	
Xylenes (total)	61.2	0.262	1.00	"	60.0	ND	102	44.6-154	5.71	25	
Methyl tert-butyl ether	20.8	0.0865	2.00	"	20.0	ND	104	80-130	4.93	25	
Naphthalene	24.5	0.0989	2.00	"	20.0	ND	122	69-163	7.63	25	
Surrogate: 4-BFB	18.9			"	20.0		94.5	75-120			
Surrogate: 1,2-DCA-d4	19.9			"	20.0		99.5	77-129			
Surrogate: Dibromofluoromethane	19.8			"	20.0		99.0	80-121			
Surrogate: Toluene-d8	19.6			"	20.0		98.0	80-120			

Batch 4040708: Prepared 04/19/04 Using EPA 5030B

Blank (4040708-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	0.200	"							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	0.190	0.0989	2.00	"							J
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	21.4			"	20.0		107	75-120			
Surrogate: 1,2-DCA-d4	24.5			"	20.0		122	77-129			
Surrogate: Dibromofluoromethane	24.2			"	20.0		121	80-121			
Surrogate: Toluene-d8	21.5			"	20.0		108	80-120			

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

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 4040708: Prepared 04/19/04 Using EPA 5030B

LCS (4040708-BS1)

Benzene	21.8	0.147	0.200	ug/l	20.0		109	80-120			
Toluene	22.8	0.155	0.500	"	20.0		114	80-124			
Ethylbenzene	20.4	0.110	0.500	"	20.0		102	80-120			
Xylenes (total)	58.5	0.262	1.00	"	60.0		97.5	73-124			
Methyl tert-butyl ether	24.6	0.0865	2.00	"	20.0		123	80-129			
Naphthalene	23.9	0.0989	2.00	"	20.0		120	72-149			
Surrogate: 4-BFB	19.4			"	20.0		97.0	75-120			
Surrogate: 1,2-DCA-d4	23.4			"	20.0		117	77-129			
Surrogate: Dibromofluoromethane	23.2			"	20.0		116	80-121			
Surrogate: Toluene-d8	22.2			"	20.0		111	80-120			

Matrix Spike (4040708-MS1)

Source: P4D0541-04

Benzene	19.7	0.147	0.200	ug/l	20.0	ND	98.5	80-124			
Toluene	20.1	0.155	0.500	"	20.0	ND	100	79.7-131			
Ethylbenzene	19.0	0.110	0.500	"	20.0	ND	95.0	80-124			
Xylenes (total)	53.1	0.262	1.00	"	60.0	ND	88.5	44.6-154			
Methyl tert-butyl ether	21.7	0.0865	2.00	"	20.0	ND	108	80-130			
Naphthalene	22.6	0.0989	2.00	"	20.0	ND	113	69-163			
Surrogate: 4-BFB	19.4			"	20.0		97.0	75-120			
Surrogate: 1,2-DCA-d4	22.7			"	20.0		114	77-129			
Surrogate: Dibromofluoromethane	22.7			"	20.0		114	80-121			
Surrogate: Toluene-d8	21.1			"	20.0		106	80-120			

Matrix Spike Dup (4040708-MSD1)

Source: P4D0541-04

Benzene	20.2	0.147	0.200	ug/l	20.0	ND	101	80-124	2.51	25	
Toluene	20.4	0.155	0.500	"	20.0	ND	102	79.7-131	1.48	25	
Ethylbenzene	20.1	0.110	0.500	"	20.0	ND	100	80-124	5.63	25	
Xylenes (total)	56.2	0.262	1.00	"	60.0	ND	93.7	44.6-154	5.67	25	
Methyl tert-butyl ether	22.4	0.0865	2.00	"	20.0	ND	112	80-130	3.17	25	
Naphthalene	22.6	0.0989	2.00	"	20.0	ND	113	69-163	0.00	25	
Surrogate: 4-BFB	20.7			"	20.0		104	75-120			
Surrogate: 1,2-DCA-d4	23.3			"	20.0		116	77-129			

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

**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 4040708: Prepared 04/19/04 Using EPA 5030B

Matrix Spike Dup (4040708-MSD1)

Source: P4D0541-04

Surrogate: Dibromofluoromethane	22.8			ug/l	20.0		114	80-121			
Surrogate: Toluene-d8	21.6			"	20.0		108	80-120			

Batch 4040833: Prepared 04/21/04 Using EPA 5030B

Blank (4040833-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	0.200	"							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	17.4			"	20.0		87.0	75-120			
Surrogate: 1,2-DCA-d4	18.8			"	20.0		94.0	77-129			
Surrogate: Dibromofluoromethane	18.5			"	20.0		92.5	80-121			
Surrogate: Toluene-d8	18.4			"	20.0		92.0	80-120			

LCS (4040833-BS1)

Benzene	19.5	0.147	0.200	ug/l	20.0		97.5	80-120			
Toluene	19.9	0.155	0.500	"	20.0		99.5	80-124			
Ethylbenzene	19.1	0.110	0.500	"	20.0		95.5	80-120			
Xylenes (total)	56.2	0.262	1.00	"	60.0		93.7	73-124			
Methyl tert-butyl ether	20.8	0.0865	2.00	"	20.0		104	80-129			
Naphthalene	21.1	0.0989	2.00	"	20.0		106	72-149			
Surrogate: 4-BFB	18.3			"	20.0		91.5	75-120			
Surrogate: 1,2-DCA-d4	19.1			"	20.0		95.5	77-129			
Surrogate: Dibromofluoromethane	19.2			"	20.0		96.0	80-121			

North Creek Analytical - Portland

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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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

**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 4040833: Prepared 04/21/04 Using EPA 5030B

LCS (4040833-BS1)

<i>Surrogate: Toluene-d8</i>	19.6			ug/l	20.0		98.0	80-120			
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Matrix Spike (4040833-MS1)

Source: P4D0656-01

Benzene	23.0	0.147	0.200	ug/l	20.0	1.04	110	80-124			
Toluene	21.2	0.155	0.500	"	20.0	ND	106	79.7-131			
Ethylbenzene	21.3	0.110	0.500	"	20.0	ND	106	80-124			
Xylenes (total)	59.2	0.262	1.00	"	60.0	ND	98.7	44.6-154			
Methyl tert-butyl ether	22.6	0.0865	2.00	"	20.0	0.200	112	80-130			
Naphthalene	24.9	0.0989	2.00	"	20.0	ND	124	69-163			

<i>Surrogate: 4-BFB</i>	18.6			"	20.0		93.0	75-120			
<i>Surrogate: 1,2-DCA-d4</i>	18.6			"	20.0		93.0	77-129			
<i>Surrogate: Dibromofluoromethane</i>	19.4			"	20.0		97.0	80-121			
<i>Surrogate: Toluene-d8</i>	18.5			"	20.0		92.5	80-120			

Matrix Spike Dup (4040833-MSD1)

Source: P4D0656-01

Benzene	22.5	0.147	0.200	ug/l	20.0	1.04	107	80-124	2.20	25	
Toluene	20.9	0.155	0.500	"	20.0	ND	104	79.7-131	1.43	25	
Ethylbenzene	21.2	0.110	0.500	"	20.0	ND	106	80-124	0.471	25	
Xylenes (total)	59.3	0.262	1.00	"	60.0	ND	98.8	44.6-154	0.169	25	
Methyl tert-butyl ether	22.9	0.0865	2.00	"	20.0	0.200	114	80-130	1.32	25	
Naphthalene	24.9	0.0989	2.00	"	20.0	ND	124	69-163	0.00	25	

<i>Surrogate: 4-BFB</i>	19.2			"	20.0		96.0	75-120			
<i>Surrogate: 1,2-DCA-d4</i>	18.6			"	20.0		93.0	77-129			
<i>Surrogate: Dibromofluoromethane</i>	19.5			"	20.0		97.5	80-121			
<i>Surrogate: Toluene-d8</i>	18.6			"	20.0		93.0	80-120			

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

**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 4040712: Prepared 04/19/04 Using EPA 3520/600 Series

Blank (4040712-BLK1)

Acenaphthene	ND	0.0500	0.0500	ug/l							U
Acenaphthylene	ND	0.0500	0.0500	"							U
Anthracene	ND	0.0500	0.0500	"							U
Benzo (a) anthracene	ND	0.0100	0.0100	"							U
Benzo (a) pyrene	ND	0.0100	0.0100	"							U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"							U
Benzo (ghi) perylene	ND	0.0500	0.0500	"							U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"							U
Chrysene	ND	0.0100	0.0100	"							U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"							U
Fluoranthene	ND	0.0500	0.0500	"							U
Fluorene	ND	0.0500	0.0500	"							U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"							U
Naphthalene	ND	0.0500	0.0500	"							U
Phenanthrene	ND	0.0500	0.0500	"							U
Pyrene	ND	0.0500	0.0500	"							U
Surrogate: Fluorene-d10	1.54			"	2.50		61.6	25-150			
Surrogate: Pyrene-d10	1.82			"	2.50		72.8	23-150			
Surrogate: Benzo (a) pyrene-d12	1.77			"	2.50		70.8	10-150			

LCS (4040712-BS1)

Acenaphthene	1.86	0.0500	0.0500	ug/l	2.50		74.4	26-150			
Benzo (a) pyrene	1.97	0.0100	0.0100	"	2.50		78.8	38-150			
Pyrene	1.98	0.0500	0.0500	"	2.50		79.2	33-150			
Surrogate: Fluorene-d10	1.81			"	2.50		72.4	25-150			
Surrogate: Pyrene-d10	1.98			"	2.50		79.2	23-150			
Surrogate: Benzo (a) pyrene-d12	1.90			"	2.50		76.0	10-150			

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 13:23

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 4040712: Prepared 04/19/04 Using EPA 3520/600 Series

Matrix Spike (4040712-MS1)

Source: P4D0481-11

Acenaphthene	1.60	0.0500	0.0500	ug/l	2.36	ND	67.8	26-135			
Benzo (a) pyrene	0.942	0.0100	0.0100	"	2.36	ND	39.9	38-137			
Pyrene	1.94	0.0500	0.0500	"	2.36	ND	82.2	33-133			
<i>Surrogate: Fluorene-d10</i>	<i>1.50</i>			"	<i>2.36</i>		<i>63.6</i>	<i>25-150</i>			
<i>Surrogate: Pyrene-d10</i>	<i>1.81</i>			"	<i>2.36</i>		<i>76.7</i>	<i>23-150</i>			
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>1.01</i>			"	<i>2.36</i>		<i>42.8</i>	<i>10-150</i>			

Matrix Spike Dup (4040712-MSD1)

Source: P4D0481-11

Acenaphthene	1.81	0.0500	0.0500	ug/l	2.36	ND	76.7	26-135	12.3	60	
Benzo (a) pyrene	1.08	0.0100	0.0100	"	2.36	ND	45.8	38-137	13.6	60	
Pyrene	2.09	0.0500	0.0500	"	2.36	ND	88.6	33-133	7.44	60	
<i>Surrogate: Fluorene-d10</i>	<i>1.69</i>			"	<i>2.36</i>		<i>71.6</i>	<i>25-150</i>			
<i>Surrogate: Pyrene-d10</i>	<i>1.91</i>			"	<i>2.36</i>		<i>80.9</i>	<i>23-150</i>			
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>1.14</i>			"	<i>2.36</i>		<i>48.3</i>	<i>10-150</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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 13:23

Notes and Definitions

- A-02 Detected hydrocarbons appear to be mainly due to weathered gasoline although there may be a trace of weathered diesel present.
- 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.
- Q-06 Analyses are not controlled on RPD values from sample concentrations less than 5 times the reporting limit.
- 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-08 Surrogate recovery is above control limits. Since no analytes were detected in the sample, the quality of the data has not been affected.
- 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, Project Manager

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ASTORIA AREA-WIDE PETROLEUM SITE CHAIN OF CUSTODY REPORT

Work Order #: **P4000481**

CLIENT: Environmental Resources	INVOICE TO: Environmental Resources	TURNAROUND REQUEST in Business Days *	
REPORT TO: Tom Gallagher	E-mail: tom.gallagher@erresources.com	10 <input type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 <input type="checkbox"/>	Organic & Inorganic Analyses
ADDRESS: 15050 S.W. 7th St, Portland, OR 97224	FAX: 503-763-5122	5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 <input type="checkbox"/>	Petroleum Hydrocarbon Analyses
PHONE: 503-763-5122	P.O. NUMBER: 100-17-0001	OTHER	Specify:
PROJECT NAME: Astoria Area-Wide Petro Site RI-1	REQUESTED ANALYSES	* Turnaround Requests less than standard may incur Rush Charges	
PROJECT NUMBER: 100-17-0001		MATRIX (gw, Soil)	# OF CONT.
SAMPLED BY: MJM, MAGS			
CLIENT SAMPLE IDENTIFICATION	SAMPLE LOCATION	SAMPLING DATE/TIME	COMMENTS
1 MW-48(A)	MW-48(A)	4/13/04 / 13:15	GW 11
2 MW-47(A)	MW-47(A)	4/13/04 / 14:40	GW 11
3 MW-46(A)	MW-46(A)	4/13/04 / 15:55	GW 11
4 MW-7(M)	MW-7(M)	4/13/04 / 14:35	GW 11
5 MW-33(A)	MW-33(A)	4/13/04 / 17:15	GW 11
6 MW-10(M)	MW-10(M)	4/13/04 / 18:30	GW 11
7 MW-11(M)	MW-11(M)	4/13/04 / 19:45	GW 11
8 TRIP BLANK	TRIP BLANK	4/13/04 / 19:45	W 1
9 TRIP BLANK	TRIP BLANK	4/13/04 / 15:55	W 1
10 MW-6(M)	MW-6(M)	4/13/04 / 10:45	GW 11
11 MW-43(A)	MW-43(A)	4/13/04 / 13:30	GW 11
12 MW-32(A)	MW-32(A)	4/13/04 / 13:40	GW 11
13 MW-31(A)	MW-31(A)	4/13/04 / 14:35	GW 11
14 BM-31(A)	BM-31(A)	4/13/04 / 14:35	GW 11
15 MW-35(A)	MW-35(A)	4/13/04 / 15:50	GW 11

RECEIVED BY: **Michael Berg** DATE: **4/14/04** TIME: **13:30**
 RECEIVED BY: **Calie Fawcett** DATE: **4/14/04** TIME: **15:55**
 FIRM: **Environmental Resources**
 FIRM: **Environmental Resources**
 ADDITIONAL REMARKS: **LOW LEVELS**
2.7, 0.7, 0.8, 0.5, 4.2, 3.5, 2.9, 0.1, 1.7, 5.5, 1.13



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ASTORIA AREA-WIDE PETROLEUM SITE CHAIN OF CUSTODY REPORT

Work Order #: **640058**

CLIENT: Environmental Remediation Associates
 REPORT TO: Tom Kutschick
 ADDRESS: PO Box 50762
 Portland, OR 97252

