

GROUNDWATER MONITORING TECHNICAL
MEMORANDUM
MAY 2010 MONITORING EVENT
Supplemental Site Investigation
Former Columbia Street Manufactured Gas Plant Property
320 Columbia Street NW
Olympia, Washington



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Report date: July 30, 2010

GeoEngineers file no.: 0186-774-00

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Sample date: May 26, 2010

Wells gauged: MW-1 to MW-5, MW-7 and MW-8 (on-property wells);
MW-6, MW-10, and MW-00 (off-property wells).

Non-aqueous phase liquid (well/thickness): Not observed in any wells.

Inferred groundwater flow direction: Predominantly toward the **west-southwest** based on measured groundwater levels in monitoring wells (see Figure 1). Groundwater levels in May 2010 were within the range previously observed (generally 4.5 to 5.5 feet below ground surface in all wells; Table 1).

Groundwater flow direction similar to previous events? The inferred groundwater flow direction on May 26, 2010 was similar to the **westerly** flow direction observed in August and October 2008. In February 2010, the inferred groundwater flow direction was predominantly toward the **east**; in November 2009, the inferred flow direction was **variable**. Several factors may be responsible for the observed temporal shifts in groundwater flow direction, including seasonal variations in precipitation, rainwater infiltration within the unpaved footprint of the former office building or at Percival Landing Park (directly west of the subject property), or hydraulic influence from an unknown buried utility (e.g., sewer line) and/or tides in Budd Inlet.

Wells sampled: On-property wells: MW-1 to MW-5, MW-7 and MW-8.
Off-property wells: MW-6, MW-10, and MW-00.

Purge/sample methods: Dedicated submersible pump (MW-1 to MW-4) or peristaltic pump and dedicated tubing (MW-5 to MW-8, MW-10, MW-00).

Chemical testing: Samples were analyzed for one or more of the following constituents: carcinogenic polycyclic aromatic hydrocarbons (cPAHs) by EPA Method 8270D-SIM; total metals (arsenic, mercury, lead, and chromium) by EPA Method 6010/7000; gasoline-, diesel-, and lube oil-range total petroleum hydrocarbons (TPH) by Ecology Methods NWTPH-Gx and NWTPH-Dx; and benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8021B.

Summary of results: The May 2010 analytical results are presented in Table 2 and Figure 2. The results were generally consistent with previous sampling events. cPAHs (total toxic equivalent concentration) were detected at a concentration exceeding the Model Toxics Control Act (MTCA) Method A groundwater cleanup level of 0.1 microgram per liter (ug/l) in one on-property well (MW-7; 0.30J ug/l). Total arsenic was detected at concentrations exceeding the MTCA Method A groundwater cleanup level of 5 ug/l in four on-property wells (MW-1, MW-3, MW-4, and MW-5; 6.1 to 85 ug/l) and one off-property well (MW-10; 17 ug/l). The dissolved arsenic detected in on- and off-property monitoring wells is inferred to originate from an off-property anthropogenic or natural source,

because arsenic concentrations in on-property soil are consistent with Washington state natural background concentrations. Gasoline-, diesel-, and lube oil-range TPH and BTEX were not detected in the six wells sampled for these constituents.

Attachments:

Table 1 – Measured Groundwater Levels in Monitoring Wells

Table 2 – Groundwater Chemical Analytical Results, 2008-2010

Figure 1 – Groundwater Potentiometric Surface Map – May 26, 2010

Figure 2 – Constituents Detected Above MTCA Method A Cleanup Levels in Groundwater

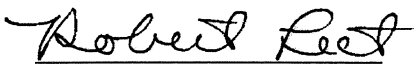
Attachment A – Data Quality Assessment Summary

Attachment B – Laboratory Report

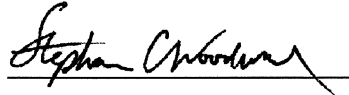
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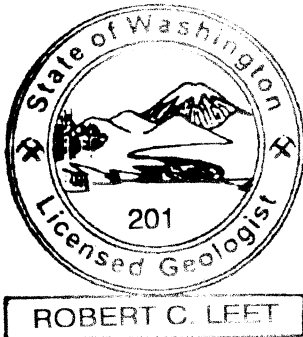


TABLE 1
Measured Groundwater Levels in Monitoring Wells
Former Columbia Street MGP Property
Olympia, Washington

Monitoring Well	Screened Interval (feet bgs)	Top-of-Casing Elevation ¹ (feet)	Date	Measured Depth to Groundwater ² (feet below TOC)	Calculated Groundwater Elevation (feet)
MW-1	5.0-20.0	8.42	8/26/08	4.74	3.68
			10/6/08	4.64	3.78
			11/3/09	4.55	3.87
			2/15/10	4.16	4.26
			5/26/10	4.41	4.01
MW-2	5.0-20.0	8.96	8/26/08	5.33	3.63
			10/6/08	5.23	3.73
			11/3/09	5.05	3.91
			2/15/10	4.44	4.52
			5/26/10	4.97	3.99
MW-3	39.5-44.5	8.92	8/26/08	5.27	3.65
			10/6/08	5.08	3.84
			11/3/09	5.02	3.90
			2/15/10	4.62	4.30
			5/26/10	4.94	3.98
MW-4	23.5-28.5	9.00	8/26/08	5.30	3.70
			10/6/08	5.18	3.82
			11/3/09	5.06	3.94
			2/15/10	4.72	4.28
			5/26/10	5.28	3.72
MW-5	4.5-19.5	9.53	11/3/09	5.64	3.89
			2/15/10	5.28	4.25
			5/26/10	5.55	3.98
MW-6 ³	11.1 ³	8.97	8/26/08	5.37	3.60
			10/6/08	5.37	3.60
			11/3/09	5.08	3.89
			2/15/10	4.46	4.51
			5/26/10	5.08	3.89
MW-7	4.5-19.5	8.93	11/3/09	5.09	3.84
			2/15/10	4.63	4.30
			5/26/10	4.92	4.01
MW-8	5.0-20.0	9.02	11/3/09	5.11	3.91
			2/15/10	4.49	4.53
			5/26/10	5.07	3.95
MW-10 ³	14.0 ³	9.02	8/26/08	5.31	3.71
			10/6/08	5.25	3.77
			11/3/09	5.14	3.88
			2/15/10	4.66	4.36
			5/26/10	4.96	4.06
MW-00 ³	12.4 