INVOICE TO:
 General Leasing Resources
 P.O. NUMBER: 12077 C01

TURNAROUND REQUEST in Business Days*
 Organic & Inorganic Analyses: 10 7 5 4 3 2 1 <1
 Petroleum Hydrocarbon Analyses: 5 4 3 2 1 <1
 OTHER: STD OTHER Specify: _____
 * Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLE LOCATION	SAMPLING DATE/TIME	NVTPHG-Dx	NVTPHGx	8260B RBCA	8270 SIM PAH	Total RCR 8 METALS	RCRA 8 METALS Dissolved	Total Cations: Na, K, Ca, Mg, Fe, Mn	Chloride 300.0	Sulfate 300.0	Al/HC/CO3/CO2	SM12320B	Nitrate/Nitrite 35.2	Total Lead	MATRIX (gw, Soil)	# OF CONT.	COMMENTS
MW-30(A)	MW-30(A)	4/13/04 / 14:10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	GW	11	
MW-34(A)	MW-34(A)	4/14/04 / 7:30	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	GW	11	
TRIP BLANK	TRIP BLANK	4/14/04 / 7:30	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	W	1	
MW-45(A)	MW-45(A)	4/14/04 / 8:30	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	GW	11	
MW-39(A)	MW-39(A)	4/14/04 / 9:30	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	GW	11	
MW-38(A)	MW-38(A)	4/14/04 / 10:45	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	GW	11	
MW-36(A)	MW-36(A)	4/14/04 / 12:30	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	GW	11	
MW-27(A)	MW-27(A)	4/14/04 / 13:00	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	GW	11	

RELINQUISHED BY: *Tom Kutschick*
 PRINT NAME: Tom Kutschick FIRM: Environmental Remediation Associates
 RECEIVED BY: *General Leasing Resources*
 PRINT NAME: General Leasing Resources FIRM: N/A
 DATE: 4/14/04 TIME: 13:30
 DATE: 4/14/04 TIME: 15:55
 ADDITIONAL REMARKS: LOW LEVELS
 2.3, 0.7, 0.8, 0.5, 4.2
 3.5, 2.9, 0.1, 1.4, 5.5, 1.3

NORTH CREEK ANALYTICAL COOLER RECEIPT FORM

(Army Corp. compliant)

Client: ENVIRIDIGIC

1. Please sign for receipt and opening of 11 cooler or other

By (print) Callie Fahnstolz (sign) Callie Fahnstolz

2. Date samples received 4/14/04 Date opened: Same or 1/1/

3. Delivered by: NCA courier FedEx UPS Courier Client Other DVRD
Airbill # if applicable _____ (Put copy of shipping papers in file)

4. There were 0 custody seals present, signed by _____ date 1/1/

5. Were the custody seals unbroken and intact at the date and time of arrival? Yes No

6. Was ice used? yes no Type of ice: blue ice gel ice real ice

Temperature (degrees C) 2.3 Raytek thermometer 0.7 Digi-Therm (probe temperature blank) (no temp blank) 0.8, 0.5, 4.2, 3.5, 2.9, 0.1, 1.4, 5.7, 1.3

7. Are custody papers sealed in a plastic bag and taped inside to lid? Yes No

8. Were custody papers filled out properly (ink, signed, etc.)? Yes No
If "no" please specify: _____

9. Was project identifiable from custody papers? Yes No

Name of project Astana Area Wide (if applicable)

10. Initial and date for unpacking: CF (initials) date 4/14/04

11. Packing material: bubble wrap/bag styrofoam cardboard other

12. Were samples in bags? Yes No

13. Did all containers indicated on the COC arrive? Yes No
If "no" please indicate which containers were absent _____

14. Were all containers unbroken and labels in good condition? Yes No
If "no" please indicate which containers _____

15. Were all bottle labels complete (ID, date, time, signature, etc.)? Yes No
Do the IDs, times, etc. agree with the COC? Yes No

If "no" please indicate which containers 11 Amber up for MW-27(A)
labeled MW-26(A) time matches

16. Are containers properly preserved for indicated analysis? Yes No

17. Is there adequate volume for the test(s) requested? Yes No

18. If voa vials were submitted, are they free of bubbles? Yes No N/A

19. Log-in phase: Date samples were logged in: 4/14/04 Elm Project # P 400481

20. Logged in by (print) Erica Dakan (sign) Erica Dakan

21. Was the project manager notified of status? (Use back of form as a record) Yes No



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03 May 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 04/16/04 15:30. 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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-28(A)	P4D0600-01	Water	04/14/04 16:12	04/16/04 15:30
MW-24(A)	P4D0600-02	Water	04/14/04 15:00	04/16/04 15:30
MW-26(A)	P4D0600-03	Water	04/14/04 14:14	04/16/04 15:30
Equipment Blank	P4D0600-04	Water	04/14/04 14:55	04/16/04 15:30
MW-2(M)	P4D0600-05	Water	04/14/04 17:30	04/16/04 15:30
Trip Blank	P4D0600-06	Water	04/15/04 10:00	04/16/04 15:30
MW-23(A)	P4D0600-07	Water	04/15/04 12:01	04/16/04 15:30
MW-17(A)	P4D0600-08	Water	04/15/04 10:55	04/16/04 15:30
MW-18(A)	P4D0600-09	Water	04/15/04 10:00	04/16/04 15:30
BM-23(A)	P4D0600-10	Water	04/15/04 12:01	04/16/04 15:30
MW-16(A)	P4D0600-11	Water	04/15/04 08:50	04/16/04 15:30
MW-1(F)	P4D0600-12	Water	04/15/04 07:30	04/16/04 15:30
MW-22(A)	P4D0600-13	Water	04/15/04 14:35	04/16/04 15:30
MW-19(A)	P4D0600-14	Water	04/15/04 15:45	04/16/04 15:30
MW-20(A)	P4D0600-15	Water	04/15/04 16:42	04/16/04 15:30
MW-12(A)	P4D0600-16	Water	04/16/04 07:25	04/16/04 15:30
MW-14(A)	P4D0600-17	Water	04/16/04 08:15	04/16/04 15:30
MW-13(A)	P4D0600-18	Water	04/16/04 09:27	04/16/04 15:30
MW-21(A)	P4D0600-19	Water	04/16/04 11:15	04/16/04 15:30
Trip Blank	P4D0600-20	Water	04/16/04 11:15	04/16/04 15:30

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: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 14:00

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-28(A) (P4D0600-01RE1) Water Sampled: 04/14/04 16:12 Received: 04/16/04 15:30										
Gasoline Range Hydrocarbons	8910	60.2	800	ug/l	10	4040739	04/16/04	04/19/04	NW TPH-G	D
<i>Surrogate: 4-BFB</i>	<i>102 %</i>		<i>50-150</i>			"	"	"	"	
MW-24(A) (P4D0600-02RE1) Water Sampled: 04/14/04 15:00 Received: 04/16/04 15:30										
Gasoline Range Hydrocarbons	813	6.02	80.0	ug/l	1	4040739	04/16/04	04/19/04	NW TPH-G	
<i>Surrogate: 4-BFB</i>	<i>105 %</i>		<i>50-150</i>			"	"	"	"	
MW-26(A) (P4D0600-03RE1) Water Sampled: 04/14/04 14:14 Received: 04/16/04 15:30										
Gasoline Range Hydrocarbons	18500	60.2	800	ug/l	10	4040739	04/16/04	04/19/04	NW TPH-G	D
<i>Surrogate: 4-BFB</i>	<i>127 %</i>		<i>50-150</i>			"	"	"	"	
MW-2(M) (P4D0600-05RE1) Water Sampled: 04/14/04 17:30 Received: 04/16/04 15:30										
Gasoline Range Hydrocarbons	6470	60.2	800	ug/l	10	4040739	04/16/04	04/19/04	NW TPH-G	D
<i>Surrogate: 4-BFB</i>	<i>136 %</i>		<i>50-150</i>			"	"	"	"	
MW-23(A) (P4D0600-07RE1) Water Sampled: 04/15/04 12:01 Received: 04/16/04 15:30										
Gasoline Range Hydrocarbons	207	6.02	80.0	ug/l	1	4040739	04/16/04	04/19/04	NW TPH-G	
<i>Surrogate: 4-BFB</i>	<i>101 %</i>		<i>50-150</i>			"	"	"	"	
MW-17(A) (P4D0600-08RE1) Water Sampled: 04/15/04 10:55 Received: 04/16/04 15:30										
Gasoline Range Hydrocarbons	516	6.02	80.0	ug/l	1	4040739	04/16/04	04/19/04	NW TPH-G	
<i>Surrogate: 4-BFB</i>	<i>112 %</i>		<i>50-150</i>			"	"	"	"	
MW-18(A) (P4D0600-09RE1) Water Sampled: 04/15/04 10:00 Received: 04/16/04 15:30										
Gasoline Range Hydrocarbons	148	6.02	80.0	ug/l	1	4040739	04/16/04	04/19/04	NW TPH-G	
<i>Surrogate: 4-BFB</i>	<i>86.0 %</i>		<i>50-150</i>			"	"	"	"	

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: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 14:00

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BM-23(A) (P4D0600-10RE1) Water Sampled: 04/15/04 12:01 Received: 04/16/04 15:30										
Gasoline Range Hydrocarbons	198	6.02	80.0	ug/l	1	4040739	04/16/04	04/19/04	NW TPH-G	
<i>Surrogate: 4-BFB</i>	<i>99.0 %</i>		<i>50-150</i>			"	"	"	"	
MW-16(A) (P4D0600-11RE1) Water Sampled: 04/15/04 08:50 Received: 04/16/04 15:30										
Gasoline Range Hydrocarbons	315	6.02	80.0	ug/l	1	4040739	04/16/04	04/19/04	NW TPH-G	
<i>Surrogate: 4-BFB</i>	<i>83.2 %</i>		<i>50-150</i>			"	"	"	"	
MW-1(F) (P4D0600-12RE1) Water Sampled: 04/15/04 07:30 Received: 04/16/04 15:30										
Gasoline Range Hydrocarbons	141	6.02	80.0	ug/l	1	4040739	04/16/04	04/19/04	NW TPH-G	
<i>Surrogate: 4-BFB</i>	<i>87.0 %</i>		<i>50-150</i>			"	"	"	"	
MW-22(A) (P4D0600-13RE1) Water Sampled: 04/15/04 14:35 Received: 04/16/04 15:30										
Gasoline Range Hydrocarbons	28.3	6.02	80.0	ug/l	1	4040739	04/16/04	04/19/04	NW TPH-G	J
<i>Surrogate: 4-BFB</i>	<i>71.0 %</i>		<i>50-150</i>			"	"	"	"	
MW-19(A) (P4D0600-14RE1) Water Sampled: 04/15/04 15:45 Received: 04/16/04 15:30										
Gasoline Range Hydrocarbons	19.9	6.02	80.0	ug/l	1	4040739	04/16/04	04/19/04	NW TPH-G	J
<i>Surrogate: 4-BFB</i>	<i>74.0 %</i>		<i>50-150</i>			"	"	"	"	
MW-20(A) (P4D0600-15RE1) Water Sampled: 04/15/04 16:42 Received: 04/16/04 15:30										
Gasoline Range Hydrocarbons	263	6.02	80.0	ug/l	1	4040739	04/16/04	04/19/04	NW TPH-G	
<i>Surrogate: 4-BFB</i>	<i>95.2 %</i>		<i>50-150</i>			"	"	"	"	
MW-12(A) (P4D0600-16RE1) Water Sampled: 04/16/04 07:25 Received: 04/16/04 15:30										
Gasoline Range Hydrocarbons	27.9	6.02	80.0	ug/l	1	4040739	04/16/04	04/19/04	NW TPH-G	J
<i>Surrogate: 4-BFB</i>	<i>81.0 %</i>		<i>50-150</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: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 14:00

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-14(A) (P4D0600-17RE1) Water Sampled: 04/16/04 08:15 Received: 04/16/04 15:30										
Gasoline Range Hydrocarbons	22.5	6.02	80.0	ug/l	1	4040739	04/16/04	04/19/04	NW TPH-G	J
<i>Surrogate: 4-BFB</i>	79.4 %		50-150			"	"	"	"	
MW-13(A) (P4D0600-18RE1) Water Sampled: 04/16/04 09:27 Received: 04/16/04 15:30										
Gasoline Range Hydrocarbons	13400	60.2	800	ug/l	10	4040739	04/16/04	04/19/04	NW TPH-G	D
<i>Surrogate: 4-BFB</i>	159 %		50-150			"	"	"	"	S-09
MW-21(A) (P4D0600-19RE1) Water Sampled: 04/16/04 11:15 Received: 04/16/04 15:30										
Gasoline Range Hydrocarbons	243	6.02	80.0	ug/l	1	4040739	04/16/04	04/20/04	NW TPH-G	
<i>Surrogate: 4-BFB</i>	99.6 %		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 RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

**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
MW-28(A) (P4D0600-01) Water Sampled: 04/14/04 16:12 Received: 04/16/04 15:30										
Diesel Range Organics	0.851	0.153	0.250	mg/l	1	4040703	04/19/04	04/20/04	NWTPH-Dx	D-08
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	77.9 %		50-150			"	"	"	"	
MW-24(A) (P4D0600-02) Water Sampled: 04/14/04 15:00 Received: 04/16/04 15:30										
Diesel Range Organics	0.735	0.153	0.250	mg/l	1	4040703	04/19/04	04/20/04	NWTPH-Dx	D-08
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	67.2 %		50-150			"	"	"	"	
MW-26(A) (P4D0600-03) Water Sampled: 04/14/04 14:14 Received: 04/16/04 15:30										
Diesel Range Organics	3.46	0.153	0.250	mg/l	1	4040703	04/19/04	04/20/04	NWTPH-Dx	D-08
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	85.0 %		50-150			"	"	"	"	
MW-2(M) (P4D0600-05) Water Sampled: 04/14/04 17:30 Received: 04/16/04 15:30										
Diesel Range Organics	4.17	0.153	0.250	mg/l	1	4040703	04/19/04	04/20/04	NWTPH-Dx	A-01
Heavy Oil Range Hydrocarbons	0.295	0.286	0.500	"	"	"	"	"	"	J
Surrogate: 1-Chlorooctadecane	113 %		50-150			"	"	"	"	
MW-23(A) (P4D0600-07) Water Sampled: 04/15/04 12:01 Received: 04/16/04 15:30										
Diesel Range Organics	0.194	0.153	0.250	mg/l	1	4040705	04/19/04	04/20/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	86.6 %		50-150			"	"	"	"	
MW-17(A) (P4D0600-08) Water Sampled: 04/15/04 10:55 Received: 04/16/04 15:30										
Diesel Range Organics	0.490	0.153	0.250	mg/l	1	4040705	04/19/04	04/19/04	NWTPH-Dx	D-08
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	88.7 %		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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

**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
MW-18(A) (P4D0600-09) Water Sampled: 04/15/04 10:00 Received: 04/16/04 15:30										
Diesel Range Organics	0.241	0.153	0.250	mg/l	1	4040705	04/19/04	04/20/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	67.1 %		50-150			"	"	"	"	
BM-23(A) (P4D0600-10) Water Sampled: 04/15/04 12:01 Received: 04/16/04 15:30										
Diesel Range Organics	ND	0.153	0.250	mg/l	1	4040705	04/19/04	04/20/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	86.0 %		50-150			"	"	"	"	
MW-16(A) (P4D0600-11) Water Sampled: 04/15/04 08:50 Received: 04/16/04 15:30										
Diesel Range Organics	0.859	0.153	0.250	mg/l	1	4040705	04/19/04	04/20/04	NWTPH-Dx	D-17
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	74.0 %		50-150			"	"	"	"	
MW-1(F) (P4D0600-12) Water Sampled: 04/15/04 07:30 Received: 04/16/04 15:30										
Diesel Range Organics	0.163	0.153	0.250	mg/l	1	4040705	04/19/04	04/20/04	NWTPH-Dx	J
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	83.1 %		50-150			"	"	"	"	
MW-22(A) (P4D0600-13) Water Sampled: 04/15/04 14:35 Received: 04/16/04 15:30										
Diesel Range Organics	ND	0.153	0.250	mg/l	1	4040705	04/19/04	04/19/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	85.8 %		50-150			"	"	"	"	
MW-19(A) (P4D0600-14) Water Sampled: 04/15/04 15:45 Received: 04/16/04 15:30										
Diesel Range Organics	ND	0.153	0.250	mg/l	1	4040705	04/19/04	04/20/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
Surrogate: 1-Chlorooctadecane	60.9 %		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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

**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
MW-20(A) (P4D0600-15) Water Sampled: 04/15/04 16:42 Received: 04/16/04 15:30										
Diesel Range Organics	0.918	0.153	0.250	mg/l	1	4040705	04/19/04	04/20/04	NWTPH-Dx	D-15
Heavy Oil Range Hydrocarbons	0.640	0.286	0.500	"	"	"	"	"	"	D-15
<i>Surrogate: 1-Chlorooctadecane</i>	73.2 %		50-150			"	"	"	"	
MW-12(A) (P4D0600-16) Water Sampled: 04/16/04 07:25 Received: 04/16/04 15:30										
Diesel Range Organics	ND	0.153	0.250	mg/l	1	4040705	04/19/04	04/20/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	89.2 %		50-150			"	"	"	"	
MW-14(A) (P4D0600-17) Water Sampled: 04/16/04 08:15 Received: 04/16/04 15:30										
Diesel Range Organics	ND	0.153	0.250	mg/l	1	4040705	04/19/04	04/20/04	NWTPH-Dx	U
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	72.0 %		50-150			"	"	"	"	
MW-13(A) (P4D0600-18) Water Sampled: 04/16/04 09:27 Received: 04/16/04 15:30										
Diesel Range Organics	1.93	0.153	0.250	mg/l	1	4040705	04/19/04	04/20/04	NWTPH-Dx	A-01
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	77.0 %		50-150			"	"	"	"	
MW-21(A) (P4D0600-19) Water Sampled: 04/16/04 11:15 Received: 04/16/04 15:30										
Diesel Range Organics	4.86	0.153	0.250	mg/l	1	4040705	04/19/04	04/20/04	NWTPH-Dx	D-17
Heavy Oil Range Hydrocarbons	0.734	0.286	0.500	"	"	"	"	"	"	D-15
<i>Surrogate: 1-Chlorooctadecane</i>	84.5 %		50-150			"	"	"	"	

North Creek Analytical - Portland

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Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

**Total Metals per EPA 200 Series Methods
North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-28(A) (P4D0600-01) Water Sampled: 04/14/04 16:12 Received: 04/16/04 15:30										
Lead	0.101	0.0000870	0.00100	mg/l	1	4040841	04/21/04	04/22/04	EPA 200.8	
MW-24(A) (P4D0600-02) Water Sampled: 04/14/04 15:00 Received: 04/16/04 15:30										
Lead	0.00454	0.0000870	0.00100	mg/l	1	4040841	04/21/04	04/22/04	EPA 200.8	
MW-26(A) (P4D0600-03) Water Sampled: 04/14/04 14:14 Received: 04/16/04 15:30										
Lead	0.00403	0.0000870	0.00100	mg/l	1	4040841	04/21/04	04/22/04	EPA 200.8	
MW-2(M) (P4D0600-05) Water Sampled: 04/14/04 17:30 Received: 04/16/04 15:30										
Lead	0.0605	0.0000870	0.00100	mg/l	1	4040841	04/21/04	04/22/04	EPA 200.8	
MW-23(A) (P4D0600-07) Water Sampled: 04/15/04 12:01 Received: 04/16/04 15:30										
Lead	0.0233	0.0000870	0.00100	mg/l	1	4040841	04/21/04	04/22/04	EPA 200.8	
MW-17(A) (P4D0600-08) Water Sampled: 04/15/04 10:55 Received: 04/16/04 15:30										
Lead	0.00322	0.0000870	0.00100	mg/l	1	4040841	04/21/04	04/22/04	EPA 200.8	
MW-18(A) (P4D0600-09) Water Sampled: 04/15/04 10:00 Received: 04/16/04 15:30										
Lead	0.0142	0.0000870	0.00100	mg/l	1	4040841	04/21/04	04/22/04	EPA 200.8	
BM-23(A) (P4D0600-10) Water Sampled: 04/15/04 12:01 Received: 04/16/04 15:30										
Lead	0.0237	0.0000870	0.00100	mg/l	1	4040841	04/21/04	04/22/04	EPA 200.8	
MW-16(A) (P4D0600-11) Water Sampled: 04/15/04 08:50 Received: 04/16/04 15:30										
Lead	0.00504	0.0000870	0.00100	mg/l	1	4040841	04/21/04	04/22/04	EPA 200.8	

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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 14:00

**Total Metals per EPA 200 Series Methods
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1(F) (P4D0600-12) Water Sampled: 04/15/04 07:30 Received: 04/16/04 15:30										
Lead	0.00189	0.0000870	0.00100	mg/l	1	4040841	04/21/04	04/22/04	EPA 200.8	
MW-22(A) (P4D0600-13) Water Sampled: 04/15/04 14:35 Received: 04/16/04 15:30										
Lead	0.00473	0.0000870	0.00100	mg/l	1	4040841	04/21/04	04/22/04	EPA 200.8	
MW-19(A) (P4D0600-14) Water Sampled: 04/15/04 15:45 Received: 04/16/04 15:30										
Lead	0.0123	0.0000870	0.00100	mg/l	1	4040841	04/21/04	04/23/04	EPA 200.8	
MW-20(A) (P4D0600-15) Water Sampled: 04/15/04 16:42 Received: 04/16/04 15:30										
Lead	0.00924	0.0000870	0.00100	mg/l	1	4040841	04/21/04	04/23/04	EPA 200.8	
MW-12(A) (P4D0600-16) Water Sampled: 04/16/04 07:25 Received: 04/16/04 15:30										
Lead	0.00208	0.0000870	0.00100	mg/l	1	4040841	04/21/04	04/23/04	EPA 200.8	
MW-14(A) (P4D0600-17) Water Sampled: 04/16/04 08:15 Received: 04/16/04 15:30										
Lead	0.00118	0.0000870	0.00100	mg/l	1	4040841	04/21/04	04/23/04	EPA 200.8	
MW-13(A) (P4D0600-18) Water Sampled: 04/16/04 09:27 Received: 04/16/04 15:30										
Lead	0.00671	0.0000870	0.00100	mg/l	1	4040841	04/21/04	04/23/04	EPA 200.8	
MW-21(A) (P4D0600-19) Water Sampled: 04/16/04 11:15 Received: 04/16/04 15:30										
Lead	0.00216	0.0000870	0.00100	mg/l	1	4040841	04/21/04	04/23/04	EPA 200.8	

North Creek Analytical - Portland

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Portland, OR 97280-0762

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-28(A) (P4D0600-01) Water Sampled: 04/14/04 16:12 Received: 04/16/04 15:30										
1,2-Dibromoethane	ND	1.87	5.00	ug/l	10	4040892	04/22/04	04/22/04	EPA 8260B	D, U
1,2-Dichloroethane	ND	1.42	5.00	"	"	"	"	"	"	D, U
Benzene	179	1.47	2.00	"	"	"	"	"	"	D
Toluene	88.9	1.55	5.00	"	"	"	"	"	"	D
Ethylbenzene	247	1.10	5.00	"	"	"	"	"	"	D
Xylenes (total)	874	2.62	10.0	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	0.865	20.0	"	"	"	"	"	"	D, U
Naphthalene	118	0.989	20.0	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	250	0.884	10.0	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	51.2	1.57	5.00	"	"	"	"	"	"	D
Isopropylbenzene	16.2	1.07	20.0	"	"	"	"	"	"	J, D
n-Propylbenzene	37.4	1.38	5.00	"	"	"	"	"	"	D
Surrogate: 4-BFB	89.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	97.0 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	94.5 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	94.5 %		80-120			"	"	"	"	
MW-24(A) (P4D0600-02RE1) Water Sampled: 04/14/04 15:00 Received: 04/16/04 15:30										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4041006	04/26/04	04/26/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	0.160	0.147	0.200	"	"	"	"	"	"	J
Toluene	0.330	0.155	0.500	"	"	"	"	"	"	J
Ethylbenzene	28.4	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	30.7	0.262	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	40.9	0.0989	2.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	55.0	0.0884	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	3.87	0.157	0.500	"	"	"	"	"	"	
Isopropylbenzene	4.54	0.107	2.00	"	"	"	"	"	"	
n-Propylbenzene	11.1	0.138	0.500	"	"	"	"	"	"	
Surrogate: 4-BFB	98.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	103 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	106 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	91.5 %		80-120			"	"	"	"	

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

**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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MW-26(A) (P4D0600-03) Water Sampled: 04/14/04 14:14 Received: 04/16/04 15:30

1,2-Dibromoethane	ND	3.74	10.0	ug/l	20	4040892	04/22/04	04/22/04	EPA 8260B	D, U
1,2-Dichloroethane	ND	2.84	10.0	"	"	"	"	"	"	D, U
Benzene	ND	2.94	4.00	"	"	"	"	"	"	D, U
Toluene	14.8	3.10	10.0	"	"	"	"	"	"	D
Ethylbenzene	852	2.20	10.0	"	"	"	"	"	"	D
Xylenes (total)	3060	5.24	20.0	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	1.73	40.0	"	"	"	"	"	"	D, U
Naphthalene	801	1.98	40.0	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	2580	1.77	20.0	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	565	3.14	10.0	"	"	"	"	"	"	D
Isopropylbenzene	96.0	2.14	40.0	"	"	"	"	"	"	D
n-Propylbenzene	251	2.76	10.0	"	"	"	"	"	"	D
<i>Surrogate: 4-BFB</i>	<i>91.0 %</i>		<i>75-120</i>							
<i>Surrogate: 1,2-DCA-d4</i>	<i>97.5 %</i>		<i>77-129</i>							
<i>Surrogate: Dibromofluoromethane</i>	<i>94.0 %</i>		<i>80-121</i>							
<i>Surrogate: Toluene-d8</i>	<i>95.5 %</i>		<i>80-120</i>							

Equipment Blank (P4D0600-04) Water Sampled: 04/14/04 14:55 Received: 04/16/04 15:30

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040892	04/22/04	04/22/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	0.470	0.155	0.500	"	"	"	"	"	"	J
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
<i>Surrogate: 4-BFB</i>	<i>84.5 %</i>		<i>75-120</i>							
<i>Surrogate: 1,2-DCA-d4</i>	<i>90.5 %</i>		<i>77-129</i>							
<i>Surrogate: Dibromofluoromethane</i>	<i>88.5 %</i>		<i>80-121</i>							
<i>Surrogate: Toluene-d8</i>	<i>90.0 %</i>		<i>80-120</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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-2(M) (P4D0600-05) Water Sampled: 04/14/04 17:30 Received: 04/16/04 15:30										
1,2-Dibromoethane	ND	0.935	2.50	ug/l	5	4040892	04/22/04	04/22/04	EPA 8260B	D, U
1,2-Dichloroethane	ND	0.710	2.50	"	"	"	"	"	"	D, U
Benzene	28.8	0.735	1.00	"	"	"	"	"	"	D
Toluene	13.4	0.775	2.50	"	"	"	"	"	"	D
Ethylbenzene	625	0.550	2.50	"	"	"	"	"	"	D
Xylenes (total)	342	1.31	5.00	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	0.432	10.0	"	"	"	"	"	"	D, U
Naphthalene	334	0.494	10.0	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	87.6	0.442	5.00	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	3.55	0.785	2.50	"	"	"	"	"	"	D
Isopropylbenzene	54.7	0.535	10.0	"	"	"	"	"	"	D
n-Propylbenzene	212	0.690	2.50	"	"	"	"	"	"	D
<i>Surrogate: 4-BFB</i>	86.0 %		75-120			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	99.5 %		77-129			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	96.5 %		80-121			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	92.0 %		80-120			"	"	"	"	
Trip Blank (P4D0600-06) Water Sampled: 04/15/04 10:00 Received: 04/16/04 15:30										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040892	04/22/04	04/22/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	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
<i>Surrogate: 4-BFB</i>	83.0 %		75-120			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	93.0 %		77-129			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	90.5 %		80-121			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	90.0 %		80-120			"	"	"	"	

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-23(A) (P4D0600-07) Water Sampled: 04/15/04 12:01 Received: 04/16/04 15:30										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040892	04/22/04	04/22/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	3.04	0.147	0.200	"	"	"	"	"	"	
Toluene	1.13	0.155	0.500	"	"	"	"	"	"	
Ethylbenzene	14.8	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	14.5	0.262	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	9.17	0.0989	2.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	2.70	0.0884	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.840	0.157	0.500	"	"	"	"	"	"	
Isopropylbenzene	3.27	0.107	2.00	"	"	"	"	"	"	
n-Propylbenzene	6.02	0.138	0.500	"	"	"	"	"	"	
Surrogate: 4-BFB	85.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	93.5 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	94.0 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	85.5 %		80-120			"	"	"	"	
MW-17(A) (P4D0600-08) Water Sampled: 04/15/04 10:55 Received: 04/16/04 15:30										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040892	04/22/04	04/22/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	2.69	0.147	0.200	"	"	"	"	"	"	
Toluene	0.670	0.155	0.500	"	"	"	"	"	"	
Ethylbenzene	29.3	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	8.65	0.262	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	15.6	0.0989	2.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.440	0.0884	1.00	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	1.73	0.157	0.500	"	"	"	"	"	"	
Isopropylbenzene	7.78	0.107	2.00	"	"	"	"	"	"	
n-Propylbenzene	23.0	0.138	0.500	"	"	"	"	"	"	
Surrogate: 4-BFB	86.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	92.5 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	92.0 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	85.5 %		80-120			"	"	"	"	

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-18(A) (P4D0600-09) Water Sampled: 04/15/04 10:00 Received: 04/16/04 15:30										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040892	04/22/04	04/22/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	3.20	0.147	0.200	"	"	"	"	"	"	
Toluene	0.680	0.155	0.500	"	"	"	"	"	"	
Ethylbenzene	0.260	0.110	0.500	"	"	"	"	"	"	J
Xylenes (total)	0.820	0.262	1.00	"	"	"	"	"	"	J
Methyl tert-butyl ether	0.200	0.0865	2.00	"	"	"	"	"	"	J
Naphthalene	0.990	0.0989	2.00	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	0.170	0.0884	1.00	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	2.09	0.107	2.00	"	"	"	"	"	"	
n-Propylbenzene	1.60	0.138	0.500	"	"	"	"	"	"	
Surrogate: 4-BFB	88.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	93.5 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	94.0 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	86.0 %		80-120			"	"	"	"	
BM-23(A) (P4D0600-10) Water Sampled: 04/15/04 12:01 Received: 04/16/04 15:30										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040892	04/22/04	04/22/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	2.75	0.147	0.200	"	"	"	"	"	"	
Toluene	0.940	0.155	0.500	"	"	"	"	"	"	
Ethylbenzene	12.1	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	10.9	0.262	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	7.47	0.0989	2.00	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	1.89	0.0884	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.570	0.157	0.500	"	"	"	"	"	"	
Isopropylbenzene	2.64	0.107	2.00	"	"	"	"	"	"	
n-Propylbenzene	5.04	0.138	0.500	"	"	"	"	"	"	
Surrogate: 4-BFB	82.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	93.0 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	91.5 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	84.0 %		80-120			"	"	"	"	

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-16(A) (P4D0600-11) Water Sampled: 04/15/04 08:50 Received: 04/16/04 15:30										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040892	04/22/04	04/22/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	11.7	0.147	0.200	"	"	"	"	"	"	
Toluene	0.710	0.155	0.500	"	"	"	"	"	"	
Ethylbenzene	1.10	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	0.340	0.262	1.00	"	"	"	"	"	"	J
Methyl tert-butyl ether	0.380	0.0865	2.00	"	"	"	"	"	"	J
Naphthalene	0.860	0.0989	2.00	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	ND	0.0884	1.00	"	"	"	"	"	"	U
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	28.8	0.107	2.00	"	"	"	"	"	"	
n-Propylbenzene	29.9	0.138	0.500	"	"	"	"	"	"	
Surrogate: 4-BFB	89.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	92.5 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	93.5 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	84.0 %		80-120			"	"	"	"	
MW-1(F) (P4D0600-12) Water Sampled: 04/15/04 07:30 Received: 04/16/04 15:30										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040892	04/22/04	04/22/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	0.660	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	0.920	0.262	1.00	"	"	"	"	"	"	J
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	0.720	0.0989	2.00	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	0.360	0.0884	1.00	"	"	"	"	"	"	J
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	0.190	0.107	2.00	"	"	"	"	"	"	J
n-Propylbenzene	0.260	0.138	0.500	"	"	"	"	"	"	J
Surrogate: 4-BFB	84.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	91.0 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	88.5 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	85.0 %		80-120			"	"	"	"	

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-22(A) (P4D0600-13RE1) Water Sampled: 04/15/04 14:35 Received: 04/16/04 15:30										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4041006	04/26/04	04/26/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	ND	0.155	0.500	"	"	"	"	"	"	U
Ethylbenzene	0.190	0.110	0.500	"	"	"	"	"	"	J
Xylenes (total)	ND	0.262	1.00	"	"	"	"	"	"	U
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	0.320	0.0989	2.00	"	"	"	"	"	"	J
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
<i>Surrogate: 4-BFB</i>	85.0 %		75-120			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	98.0 %		77-129			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	97.5 %		80-121			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	76.5 %		80-120			"	"	"	"	S-09
MW-19(A) (P4D0600-14RE1) Water Sampled: 04/15/04 15:45 Received: 04/16/04 15:30										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4041006	04/26/04	04/26/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	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
<i>Surrogate: 4-BFB</i>	91.0 %		75-120			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	100 %		77-129			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	102 %		80-121			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	82.5 %		80-120			"	"	"	"	

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-20(A) (P4D0600-15RE1) Water Sampled: 04/15/04 16:42 Received: 04/16/04 15:30										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4041073	04/27/04	04/27/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	1.77	0.147	0.200	"	"	"	"	"	"	
Toluene	0.250	0.155	0.500	"	"	"	"	"	"	J
Ethylbenzene	0.110	0.110	0.500	"	"	"	"	"	"	J
Xylenes (total)	1.08	0.262	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	1.94	0.0989	2.00	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	5.97	0.0884	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.590	0.157	0.500	"	"	"	"	"	"	
Isopropylbenzene	1.16	0.107	2.00	"	"	"	"	"	"	J
n-Propylbenzene	2.02	0.138	0.500	"	"	"	"	"	"	
Surrogate: 4-BFB	89.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	95.5 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	95.5 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	87.0 %		80-120			"	"	"	"	
MW-12(A) (P4D0600-16) Water Sampled: 04/16/04 07:25 Received: 04/16/04 15:30										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040892	04/22/04	04/22/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	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	85.5 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	91.5 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	89.5 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	89.5 %		80-120			"	"	"	"	

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

**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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MW-14(A) (P4D0600-17RE1) Water Sampled: 04/16/04 08:15 Received: 04/16/04 15:30

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4041073	04/27/04	04/27/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	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	91.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	95.5 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	93.5 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	83.0 %		80-120			"	"	"	"	

MW-13(A) (P4D0600-18) Water Sampled: 04/16/04 09:27 Received: 04/16/04 15:30

1,2-Dibromoethane	ND	3.74	10.0	ug/l	20	4040892	04/22/04	04/22/04	EPA 8260B	D, U
1,2-Dichloroethane	ND	2.84	10.0	"	"	"	"	"	"	D, U
Benzene	564	2.94	4.00	"	"	"	"	"	"	D
Toluene	58.0	3.10	10.0	"	"	"	"	"	"	D
Ethylbenzene	2190	2.20	10.0	"	"	"	"	"	"	D
Xylenes (total)	110	5.24	20.0	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	1.73	40.0	"	"	"	"	"	"	D, U
Naphthalene	282	1.98	40.0	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	31.0	1.77	20.0	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	41.8	3.14	10.0	"	"	"	"	"	"	D
Isopropylbenzene	233	2.14	40.0	"	"	"	"	"	"	D
n-Propylbenzene	657	2.76	10.0	"	"	"	"	"	"	D
Surrogate: 4-BFB	92.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	98.5 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	95.0 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	94.5 %		80-120			"	"	"	"	

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: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 14:00

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-21(A) (P4D0600-19) Water Sampled: 04/16/04 11:15 Received: 04/16/04 15:30										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040892	04/22/04	04/22/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	0.700	0.147	0.200	"	"	"	"	"	"	
Toluene	0.520	0.155	0.500	"	"	"	"	"	"	
Ethylbenzene	2.51	0.110	0.500	"	"	"	"	"	"	
Xylenes (total)	5.41	0.262	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.0865	2.00	"	"	"	"	"	"	U
Naphthalene	1.11	0.0989	2.00	"	"	"	"	"	"	J
1,2,4-Trimethylbenzene	1.37	0.0884	1.00	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.157	0.500	"	"	"	"	"	"	U
Isopropylbenzene	2.59	0.107	2.00	"	"	"	"	"	"	
n-Propylbenzene	3.97	0.138	0.500	"	"	"	"	"	"	
<i>Surrogate: 4-BFB</i>	95.0 %		75-120			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	99.0 %		77-129			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	99.5 %		80-121			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	87.0 %		80-120			"	"	"	"	
Trip Blank (P4D0600-20) Water Sampled: 04/16/04 11:15 Received: 04/16/04 15:30										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040892	04/22/04	04/22/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	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
<i>Surrogate: 4-BFB</i>	79.5 %		75-120			"	"	"	"	
<i>Surrogate: 1,2-DCA-d4</i>	91.0 %		77-129			"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>	90.5 %		80-121			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	89.0 %		80-120			"	"	"	"	

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-28(A) (P4D0600-01) Water Sampled: 04/14/04 16:12 Received: 04/16/04 15:30										
Acenaphthene	0.0555	0.0500	0.0500	ug/l	1	4040773	04/20/04	04/22/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	0.0763	0.0500	0.0500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	66.9	5.00	5.00	"	100	"	"	04/28/04	"	D
Phenanthrene	0.0564	0.0500	0.0500	"	1	"	"	04/22/04	"	
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	42.4 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	55.5 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	27.8 %		10-150			"	"	"	"	

MW-24(A) (P4D0600-02) Water Sampled: 04/14/04 15:00 Received: 04/16/04 15:30

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4040773	04/20/04	04/22/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	20.8	5.00	5.00	"	100	"	"	04/28/04	"	D
Phenanthrene	ND	0.0500	0.0500	"	1	"	"	04/22/04	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

**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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MW-24(A) (P4D0600-02) Water Sampled: 04/14/04 15:00 Received: 04/16/04 15:30

Surrogate: Fluorene-d10	51.3 %		25-150			4040773	04/20/04	04/22/04	EPA 8270m	
Surrogate: Pyrene-d10	71.2 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	44.1 %		10-150			"	"	"	"	

MW-26(A) (P4D0600-03) Water Sampled: 04/14/04 14:14 Received: 04/16/04 15:30

Acenaphthene	0.0548	0.0500	0.0500	ug/l	1	4040773	04/20/04	04/22/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	0.0595	0.0500	0.0500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	464	10.0	10.0	"	200	"	"	04/28/04	"	D
Phenanthrene	ND	0.0500	0.0500	"	1	"	"	04/22/04	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	60.2 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	69.5 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	44.5 %		10-150			"	"	"	"	

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-2(M) (P4D0600-05) Water Sampled: 04/14/04 17:30 Received: 04/16/04 15:30 R-05										
Acenaphthene	0.644	0.500	0.500	ug/l	10	4040773	04/20/04	04/22/04	EPA 8270m	D
Acenaphthylene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Anthracene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Benzo (a) anthracene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Benzo (a) pyrene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Benzo (b) fluoranthene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Benzo (ghi) perylene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Benzo (k) fluoranthene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Chrysene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Dibenzo (a,h) anthracene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Fluoranthene	ND	0.500	0.500	"	"	"	"	"	"	D, U
Fluorene	0.880	0.500	0.500	"	"	"	"	"	"	D
Indeno (1,2,3-cd) pyrene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Naphthalene	143	5.00	5.00	"	100	"	"	04/28/04	"	D
Phenanthrene	0.748	0.500	0.500	"	10	"	"	04/22/04	"	D
Pyrene	ND	0.500	0.500	"	"	"	"	"	"	D, U

<i>Surrogate: Fluorene-d10</i>	34.8 %		25-150			"	"	"	"	D
<i>Surrogate: Pyrene-d10</i>	50.8 %		23-150			"	"	"	"	D
<i>Surrogate: Benzo (a) pyrene-d12</i>	34.0 %		10-150			"	"	"	"	D

MW-23(A) (P4D0600-07) Water Sampled: 04/15/04 12:01 Received: 04/16/04 15:30										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4040773	04/20/04	04/22/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	1.14	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

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: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 14:00

**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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MW-23(A) (P4D0600-07) Water Sampled: 04/15/04 12:01 Received: 04/16/04 15:30

Pyrene	ND	0.0500	0.0500	ug/l	1	4040773	04/20/04	04/22/04	EPA 8270m	U
Surrogate: Fluorene-d10	57.2 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	78.4 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	66.5 %		10-150			"	"	"	"	

MW-17(A) (P4D0600-08) Water Sampled: 04/15/04 10:55 Received: 04/16/04 15:30

Acenaphthene	0.0532	0.0500	0.0500	ug/l	1	4040773	04/20/04	04/22/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	5.04	0.500	0.500	"	10	"	"	04/28/04	"	D
Phenanthrene	ND	0.0500	0.0500	"	1	"	"	04/22/04	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	56.4 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	81.8 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	55.5 %		10-150			"	"	"	"	

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-18(A) (P4D0600-09) Water Sampled: 04/15/04 10:00 Received: 04/16/04 15:30										
Acenaphthene	0.312	0.0500	0.0500	ug/l	1	4040773	04/20/04	04/22/04	EPA 8270m	
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	0.197	0.0500	0.0500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.119	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	57.2 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	75.8 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	54.7 %		10-150			"	"	"	"	

BM-23(A) (P4D0600-10) Water Sampled: 04/15/04 12:01 Received: 04/16/04 15:30

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4040773	04/20/04	04/22/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	1.21	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

North Creek Analytical - Portland

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Joy D. Chang, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network



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EnviroLogic Resources, Inc.
 P.O. Box 80762
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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 14:00

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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BM-23(A) (P4D0600-10) Water Sampled: 04/15/04 12:01 Received: 04/16/04 15:30

Surrogate: Fluorene-d10	47.5 %		25-150			4040773	04/20/04	04/22/04	EPA 8270m	
Surrogate: Pyrene-d10	72.5 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	57.2 %		10-150			"	"	"	"	

MW-16(A) (P4D0600-11) Water Sampled: 04/15/04 08:50 Received: 04/16/04 15:30

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4040773	04/20/04	04/22/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.450	0.450	"	"	"	"	"	"	R-03, U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	48.7 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	75.8 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	48.7 %		10-150			"	"	"	"	

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1(F) (P4D0600-12) Water Sampled: 04/15/04 07:30 Received: 04/16/04 15:30										
Acenaphthene	0.112	0.0500	0.0500	ug/l	1	4040773	04/20/04	04/23/04	EPA 8270m	
Acenaphthylene	0.0544	0.0500	0.0500	"	"	"	"	"	"	
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	0.134	0.0500	0.0500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	2.30	2.30	"	"	"	"	"	"	R-03, U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	45.3 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	74.2 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	38.0 %		10-150			"	"	"	"	

MW-22(A) (P4D0600-13) Water Sampled: 04/15/04 14:35 Received: 04/16/04 15:30

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4040773	04/20/04	04/23/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.0757	0.0500	0.0500	"	"	"	"	"	"	
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

North Creek Analytical - Portland

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Joy D. Chang, Project 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 RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 14:00

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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MW-22(A) (P4D0600-13) Water Sampled: 04/15/04 14:35 Received: 04/16/04 15:30

Surrogate: Fluorene-d10	55.9 %		25-150			4040773	04/20/04	04/23/04	EPA 8270m	
Surrogate: Pyrene-d10	74.2 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	56.8 %		10-150			"	"	"	"	

MW-19(A) (P4D0600-14) Water Sampled: 04/15/04 15:45 Received: 04/16/04 15:30

Acenaphthene	ND	0.0500	0.0500	ug/l	1	4040773	04/20/04	04/23/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.128	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	59.3 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	75.0 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	58.9 %		10-150			"	"	"	"	

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-20(A) (P4D0600-15) Water Sampled: 04/15/04 16:42 Received: 04/16/04 15:30										
Acenaphthene	0.184	0.100	0.100	ug/l	2	4040773	04/20/04	04/28/04	EPA 8270m	D
Acenaphthylene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Anthracene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Benzo (a) anthracene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Benzo (a) pyrene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Benzo (b) fluoranthene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Benzo (ghi) perylene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Benzo (k) fluoranthene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Chrysene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Dibenzo (a,h) anthracene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Fluoranthene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Fluorene	0.312	0.100	0.100	"	"	"	"	"	"	D
Indeno (1,2,3-cd) pyrene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Naphthalene	ND	0.800	0.800	"	"	"	"	"	"	R-03, D, U
Phenanthrene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Pyrene	ND	0.100	0.100	"	"	"	"	"	"	D, U

Surrogate: Fluorene-d10	58.5 %		25-150			"	"	"	"	D
Surrogate: Pyrene-d10	66.1 %		23-150			"	"	"	"	D
Surrogate: Benzo (a) pyrene-d12	46.2 %		10-150			"	"	"	"	D

MW-12(A) (P4D0600-16) Water Sampled: 04/16/04 07:25 Received: 04/16/04 15:30										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4040773	04/20/04	04/23/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	0.0873	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U

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: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 14:00

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-12(A) (P4D0600-16) Water Sampled: 04/16/04 07:25 Received: 04/16/04 15:30										
Pyrene	ND	0.0500	0.0500	ug/l	1	4040773	04/20/04	04/23/04	EPA 8270m	U
Surrogate: Fluorene-d10	57.2 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	72.9 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	60.6 %		10-150			"	"	"	"	
MW-14(A) (P4D0600-17) Water Sampled: 04/16/04 08:15 Received: 04/16/04 15:30										
Acenaphthene	ND	0.0500	0.0500	ug/l	1	4040773	04/20/04	04/23/04	EPA 8270m	U
Acenaphthylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Anthracene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Benzo (ghi) perylene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Chrysene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Fluoranthene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Fluorene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"	"	"	"	"	"	U
Naphthalene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Phenanthrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Pyrene	ND	0.0500	0.0500	"	"	"	"	"	"	U
Surrogate: Fluorene-d10	58.5 %		25-150			"	"	"	"	
Surrogate: Pyrene-d10	75.8 %		23-150			"	"	"	"	
Surrogate: Benzo (a) pyrene-d12	67.8 %		10-150			"	"	"	"	

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-13(A) (P4D0600-18) Water Sampled: 04/16/04 09:27 Received: 04/16/04 15:30 R-05										
Acenaphthene	ND	0.100	0.100	ug/l	2	4040773	04/20/04	04/28/04	EPA 8270m	D, U
Acenaphthylene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Anthracene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Benzo (a) anthracene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Benzo (a) pyrene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Benzo (b) fluoranthene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Benzo (ghi) perylene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Benzo (k) fluoranthene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Chrysene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Dibenzo (a,h) anthracene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Fluoranthene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Fluorene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Indeno (1,2,3-cd) pyrene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Naphthalene	94.5	10.0	10.0	"	200	"	"	04/28/04	"	D
Phenanthrene	ND	0.100	0.100	"	2	"	"	04/28/04	"	D, U
Pyrene	ND	0.100	0.100	"	"	"	"	"	"	D, U

Surrogate: Fluorene-d10	31.7 %		25-150			"	"	"	"	D
Surrogate: Pyrene-d10	35.2 %		23-150			"	"	"	"	D
Surrogate: Benzo (a) pyrene-d12	32.9 %		10-150			"	"	"	"	D

MW-21(A) (P4D0600-19) Water Sampled: 04/16/04 11:15 Received: 04/16/04 15:30 R-05										
Acenaphthene	ND	0.500	0.500	ug/l	10	4040773	04/20/04	04/23/04	EPA 8270m	R-03, D, U
Acenaphthylene	ND	0.500	0.500	"	"	"	"	"	"	R-03, D, U
Anthracene	ND	0.500	0.500	"	"	"	"	"	"	R-03, D, U
Benzo (a) anthracene	ND	0.0200	0.0200	"	2	"	"	04/28/04	"	D, U
Benzo (a) pyrene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Benzo (b) fluoranthene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Benzo (ghi) perylene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Benzo (k) fluoranthene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Chrysene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Dibenzo (a,h) anthracene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Fluoranthene	ND	0.500	0.500	"	10	"	"	04/23/04	"	R-03, D, U
Fluorene	ND	0.500	0.500	"	"	"	"	"	"	R-03, D, U
Indeno (1,2,3-cd) pyrene	ND	0.0200	0.0200	"	2	"	"	04/28/04	"	D, U
Naphthalene	1.27	0.500	0.500	"	10	"	"	04/23/04	"	D
Phenanthrene	ND	0.500	0.500	"	"	"	"	"	"	R-03, D, U

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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 P.O. Box 80762
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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 14:00

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-21(A) (P4D0600-19) Water										R-05
Sampled: 04/16/04 11:15 Received: 04/16/04 15:30										
Pyrene	ND	0.100	0.100	ug/l	2	4040773	04/20/04	04/28/04	EPA 8270m	D, U
Surrogate: Fluorene-d10	55.9 %		25-150			"	"	04/23/04	"	D
Surrogate: Pyrene-d10	80.9 %		23-150			"	"	04/28/04	"	D
Surrogate: Benzo (a) pyrene-d12	36.5 %		10-150			"	"	"	"	D

North Creek Analytical - Portland

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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 14:00

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 4040739: Prepared 04/19/04 Using EPA 5030B											
Blank (4040739-BLK1)											
Gasoline Range Hydrocarbons	35.2	6.02	80.0	ug/l							J
Surrogate: 4-BFB	42.6			"	50.0		85.2	50-150			
LCS (4040739-BS1)											
Gasoline Range Hydrocarbons	855	6.02	80.0	ug/l	1000		85.5	70-130			
Surrogate: 4-BFB	43.5			"	50.0		87.0	50-150			
LCS Dup (4040739-BSD1)											
Gasoline Range Hydrocarbons	864	6.02	80.0	ug/l	1000		86.4	70-130	1.05	40	
Surrogate: 4-BFB	46.4			"	50.0		92.8	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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

**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 4040703: Prepared 04/19/04 Using EPA 3510 Fuels

Blank (4040703-BLK1)

Diesel Range Organics	ND	0.153	0.250	mg/l							U
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"							U
Surrogate: 1-Chlorooctadecane	0.0789			"	0.0960		82.2	50-150			

LCS (4040703-BS1)

Diesel Range Organics	2.50	0.153	0.250	mg/l	2.50		100	50-150			
Heavy Oil Range Hydrocarbons	1.50	0.286	0.500	"	1.50		100	50-150			
Surrogate: 1-Chlorooctadecane	0.108			"	0.0960		112	50-150			

LCS Dup (4040703-BSD1)

Diesel Range Organics	2.49	0.153	0.250	mg/l	2.50		99.6	50-150	0.401	50	
Heavy Oil Range Hydrocarbons	1.50	0.286	0.500	"	1.50		100	50-150	0.00	50	
Surrogate: 1-Chlorooctadecane	0.108			"	0.0960		112	50-150			

Batch 4040705: Prepared 04/19/04 Using EPA 3510 Fuels

Blank (4040705-BLK1)

Diesel Range Organics	ND	0.153	0.250	mg/l							U
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"							U
Surrogate: 1-Chlorooctadecane	0.0855			"	0.0960		89.1	50-150			

LCS (4040705-BS1)

Diesel Range Organics	2.41	0.153	0.250	mg/l	2.50		96.4	50-150			
Heavy Oil Range Hydrocarbons	1.55	0.286	0.500	"	1.50		103	50-150			
Surrogate: 1-Chlorooctadecane	0.102			"	0.0960		106	50-150			

LCS Dup (4040705-BSD1)

Diesel Range Organics	2.53	0.153	0.250	mg/l	2.50		101	50-150	4.86	50	
Heavy Oil Range Hydrocarbons	1.73	0.286	0.500	"	1.50		115	50-150	11.0	50	
Surrogate: 1-Chlorooctadecane	0.110			"	0.0960		115	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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

**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 4040705: Prepared 04/19/04 Using EPA 3510 Fuels

Matrix Spike (4040705-MS1)

Source: P4D0600-13

Diesel Range Organics	2.19	0.153	0.250	mg/l	2.36	ND	92.8	50-150			
Heavy Oil Range Hydrocarbons	1.55	0.286	0.500	"	1.42	ND	109	50-150			
<i>Surrogate: 1-Chlorooctadecane</i>	<i>0.0859</i>			"	<i>0.0906</i>		<i>94.8</i>	<i>50-150</i>			

Matrix Spike Dup (4040705-MSD1)

Source: P4D0600-13

Diesel Range Organics	2.28	0.153	0.250	mg/l	2.36	ND	96.6	50-150	4.03	50	
Heavy Oil Range Hydrocarbons	1.71	0.286	0.500	"	1.42	ND	120	50-150	9.82	50	
<i>Surrogate: 1-Chlorooctadecane</i>	<i>0.0912</i>			"	<i>0.0906</i>		<i>101</i>	<i>50-150</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: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 14:00

Total Metals per EPA 200 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 4040841: Prepared 04/21/04 Using EPA 200/3005											
Blank (4040841-BLK1)											
Lead	ND	0.0000870	0.00100	mg/l							U
LCS (4040841-BS1)											
Lead	0.0959	0.0000870	0.00100	mg/l	0.100		95.9	85-115			
LCS Dup (4040841-BSD1)											
Lead	0.0977	0.0000870	0.00100	mg/l	0.100		97.7	85-115	1.86	20	
Duplicate (4040841-DUP1) Source: P4D0600-01											
Lead	0.0968	0.0000870	0.00100	mg/l		0.101			4.25	20	
Matrix Spike (4040841-MS1) Source: P4D0600-13											
Lead	0.104	0.0000870	0.00100	mg/l	0.100	0.00473	99.3	70-130			
Matrix Spike Dup (4040841-MSD1) Source: P4D0600-13											
Lead	0.0960	0.0000870	0.00100	mg/l	0.100	0.00473	91.3	70-130	8.00	20	

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

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 4040892: Prepared 04/22/04 Using EPA 5030B

Blank (4040892-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	0.200	"							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	18.2			"	20.0		91.0	75-120			
Surrogate: 1,2-DCA-d4	19.2			"	20.0		96.0	77-129			
Surrogate: Dibromofluoromethane	19.1			"	20.0		95.5	80-121			
Surrogate: Toluene-d8	19.3			"	20.0		96.5	80-120			

LCS (4040892-BS1)

Benzene	19.6	0.147	0.200	ug/l	20.0		98.0	80-120			
Toluene	19.8	0.155	0.500	"	20.0		99.0	80-124			
Ethylbenzene	19.5	0.110	0.500	"	20.0		97.5	80-120			
Xylenes (total)	58.8	0.262	1.00	"	60.0		98.0	73-124			
Methyl tert-butyl ether	21.7	0.0865	2.00	"	20.0		108	80-129			
Naphthalene	21.8	0.0989	2.00	"	20.0		109	72-149			
Surrogate: 4-BFB	18.9			"	20.0		94.5	75-120			
Surrogate: 1,2-DCA-d4	19.4			"	20.0		97.0	77-129			
Surrogate: Dibromofluoromethane	19.4			"	20.0		97.0	80-121			
Surrogate: Toluene-d8	18.8			"	20.0		94.0	80-120			

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

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 4040892: Prepared 04/22/04 Using EPA 5030B

Matrix Spike (4040892-MS1)

Source: P4D0600-13

Benzene	20.3	0.147	0.200	ug/l	20.0	ND	102	80-124			
Toluene	14.5	0.155	0.500	"	20.0	ND	72.5	79.7-131			Q-02
Ethylbenzene	13.2	0.110	0.500	"	20.0	0.150	65.2	80-124			Q-02
Xylenes (total)	18.7	0.262	1.00	"	60.0	ND	31.2	44.6-154			Q-02
Methyl tert-butyl ether	20.6	0.0865	2.00	"	20.0	ND	103	80-130			
Naphthalene	20.7	0.0989	2.00	"	20.0	ND	104	69-163			
<i>Surrogate: 4-BFB</i>	<i>17.4</i>			"	<i>20.0</i>		<i>87.0</i>	<i>75-120</i>			
<i>Surrogate: 1,2-DCA-d4</i>	<i>19.1</i>			"	<i>20.0</i>		<i>95.5</i>	<i>77-129</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>19.6</i>			"	<i>20.0</i>		<i>98.0</i>	<i>80-121</i>			
<i>Surrogate: Toluene-d8</i>	<i>16.2</i>			"	<i>20.0</i>		<i>81.0</i>	<i>80-120</i>			

Matrix Spike Dup (4040892-MSD1)

Source: P4D0600-13

Benzene	19.8	0.147	0.200	ug/l	20.0	ND	99.0	80-124	2.49	25	
Toluene	15.3	0.155	0.500	"	20.0	ND	76.5	79.7-131	5.37	25	Q-02
Ethylbenzene	15.7	0.110	0.500	"	20.0	0.150	77.8	80-124	17.3	25	Q-02
Xylenes (total)	30.4	0.262	1.00	"	60.0	ND	50.7	44.6-154	47.7	25	Q-02
Methyl tert-butyl ether	20.1	0.0865	2.00	"	20.0	ND	100	80-130	2.46	25	
Naphthalene	20.0	0.0989	2.00	"	20.0	ND	100	69-163	3.44	25	
<i>Surrogate: 4-BFB</i>	<i>19.2</i>			"	<i>20.0</i>		<i>96.0</i>	<i>75-120</i>			
<i>Surrogate: 1,2-DCA-d4</i>	<i>19.1</i>			"	<i>20.0</i>		<i>95.5</i>	<i>77-129</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>19.9</i>			"	<i>20.0</i>		<i>99.5</i>	<i>80-121</i>			
<i>Surrogate: Toluene-d8</i>	<i>16.9</i>			"	<i>20.0</i>		<i>84.5</i>	<i>80-120</i>			

Batch 4041006: Prepared 04/26/04 Using EPA 5030B

Blank (4041006-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	0.200	"							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

North Creek Analytical - Portland

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Joy D. Chang, Project 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 RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

**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 4041006: Prepared 04/26/04 Using EPA 5030B

Blank (4041006-BLK1)

Naphthalene	ND	0.0989	2.00	ug/l							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
<i>Surrogate: 4-BFB</i>	19.3			"	20.0		96.5	75-120			
<i>Surrogate: 1,2-DCA-d4</i>	19.0			"	20.0		95.0	77-129			
<i>Surrogate: Dibromofluoromethane</i>	19.0			"	20.0		95.0	80-121			
<i>Surrogate: Toluene-d8</i>	19.6			"	20.0		98.0	80-120			

LCS (4041006-BS1)

Benzene	19.3	0.147	0.200	ug/l	20.0		96.5	80-120			
Toluene	19.8	0.155	0.500	"	20.0		99.0	80-124			
Ethylbenzene	18.9	0.110	0.500	"	20.0		94.5	80-120			
Xylenes (total)	55.6	0.262	1.00	"	60.0		92.7	73-124			
Methyl tert-butyl ether	20.2	0.0865	2.00	"	20.0		101	80-129			
Naphthalene	20.4	0.0989	2.00	"	20.0		102	72-149			
<i>Surrogate: 4-BFB</i>	18.5			"	20.0		92.5	75-120			
<i>Surrogate: 1,2-DCA-d4</i>	18.8			"	20.0		94.0	77-129			
<i>Surrogate: Dibromofluoromethane</i>	19.3			"	20.0		96.5	80-121			
<i>Surrogate: Toluene-d8</i>	19.4			"	20.0		97.0	80-120			

Matrix Spike (4041006-MS1)

Source: P4D0762-02

Benzene	20.1	0.147	0.200	ug/l	20.0	0.170	99.6	80-124			
Toluene	18.6	0.155	0.500	"	20.0	ND	93.0	79.7-131			
Ethylbenzene	19.1	0.110	0.500	"	20.0	1.01	90.4	80-124			
Xylenes (total)	47.8	0.262	1.00	"	60.0	0.360	79.1	44.6-154			
Methyl tert-butyl ether	44.6	0.0865	2.00	"	20.0	27.6	85.0	80-130			
Naphthalene	21.7	0.0989	2.00	"	20.0	3.36	91.7	69-163			
<i>Surrogate: 4-BFB</i>	18.3			"	20.0		91.5	75-120			
<i>Surrogate: 1,2-DCA-d4</i>	19.0			"	20.0		95.0	77-129			
<i>Surrogate: Dibromofluoromethane</i>	20.5			"	20.0		102	80-121			

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

**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 4041006: Prepared 04/26/04 Using EPA 5030B

Matrix Spike (4041006-MS1)

Source: P4D0762-02

Surrogate: Toluene-d8 19.0 ug/l 20.0 95.0 80-120

Matrix Spike Dup (4041006-MSD1)

Source: P4D0762-02

Benzene	20.0	0.147	0.200	ug/l	20.0	0.170	99.2	80-124	0.499	25	
Toluene	18.3	0.155	0.500	"	20.0	ND	91.5	79.7-131	1.63	25	
Ethylbenzene	18.7	0.110	0.500	"	20.0	1.01	88.4	80-124	2.12	25	
Xylenes (total)	44.0	0.262	1.00	"	60.0	0.360	72.7	44.6-154	8.28	25	
Methyl tert-butyl ether	48.2	0.0865	2.00	"	20.0	27.6	103	80-130	7.76	25	
Naphthalene	23.4	0.0989	2.00	"	20.0	3.36	100	69-163	7.54	25	
Surrogate: 4-BFB	18.1			"	20.0		90.5	75-120			
Surrogate: 1,2-DCA-d4	18.8			"	20.0		94.0	77-129			
Surrogate: Dibromofluoromethane	19.5			"	20.0		97.5	80-121			
Surrogate: Toluene-d8	18.7			"	20.0		93.5	80-120			

Batch 4041073: Prepared 04/27/04 Using EPA 5030B

Blank (4041073-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	0.200	"							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	18.0			"	20.0		90.0	75-120			
Surrogate: 1,2-DCA-d4	18.7			"	20.0		93.5	77-129			
Surrogate: Dibromofluoromethane	18.6			"	20.0		93.0	80-121			
Surrogate: Toluene-d8	19.3			"	20.0		96.5	80-120			

North Creek Analytical - Portland

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Joy D. Chang, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network



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907.563.9200 fax 907.563.9210

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

Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

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
---------	--------	-----	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 4041073: Prepared 04/27/04 Using EPA 5030B

LCS (4041073-BS1)

Benzene	19.4	0.147	0.200	ug/l	20.0		97.0	80-120			
Toluene	19.7	0.155	0.500	"	20.0		98.5	80-124			
Ethylbenzene	18.8	0.110	0.500	"	20.0		94.0	80-120			
Xylenes (total)	55.6	0.262	1.00	"	60.0		92.7	73-124			
Methyl tert-butyl ether	18.9	0.0865	2.00	"	20.0		94.5	80-129			
Naphthalene	18.2	0.0989	2.00	"	20.0		91.0	72-149			
Surrogate: 4-BFB	18.8			"	20.0		94.0	75-120			
Surrogate: 1,2-DCA-d4	18.1			"	20.0		90.5	77-129			
Surrogate: Dibromofluoromethane	18.7			"	20.0		93.5	80-121			
Surrogate: Toluene-d8	19.2			"	20.0		96.0	80-120			

Matrix Spike (4041073-MS1)

Source: P4D0840-01

Benzene	20.3	0.147	0.200	ug/l	20.0	ND	102	80-124			
Toluene	20.4	0.155	0.500	"	20.0	ND	102	79.7-131			
Ethylbenzene	19.9	0.110	0.500	"	20.0	ND	99.5	80-124			
Xylenes (total)	58.6	0.262	1.00	"	60.0	ND	97.7	44.6-154			
Methyl tert-butyl ether	19.6	0.0865	2.00	"	20.0	ND	98.0	80-130			
Naphthalene	20.4	0.0989	2.00	"	20.0	ND	102	69-163			
Surrogate: 4-BFB	19.1			"	20.0		95.5	75-120			
Surrogate: 1,2-DCA-d4	19.4			"	20.0		97.0	77-129			
Surrogate: Dibromofluoromethane	19.4			"	20.0		97.0	80-121			
Surrogate: Toluene-d8	19.8			"	20.0		99.0	80-120			

Matrix Spike Dup (4041073-MSD1)

Source: P4D0840-01

Benzene	20.2	0.147	0.200	ug/l	20.0	ND	101	80-124	0.494	25	
Toluene	20.2	0.155	0.500	"	20.0	ND	101	79.7-131	0.985	25	
Ethylbenzene	19.6	0.110	0.500	"	20.0	ND	98.0	80-124	1.52	25	
Xylenes (total)	57.7	0.262	1.00	"	60.0	ND	96.2	44.6-154	1.55	25	
Methyl tert-butyl ether	19.4	0.0865	2.00	"	20.0	ND	97.0	80-130	1.03	25	
Naphthalene	19.4	0.0989	2.00	"	20.0	ND	97.0	69-163	5.03	25	
Surrogate: 4-BFB	18.4			"	20.0		92.0	75-120			
Surrogate: 1,2-DCA-d4	19.0			"	20.0		95.0	77-129			

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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 907.563.9200 fax 907.563.9210

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

Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 14:00

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 4041073: Prepared 04/27/04 Using EPA 5030B

Matrix Spike Dup (4041073-MSD1)

Source: P4D0840-01

Surrogate: Dibromofluoromethane	18.7			ug/l	20.0		93.5	80-121			
Surrogate: Toluene-d8	19.3			"	20.0		96.5	80-120			

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

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 4040773: Prepared 04/20/04 Using EPA 3520/600 Series

Blank (4040773-BLK1)

Acenaphthene	ND	0.0500	0.0500	ug/l							U
Acenaphthylene	ND	0.0500	0.0500	"							U
Anthracene	ND	0.0500	0.0500	"							U
Benzo (a) anthracene	ND	0.0100	0.0100	"							U
Benzo (a) pyrene	ND	0.0100	0.0100	"							U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"							U
Benzo (ghi) perylene	ND	0.0500	0.0500	"							U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"							U
Chrysene	ND	0.0100	0.0100	"							U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"							U
Fluoranthene	ND	0.0500	0.0500	"							U
Fluorene	ND	0.0500	0.0500	"							U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"							U
Naphthalene	ND	0.0500	0.0500	"							U
Phenanthrene	ND	0.0500	0.0500	"							U
Pyrene	ND	0.0500	0.0500	"							U
Surrogate: Fluorene-d10	0.922			"	2.50		36.9	25-150			
Surrogate: Pyrene-d10	1.25			"	2.50		50.0	23-150			
Surrogate: Benzo (a) pyrene-d12	1.34			"	2.50		53.6	10-150			

LCS (4040773-BS1)

Acenaphthene	1.81	0.0500	0.0500	ug/l	2.50		72.4	26-150			
Benzo (a) pyrene	1.85	0.0100	0.0100	"	2.50		74.0	38-150			
Pyrene	1.94	0.0500	0.0500	"	2.50		77.6	33-150			
Surrogate: Fluorene-d10	1.73			"	2.50		69.2	25-150			
Surrogate: Pyrene-d10	1.87			"	2.50		74.8	23-150			
Surrogate: Benzo (a) pyrene-d12	1.76			"	2.50		70.4	10-150			

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

**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 4040773: Prepared 04/20/04 Using EPA 3520/600 Series

Matrix Spike (4040773-MS1)

Source: P4D0600-13

Acenaphthene	1.67	0.0500	0.0500	ug/l	2.36	ND	70.8	26-135			
Benzo (a) pyrene	1.70	0.0100	0.0100	"	2.36	ND	72.0	38-137			
Pyrene	1.80	0.0500	0.0500	"	2.36	ND	76.3	33-133			
<i>Surrogate: Fluorene-d10</i>	<i>1.62</i>			"	<i>2.36</i>		<i>68.6</i>	<i>25-150</i>			
<i>Surrogate: Pyrene-d10</i>	<i>1.77</i>			"	<i>2.36</i>		<i>75.0</i>	<i>23-150</i>			
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>1.66</i>			"	<i>2.36</i>		<i>70.3</i>	<i>10-150</i>			

Matrix Spike Dup (4040773-MSD1)

Source: P4D0600-13

Acenaphthene	1.47	0.0500	0.0500	ug/l	2.36	ND	62.3	26-135	12.7	60	
Benzo (a) pyrene	1.50	0.0100	0.0100	"	2.36	ND	63.6	38-137	12.5	60	
Pyrene	1.72	0.0500	0.0500	"	2.36	ND	72.9	33-133	4.55	60	
<i>Surrogate: Fluorene-d10</i>	<i>1.41</i>			"	<i>2.36</i>		<i>59.7</i>	<i>25-150</i>			
<i>Surrogate: Pyrene-d10</i>	<i>1.64</i>			"	<i>2.36</i>		<i>69.5</i>	<i>23-150</i>			
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>1.45</i>			"	<i>2.36</i>		<i>61.4</i>	<i>10-150</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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:00

Notes and Definitions

- A-01 Detected hydrocarbons appear to be mainly due to overlap of gasoline although there may be a trace of weathered diesel present.
- D Data reported from a preparation or analytical dilution.
- D-08 Detected hydrocarbons in the diesel range appear to be due to overlap of gasoline range hydrocarbons.
- 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.
- Q-02 The matrix spike recovery, and/or RPD, for this QC sample is outside of established control limits due to sample matrix interference.
- 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-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, Project Manager

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 20332 Empire Avenue, Suite F-1, Bend, OR 97708-5711 (541) 383-9310 FAX 382-7588



ASTORIA AREA-WIDE PETROLEUM SITE CHAIN OF CUSTODY REPORT

Work Order #: **PLTDO600**

CLIENT: **Environmental Resources**
 REPORT TO: **Tom Calabrese**
 ADDRESS: **PO Box 80762 Astoria, OR 97102**
 PHONE: **503-768-5121** FAX: **503-768-5122**

INVOICE TO: **Environmental Resources**
 P.O. NUMBER: **10077-0049**

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses
 10 7 5 4 3 2 1 <1

Petroleum Hydrocarbon Analyses
 STD 5 4 3 2 1 <1

STD OTHER Specify: _____

* Turnaround Requests less than standard may incur Rush Charges.

PROJECT NAME: **Astoria Area-Wide Petro Site RI-1**

PROJECT NUMBER: **10077-0049**

SAMPLED BY: **MNB, NAGS**

REQUESTED ANALYSES

NWTPH-Dx	NWTPH-Gx	8260B RBCA	8270 SIM PAH	RCRA 8 METALS Total	RCRA 8 METALS Dissolved	Total Cations: Na, K, Ca, Mg, Fe, Mn	Chloride 300.0	Sulfate 300.0	AIR/HCO3/CO3 SM2320B	Nitrate/Nitrite 353.2	TOTAL LEADS
----------	----------	------------	--------------	---------------------	-------------------------	--------------------------------------	----------------	---------------	----------------------	-----------------------	-------------

CLIENT SAMPLE IDENTIFICATION	SAMPLE LOCATION	SAMPLING DATE/TIME	NWTPH-Dx	NWTPH-Gx	8260B RBCA	8270 SIM PAH	RCRA 8 METALS Total	RCRA 8 METALS Dissolved	Total Cations: Na, K, Ca, Mg, Fe, Mn	Chloride 300.0	Sulfate 300.0	AIR/HCO3/CO3 SM2320B	Nitrate/Nitrite 353.2	TOTAL LEADS	MATRIX (gw, Soil)	# OF CONT.	COMMENTS
1 MW-38(A)	MW-38(A)	4/14/04 / 16:13	✓	✓	✓	✓								✓	GW	11	
2 MW-24(A)	MW-24(A)	4/14/04 / 15:00	✓	✓	✓	✓								✓	GW	11	
3 MW-26(A)	MW-26(A)	4/14/04 / 14:14	✓	✓	✓	✓								✓	GW	11	
4 EQUIP BLANK	EQUIPMENT BLANK	4/14/04 / 14:25			✓										W	3	
5 MW-2(M)	MW-2(M)	4/14/04 / 17:30	✓	✓	✓	✓								✓	GW	11	
6 TRIP BLANK	TRIP BLANK	4/15/04 / 10:00			✓										W	1	
7 MW-23(A)	MW-23(A)	4/15/04 / 12:01	✓	✓	✓	✓								✓	GW	11	
8 MW-17(A)	MW-17(A)	4/15/04 / 10:55	✓	✓	✓	✓								✓	GW	11	
9 MW-18(A)	MW-18(A)	4/15/04 / 10:00	✓	✓	✓	✓								✓	GW	11	
10 BM-23(A)	BM-23(A)	4/15/04 / 12:01	✓	✓	✓	✓								✓	GW	11	
11 MW-16(A)	MW-16(A)	4/15/04 / 8:50	✓	✓		✓								✓	GW	11	
12 MW-1(F)	MW-1(F)	4/15/04 / 7:30	✓	✓	✓	✓								✓	GW	11	
13 MW-22(A)	MW-22(A)	4/15/04 / 14:35	✓	✓	✓	✓								✓	GW	11+	MS/MSD
14 MW-19(A)	MW-19(A)	4/15/04 / 15:15	✓	✓	✓	✓								✓	GW	11	
15 MW-20(A)	MW-20(A)	4/15/04 / 16:40	✓	✓	✓	✓								✓	GW	11	

RELINQUISHED BY: **April B...**

PRINT NAME: **Morgan B...**

RELINQUISHED BY: **Paul...**

PRINT NAME: **Paul...**

ADDITIONAL REMARKS:

FIRM: **Environmental Resources**

DATE: **4/16/04**
 TIME: **13:30**
 DATE: **4/16/04**
 TIME: **15:30**

RECEIVED BY: **Paul...**
 PRINT NAME: **Paul...**
 RECEIVED BY: **Paul...**
 PRINT NAME: **Paul...**

DATE: **4/16/04**
 TIME: **13:26**
 DATE: **4/16/04**
 TIME: **15:30**

1.5, 4.8, 1.7, 1.5, 1.0, 0.0



ASTORIA AREA-WIDE PETROLEUM SITE CHAIN OF CUSTODY REPORT

Work Order #: **P4D0600**

CLIENT: Environmental Resources
 REPORT TO: Tom Lambert E-mail: @hrdodge.com
 ADDRESS: PO BOX 80762
Portland, OR 97280
 PHONE: 503-768-5131 FAX: 503-768-5132

INVOICE TO: Environmental Resources
 P.O. NUMBER: 10077.004

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses
 10 7 5 4 3 2 1 <1

Petroleum Hydrocarbon Analyses
 STD 5 4 3 2 1 <1

STD OTHER Specify: _____

* Turnaround Requests less than standard may incur Rush Charges.

PROJECT NAME: Astoria Area-Wide Petro Site RI-1
 PROJECT NUMBER: 10077.004
 SAMPLED BY: MNS, NABS

REQUESTED ANALYSES

NWTFHdx	NWTFHGx	8260B RBCA	8270 SIM PAH	RCRA 8 METALS Total	RCRA 8 METALS Dissolved	Total Cations: Na,K,Ca,Mg,Fe,Mn	Chloride 300.0	Sulfate 300.0	Al/HCO3/CO3 SM2320B	Nitrate/Nitrite 353.2	TOTAL LEAD
---------	---------	------------	--------------	---------------------	-------------------------	---------------------------------	----------------	---------------	---------------------	-----------------------	------------

LOCATOR ID	SAMPLE ID	SAMPLING DATE/TIME	NWTFHdx	NWTFHGx	8260B RBCA	8270 SIM PAH	RCRA 8 METALS Total	RCRA 8 METALS Dissolved	Total Cations: Na,K,Ca,Mg,Fe,Mn	Chloride 300.0	Sulfate 300.0	Al/HCO3/CO3 SM2320B	Nitrate/Nitrite 353.2	TOTAL LEAD	MATRIX (gw, Soil)	# OF CONT.	COMMENTS
1 MW-13(A)	MW-13(A)	4/16/04 7:38	✓	✓	✓	✓								✓	GW	11	
2 MW-14(A)	MW-14(A)	4/16/04 8:15	✓	✓	✓	✓								✓	GW	11	
3 MW-13(A)	MW-13(A)	4/16/04 9:27	✓	✓	✓	✓								✓	GW	11	
4 MW-31(A)	MW-31(A)	4/16/04 11:15	✓	✓	✓	✓								✓	GW	11	
5 TRIP BLANK	TRIP BLANK	4/16/04 11:15			✓										W	1	
6	6	4/16/04	✓	✓	✓	✓								✓	GW	11	MNS
7	7	4/16/04	✓	✓	✓	✓								✓	GW	11	MNS
8		1/1/:															
9		1/1/:															
10		1/1/:															
11		1/1/:															
12		1/1/:															
13		1/1/:															
14		1/1/:															
15		1/1/:															

RELINQUISHED BY: M. J. B. [Signature] FIRM: Environmental Resources DATE: 4-16-04 TIME: 13:26
 PRINT NAME: Mariane Beliancosky
 RECEIVED BY: [Signature] FIRM: NCA DATE: 4/16/04 TIME: 13:26
 PRINT NAME: [Signature]
 RELINQUISHED BY: [Signature] FIRM: Environmental Resources DATE: 4/16/04 TIME: 15:30
 PRINT NAME: [Signature]
 RECEIVED BY: [Signature] FIRM: NCA DATE: 4/16/04 TIME: 15:30
 PRINT NAME: [Signature]

ADDITIONAL REMARKS: 1.5, 4.8, 1.7, 1.5, 1.6 TEMP: 0.4

NORTH CREEK ANALYTICAL COOLER RECEIPT FORM

(Army Corp. compliant)

Client: Environmental

1. Please sign for receipt and opening of 8 cooler or other

By (print) Carrie Finksholz (sign) Carrie Finksholz

2. Date samples received 4/16/04 Date opened: Same or 7 / 1 / 04

3. Delivered by: NCA courier FedEx UPS Courier Client Other

Airbill # if applicable _____ (Put copy of shipping papers in file)

4. There were 0 custody seals present, signed by _____ date 1 / 1 / 04

5. Were the custody seals unbroken and intact at the date and time of arrival? Yes No

6. Was ice used? yes no Type of ice: blue ice gel ice real ice
rec'd 8 coolers - only recorded to temps; the missing 2 temps were in range just not recorded

Temperature (degrees C) 1.9, 4.8 Raytek thermometer none Digi-Therm (probe temperature blank)

7. Are custody papers sealed in a plastic bag and taped inside to lid? Yes No

8. Were custody papers filled out properly (ink, signed, etc.)? Yes No

If "no" please specify: _____

9. Was project identifiable from custody papers? Yes No

Name of project Astma (if applicable)

10. Initial and date for unpacking: KD (initials) date 4/16/04

11. Packing material: bubble wrap/bag styrofoam cardboard other

12. Were samples in bags? Yes No

13. Did all containers indicated on the COC arrive? Yes No

If "no" please indicate which containers were absent _____

14. Were all containers unbroken and labels in good condition? Yes No

If "no" please indicate which containers _____

15. Were all bottle labels complete (ID, date, time, signature, etc.)? Yes No

Do the IDs, times, etc. agree with the COC? Yes No

If "no" please indicate which containers _____

16. Are containers properly preserved for indicated analysis? Yes No

17. Is there adequate volume for the test(s) requested? Yes No

18. If voa vials were submitted, are they free of bubbles? N/A Yes No

19. Log-in phase: Date samples were logged in: 4/16/04 Elm Project # P4D0600

20. Logged in by (print) Kim Davis (sign) Kim Davis

21. Was the project manager notified of status? (Use back of form as a record) Yes No



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03 May 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 04/19/04 08:25. 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: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 14:21

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-29(A)	P4D0629-01	Water	04/16/04 12:22	04/19/04 08:25
Equipment Blank	P4D0629-02	Water	04/16/04 12:57	04/19/04 08:25
MW-40(A)	P4D0629-03	Water	04/16/04 14:20	04/19/04 08:25
Trip Blank	P4D0629-04	Water	04/16/04 12:00	04/19/04 08:25

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:21

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-29(A) (P4D0629-01RE1) Water Sampled: 04/16/04 12:22 Received: 04/19/04 08:25										
Gasoline Range Hydrocarbons	34200	60.2	800	ug/l	10	4041051	04/26/04	04/27/04	NW TPH-G	D
<i>Surrogate: 4-BFB</i>	<i>113 %</i>		<i>50-150</i>			"	"	"	"	
MW-40(A) (P4D0629-03RE1) Water Sampled: 04/16/04 14:20 Received: 04/19/04 08:25										
Gasoline Range Hydrocarbons	41600	60.2	800	ug/l	10	4041051	04/26/04	04/27/04	NW TPH-G	D
<i>Surrogate: 4-BFB</i>	<i>139 %</i>		<i>50-150</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: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 14:21

**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
MW-29(A) (P4D0629-01) Water Sampled: 04/16/04 12:22 Received: 04/19/04 08:25										
Diesel Range Organics	3.66	0.153	0.250	mg/l	1	4040819	04/21/04	04/22/04	NWTPH-Dx	A-01
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"	"	"	"	"	"	U
<i>Surrogate: 1-Chlorooctadecane</i>	80.5 %		50-150			"	"	"	"	
MW-40(A) (P4D0629-03) Water Sampled: 04/16/04 14:20 Received: 04/19/04 08:25										
Diesel Range Organics	8.36	0.153	0.250	mg/l	1	4040819	04/21/04	04/22/04	NWTPH-Dx	A-01
Heavy Oil Range Hydrocarbons	0.689	0.286	0.500	"	"	"	"	"	"	D-15
<i>Surrogate: 1-Chlorooctadecane</i>	113 %		50-150			"	"	"	"	

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: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 14:21

**Total Metals per EPA 200 Series Methods
 North Creek Analytical - Portland**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-29(A) (P4D0629-01) Water Sampled: 04/16/04 12:22 Received: 04/19/04 08:25										
Lead	0.0127	0.0000870	0.00100	mg/l	1	4040838	04/21/04	04/24/04	EPA 200.8	
MW-40(A) (P4D0629-03) Water Sampled: 04/16/04 14:20 Received: 04/19/04 08:25										
Lead	0.0567	0.0000870	0.00100	mg/l	1	4040838	04/21/04	04/24/04	EPA 200.8	

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: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 14:21

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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MW-29(A) (P4D0629-01) Water Sampled: 04/16/04 12:22 Received: 04/19/04 08:25

1,2-Dibromoethane	ND	9.35	25.0	ug/l	50	4040946	04/23/04	04/23/04	EPA 8260B	D, U
1,2-Dichloroethane	ND	7.10	25.0	"	"	"	"	"	"	D, U
Benzene	148	7.35	10.0	"	"	"	"	"	"	D
Toluene	3780	7.75	25.0	"	"	"	"	"	"	D
Ethylbenzene	1840	5.50	25.0	"	"	"	"	"	"	D
Xylenes (total)	8920	13.1	50.0	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	4.32	100	"	"	"	"	"	"	D, U
Naphthalene	1000	4.94	100	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	1770	4.42	50.0	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	396	7.85	25.0	"	"	"	"	"	"	D
Isopropylbenzene	69.5	5.35	100	"	"	"	"	"	"	J, D
n-Propylbenzene	188	6.90	25.0	"	"	"	"	"	"	D

Surrogate: 4-BFB	98.0 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	100 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	99.0 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	100 %		80-120			"	"	"	"	

Equipment Blank (P4D0629-02) Water Sampled: 04/16/04 12:57 Received: 04/19/04 08:25

1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040946	04/23/04	04/23/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	U
Toluene	0.300	0.155	0.500	"	"	"	"	"	"	J
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	103 %		75-120			"	"	"	"	
Surrogate: 1,2-DCA-d4	105 %		77-129			"	"	"	"	
Surrogate: Dibromofluoromethane	106 %		80-121			"	"	"	"	
Surrogate: Toluene-d8	96.5 %		80-120			"	"	"	"	

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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:21

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-40(A) (P4D0629-03) Water Sampled: 04/16/04 14:20 Received: 04/19/04 08:25										
1,2-Dibromoethane	ND	9.35	25.0	ug/l	50	4040946	04/23/04	04/23/04	EPA 8260B	D, U
1,2-Dichloroethane	ND	7.10	25.0	"	"	"	"	"	"	D, U
Benzene	83.5	7.35	10.0	"	"	"	"	"	"	D
Toluene	1530	7.75	25.0	"	"	"	"	"	"	D
Ethylbenzene	2510	5.50	25.0	"	"	"	"	"	"	D
Xylenes (total)	8150	13.1	50.0	"	"	"	"	"	"	D
Methyl tert-butyl ether	ND	4.32	100	"	"	"	"	"	"	D, U
Naphthalene	1500	4.94	100	"	"	"	"	"	"	D
1,2,4-Trimethylbenzene	3170	4.42	50.0	"	"	"	"	"	"	D
1,3,5-Trimethylbenzene	620	7.85	25.0	"	"	"	"	"	"	D
Isopropylbenzene	98.5	5.35	100	"	"	"	"	"	"	J, D
n-Propylbenzene	325	6.90	25.0	"	"	"	"	"	"	D
<i>Surrogate: 4-BFB</i>	<i>99.0 %</i>		<i>75-120</i>							
<i>Surrogate: 1,2-DCA-d4</i>	<i>102 %</i>		<i>77-129</i>							
<i>Surrogate: Dibromofluoromethane</i>	<i>102 %</i>		<i>80-121</i>							
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>		<i>80-120</i>							
Trip Blank (P4D0629-04) Water Sampled: 04/16/04 12:00 Received: 04/19/04 08:25										
1,2-Dibromoethane	ND	0.187	0.500	ug/l	1	4040946	04/23/04	04/23/04	EPA 8260B	U
1,2-Dichloroethane	ND	0.142	0.500	"	"	"	"	"	"	U
Benzene	ND	0.147	0.200	"	"	"	"	"	"	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
<i>Surrogate: 4-BFB</i>	<i>98.0 %</i>		<i>75-120</i>							
<i>Surrogate: 1,2-DCA-d4</i>	<i>102 %</i>		<i>77-129</i>							
<i>Surrogate: Dibromofluoromethane</i>	<i>103 %</i>		<i>80-121</i>							
<i>Surrogate: Toluene-d8</i>	<i>96.5 %</i>		<i>80-120</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: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:21

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-29(A) (P4D0629-01) Water Sampled: 04/16/04 12:22 Received: 04/19/04 08:25 R-05										
Acenaphthene	ND	0.100	0.100	ug/l	2	4040773	04/20/04	04/28/04	EPA 8270m	D, U
Acenaphthylene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Anthracene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Benzo (a) anthracene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Benzo (a) pyrene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Benzo (b) fluoranthene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Benzo (ghi) perylene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Benzo (k) fluoranthene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Chrysene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Dibenzo (a,h) anthracene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Fluoranthene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Fluorene	ND	0.100	0.100	"	"	"	"	"	"	D, U
Indeno (1,2,3-cd) pyrene	ND	0.0200	0.0200	"	"	"	"	"	"	D, U
Naphthalene	806	10.0	10.0	"	200	"	"	04/28/04	"	D
Phenanthrene	ND	0.100	0.100	"	2	"	"	04/28/04	"	D, U
Pyrene	ND	0.100	0.100	"	"	"	"	"	"	D, U

Surrogate: Fluorene-d10	53.8 %		25-150			"	"	"	"	D
Surrogate: Pyrene-d10	68.2 %		23-150			"	"	"	"	D
Surrogate: Benzo (a) pyrene-d12	50.4 %		10-150			"	"	"	"	D

MW-40(A) (P4D0629-03) Water Sampled: 04/16/04 14:20 Received: 04/19/04 08:25 R-05										
Acenaphthene	0.822	0.200	0.200	ug/l	4	4040773	04/20/04	04/28/04	EPA 8270m	D
Acenaphthylene	ND	0.300	0.300	"	"	"	"	"	"	R-03, D, U
Anthracene	ND	0.200	0.200	"	"	"	"	"	"	D, U
Benzo (a) anthracene	ND	0.0400	0.0400	"	"	"	"	"	"	D, U
Benzo (a) pyrene	ND	0.0400	0.0400	"	"	"	"	"	"	D, U
Benzo (b) fluoranthene	ND	0.0400	0.0400	"	"	"	"	"	"	D, U
Benzo (ghi) perylene	ND	0.200	0.200	"	"	"	"	"	"	D, U
Benzo (k) fluoranthene	ND	0.0400	0.0400	"	"	"	"	"	"	D, U
Chrysene	ND	0.0400	0.0400	"	"	"	"	"	"	D, U
Dibenzo (a,h) anthracene	ND	0.0400	0.0400	"	"	"	"	"	"	D, U
Fluoranthene	ND	0.200	0.200	"	"	"	"	"	"	D, U
Fluorene	1.16	0.200	0.200	"	"	"	"	"	"	D
Indeno (1,2,3-cd) pyrene	ND	0.0400	0.0400	"	"	"	"	"	"	D, U
Naphthalene	850	50.0	50.0	"	1000	"	"	04/28/04	"	D
Phenanthrene	2.13	0.200	0.200	"	4	"	"	04/28/04	"	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: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 14:21

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

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-40(A) (P4D0629-03) Water										R-05
Sampled: 04/16/04 14:20 Received: 04/19/04 08:25										
Pyrene	ND	0.200	0.200	ug/l	4	4040773	04/20/04	04/28/04	EPA 8270m	D, U
Surrogate: Fluorene-d10	59.7 %		25-150			"	"	"	"	D
Surrogate: Pyrene-d10	48.3 %		23-150			"	"	"	"	D
Surrogate: Benzo (a) pyrene-d12	36.2 %		10-150			"	"	"	"	D

North Creek Analytical - Portland

Joy D. Chang, Project Manager

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 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
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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 4041051: Prepared 04/26/04 Using EPA 5030B											
Blank (4041051-BLK1)											
Gasoline Range Hydrocarbons	36.1	6.02	80.0	ug/l							J
Surrogate: 4-BFB	40.5			"	50.0		81.0	50-150			
LCS (4041051-BS2)											
Gasoline Range Hydrocarbons	880	6.02	80.0	ug/l	1000		88.0	70-130			
Surrogate: 4-BFB	30.0			"	50.0		60.0	50-150			
LCS Dup (4041051-BSD2)											
Gasoline Range Hydrocarbons	834	6.02	80.0	ug/l	1000		83.4	70-130	5.37	40	
Surrogate: 4-BFB	28.1			"	50.0		56.2	50-150			

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 Project Number: 10077.004
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Reported:
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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 4040819: Prepared 04/21/04 Using EPA 3510 Fuels

Blank (4040819-BLK1)

Diesel Range Organics	ND	0.153	0.250	mg/l							U
Heavy Oil Range Hydrocarbons	ND	0.286	0.500	"							U
Surrogate: 1-Chlorooctadecane	0.0727			"	0.0960		75.7	50-150			

LCS (4040819-BS1)

Diesel Range Organics	2.12	0.153	0.250	mg/l	2.50		84.8	50-150			
Heavy Oil Range Hydrocarbons	1.32	0.286	0.500	"	1.50		88.0	50-150			
Surrogate: 1-Chlorooctadecane	0.0878			"	0.0960		91.5	50-150			

LCS Dup (4040819-BSD1)

Diesel Range Organics	2.13	0.153	0.250	mg/l	2.50		85.2	50-150	0.471	50	
Heavy Oil Range Hydrocarbons	1.23	0.286	0.500	"	1.50		82.0	50-150	7.06	50	
Surrogate: 1-Chlorooctadecane	0.0878			"	0.0960		91.5	50-150			

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Reported:
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Total Metals per EPA 200 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 4040838: Prepared 04/21/04 Using EPA 200/3005											
Blank (4040838-BLK1)											
Lead	ND	0.0000870	0.00100	mg/l							U
LCS (4040838-BS1)											
Lead	0.0946	0.0000870	0.00100	mg/l	0.100		94.6	85-115			
LCS Dup (4040838-BSD1)											
Lead	0.0953	0.0000870	0.00100	mg/l	0.100		95.3	85-115	0.737	20	
Duplicate (4040838-DUP1) Source: P4D0629-03											
Lead	0.0553	0.0000870	0.00100	mg/l		0.0567			2.50	20	
Matrix Spike (4040838-MS1) Source: P4D0608-01											
Lead	0.447	0.0000870	0.00100	mg/l	0.100	0.362	85.0	70-130			
Matrix Spike (4040838-MS2) Source: P4D0608-02											
Lead	0.406	0.0000870	0.00100	mg/l	0.100	0.320	86.0	70-130			

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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:21

**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 4040946: Prepared 04/23/04 Using EPA 5030B

Blank (4040946-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	0.200	"							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	21.6			"	20.0		108	75-120			
Surrogate: 1,2-DCA-d4	20.3			"	20.0		102	77-129			
Surrogate: Dibromofluoromethane	20.4			"	20.0		102	80-121			
Surrogate: Toluene-d8	19.5			"	20.0		97.5	80-120			

LCS (4040946-BS1)

Benzene	19.7	0.147	0.200	ug/l	20.0		98.5	80-120			
Toluene	19.5	0.155	0.500	"	20.0		97.5	80-124			
Ethylbenzene	19.6	0.110	0.500	"	20.0		98.0	80-120			
Xylenes (total)	58.9	0.262	1.00	"	60.0		98.2	73-124			
Methyl tert-butyl ether	20.3	0.0865	2.00	"	20.0		102	80-129			
Naphthalene	22.6	0.0989	2.00	"	20.0		113	72-149			
Surrogate: 4-BFB	20.0			"	20.0		100	75-120			
Surrogate: 1,2-DCA-d4	19.3			"	20.0		96.5	77-129			
Surrogate: Dibromofluoromethane	19.8			"	20.0		99.0	80-121			
Surrogate: Toluene-d8	20.2			"	20.0		101	80-120			

North Creek Analytical - Portland

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Project Number: 10077.004
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 4040946: Prepared 04/23/04 Using EPA 5030B

Matrix Spike (4040946-MS1)

Source: P4D0763-01

Benzene	20.0	0.147	0.200	ug/l	20.0	ND	100	80-124			
Toluene	19.9	0.155	0.500	"	20.0	ND	99.5	79.7-131			
Ethylbenzene	19.8	0.110	0.500	"	20.0	ND	99.0	80-124			
Xylenes (total)	58.8	0.262	1.00	"	60.0	ND	98.0	44.6-154			
Methyl tert-butyl ether	19.7	0.0865	2.00	"	20.0	ND	98.5	80-130			
Naphthalene	23.8	0.0989	2.00	"	20.0	ND	119	69-163			
<i>Surrogate: 4-BFB</i>	<i>19.3</i>			<i>"</i>	<i>20.0</i>		<i>96.5</i>	<i>75-120</i>			
<i>Surrogate: 1,2-DCA-d4</i>	<i>18.8</i>			<i>"</i>	<i>20.0</i>		<i>94.0</i>	<i>77-129</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>19.8</i>			<i>"</i>	<i>20.0</i>		<i>99.0</i>	<i>80-121</i>			
<i>Surrogate: Toluene-d8</i>	<i>20.1</i>			<i>"</i>	<i>20.0</i>		<i>100</i>	<i>80-120</i>			

Matrix Spike Dup (4040946-MSD1)

Source: P4D0763-01

Benzene	20.5	0.147	0.200	ug/l	20.0	ND	102	80-124	2.47	25	
Toluene	20.5	0.155	0.500	"	20.0	ND	102	79.7-131	2.97	25	
Ethylbenzene	21.3	0.110	0.500	"	20.0	ND	106	80-124	7.30	25	
Xylenes (total)	64.4	0.262	1.00	"	60.0	ND	107	44.6-154	9.09	25	
Methyl tert-butyl ether	20.4	0.0865	2.00	"	20.0	ND	102	80-130	3.49	25	
Naphthalene	25.0	0.0989	2.00	"	20.0	ND	125	69-163	4.92	25	
<i>Surrogate: 4-BFB</i>	<i>20.8</i>			<i>"</i>	<i>20.0</i>		<i>104</i>	<i>75-120</i>			
<i>Surrogate: 1,2-DCA-d4</i>	<i>19.8</i>			<i>"</i>	<i>20.0</i>		<i>99.0</i>	<i>77-129</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>20.2</i>			<i>"</i>	<i>20.0</i>		<i>101</i>	<i>80-121</i>			
<i>Surrogate: Toluene-d8</i>	<i>21.1</i>			<i>"</i>	<i>20.0</i>		<i>106</i>	<i>80-120</i>			

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Project: Astoria Area-Wide Petroleum Site RI-1
Project Number: 10077.004
Project Manager: Tom Calabrese

Reported:
05/03/04 14:21

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 4040773: Prepared 04/20/04 Using EPA 3520/600 Series

Blank (4040773-BLK1)

Acenaphthene	ND	0.0500	0.0500	ug/l							U
Acenaphthylene	ND	0.0500	0.0500	"							U
Anthracene	ND	0.0500	0.0500	"							U
Benzo (a) anthracene	ND	0.0100	0.0100	"							U
Benzo (a) pyrene	ND	0.0100	0.0100	"							U
Benzo (b) fluoranthene	ND	0.0100	0.0100	"							U
Benzo (ghi) perylene	ND	0.0500	0.0500	"							U
Benzo (k) fluoranthene	ND	0.0100	0.0100	"							U
Chrysene	ND	0.0100	0.0100	"							U
Dibenzo (a,h) anthracene	ND	0.0100	0.0100	"							U
Fluoranthene	ND	0.0500	0.0500	"							U
Fluorene	ND	0.0500	0.0500	"							U
Indeno (1,2,3-cd) pyrene	ND	0.0100	0.0100	"							U
Naphthalene	ND	0.0500	0.0500	"							U
Phenanthrene	ND	0.0500	0.0500	"							U
Pyrene	ND	0.0500	0.0500	"							U
Surrogate: Fluorene-d10	0.922			"	2.50		36.9	25-150			
Surrogate: Pyrene-d10	1.25			"	2.50		50.0	23-150			
Surrogate: Benzo (a) pyrene-d12	1.34			"	2.50		53.6	10-150			

LCS (4040773-BS1)

Acenaphthene	1.81	0.0500	0.0500	ug/l	2.50		72.4	26-150			
Benzo (a) pyrene	1.85	0.0100	0.0100	"	2.50		74.0	38-150			
Pyrene	1.94	0.0500	0.0500	"	2.50		77.6	33-150			
Surrogate: Fluorene-d10	1.73			"	2.50		69.2	25-150			
Surrogate: Pyrene-d10	1.87			"	2.50		74.8	23-150			
Surrogate: Benzo (a) pyrene-d12	1.76			"	2.50		70.4	10-150			

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**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 4040773: Prepared 04/20/04 Using EPA 3520/600 Series

Matrix Spike (4040773-MS1)

Source: P4D0600-13

Acenaphthene	1.67	0.0500	0.0500	ug/l	2.36	ND	70.8	26-135			
Benzo (a) pyrene	1.70	0.0100	0.0100	"	2.36	ND	72.0	38-137			
Pyrene	1.80	0.0500	0.0500	"	2.36	ND	76.3	33-133			
<i>Surrogate: Fluorene-d10</i>	<i>1.62</i>			"	<i>2.36</i>		<i>68.6</i>	<i>25-150</i>			
<i>Surrogate: Pyrene-d10</i>	<i>1.77</i>			"	<i>2.36</i>		<i>75.0</i>	<i>23-150</i>			
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>1.66</i>			"	<i>2.36</i>		<i>70.3</i>	<i>10-150</i>			

Matrix Spike Dup (4040773-MSD1)

Source: P4D0600-13

Acenaphthene	1.47	0.0500	0.0500	ug/l	2.36	ND	62.3	26-135	12.7	60	
Benzo (a) pyrene	1.50	0.0100	0.0100	"	2.36	ND	63.6	38-137	12.5	60	
Pyrene	1.72	0.0500	0.0500	"	2.36	ND	72.9	33-133	4.55	60	
<i>Surrogate: Fluorene-d10</i>	<i>1.41</i>			"	<i>2.36</i>		<i>59.7</i>	<i>25-150</i>			
<i>Surrogate: Pyrene-d10</i>	<i>1.64</i>			"	<i>2.36</i>		<i>69.5</i>	<i>23-150</i>			
<i>Surrogate: Benzo (a) pyrene-d12</i>	<i>1.45</i>			"	<i>2.36</i>		<i>61.4</i>	<i>10-150</i>			

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Project: Astoria Area-Wide Petroleum Site RI-1
 Project Number: 10077.004
 Project Manager: Tom Calabrese

Reported:
 05/03/04 14:21

Notes and Definitions

- A-01 Detected hydrocarbons are mainly due to overlap from gasoline, as well as biogenic interference.
- 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.
- J Estimated value.
- 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.
- 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, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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ASTORIA AREA-WIDE PETROLEUM SITE CHAIN OF CUSTODY REPORT

Work Order #: **P4D0629**

CLIENT: **Envirologic Resources**
 REPORT TO: **Tom Leach**
 ADDRESS: **805 SW 50th St
 Astoria, OR 97103**

Telephone: _____
 E-mail: **@envirologic.com**

INVOICE TO:
Envirologic Resources

PHONE: **503-768-5121** FAX: **503-768-5122**

P.O. NUMBER: **10077-0011**

PROJECT NAME: **Astoria Area-Wide Petro Site RI-1**

PROJECT NUMBER: **10077-0011**

SAMPLED BY: **MNB + NAGS**

TURNAROUND REQUEST in Business Days *

Organic & Inorganic Analyses
 10 7 5 4 3 2 1 <1

Petroleum Hydrocarbon Analyses
 5 4 3 2 1 <1

OTHER Specify: _____

* Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLE LOCATION	SAMPLING DATE/TIME	REQUESTED ANALYSES												MATRIX (gw, Soil)	# OF CONT.	COMMENTS
			NWTPH-Dx	NWTPHGx	8260B-RBCA	8270-SIM PAH	RCRA 8 METALS Total	RCRA 8 METALS Dissolved	Total Cations: Na, K, Ca, Mg, Fe, Mn	Chloride 300.0	Sulfate 300.0	Al/HC03/CO3 SM2320B	Nitrate/Nitrite 353.2	TOTAL LEAD			
1 MW-39(A)	MW-39(A)	4/16/04 / 13:30	✓	✓	✓	✓									SW	11	
2 BG BLANK	BG BLANK	4/16/04 / 13:57			✓										SW	11	
3 MW-40(A)	MW-40(A)	4/16/04 / 14:30	✓	✓	✓	✓									SW	11	
4		/ / :															
5		/ / :															
6		/ / :															
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14		/ / :															
15		/ / :															

RELINQUISHED BY: **Mel A. Burtin**
 PRINT NAME: **Melanie Burtin** FIRM: **Envirologic Resources**

DATE: **4-19-04**
 TIME: **8:25**

RECEIVED BY: **[Signature]**
 PRINT NAME: **Bryan Passage** FIRM: **NCA**

DATE: **4-19-04**
 TIME: **8:25**

ADDITIONAL REMARKS: **Low Levels**

TEMP: **24**
 PAGE **1** OF **1**
cc/ent

NORTH CREEK ANALYTICAL COOLER RECEIPT FORM

(Army Corp. compliant)

Client: EnviroLogic Resources

1. Please sign for receipt and opening of 1 cooler or other

By (print) Sarah Passmore (sign) [Signature]

2. Date samples received 4/19/04 Date opened: Same or / /

3. Delivered by: NCA courier FedEx UPS Courier Client Other
Airbill # if applicable (Put copy of shipping papers in file)

4. There were 0 custody seals present, signed by date / / .

5. Were the custody seals unbroken and intact at the date and time of arrival? Yes No

6. Was ice used? yes no Type of ice: blue ice gel ice real ice
Temperature (degrees C) Raytek thermometer 2.4 Digi-Therm (probe temperature blank)

7. Are custody papers sealed in a plastic bag and taped inside to lid? Yes No

8. Were custody papers filled out properly (ink, signed, etc.)? Yes No
If "no" please specify:

9. Was project identifiable from custody papers? Yes No
Name of project Astoria Area-wide P&RI (if applicable)

10. Initial and date for unpacking: [Signature] (initials) date 4/19/04

11. Packing material: bubble wrap/bag styrofoam cardboard other

12. Were samples in bags? Yes No

13. Did all containers indicated on the COC arrive? Yes No
If "no" please indicate which containers were absent

14. Were all containers unbroken and labels in good condition? Yes No
If "no" please indicate which containers

15. Were all bottle labels complete (ID, date, time, signature, etc.)? Yes No
Do the IDs, times, etc. agree with the COC? Yes No
If "no" please indicate which containers

16. Are containers properly preserved for indicated analysis? Yes No

17. Is there adequate volume for the test(s) requested? Yes No

18. If voa vials were submitted, are they free of bubbles? N/A Yes No

19. Log-in phase: Date samples were logged in: 4/19/04 Elm Project # P4D0629

20. Logged in by (print) Kim Davis (sign) [Signature]

21. Was the project manager notified of status? (Use back of form as a record) Yes No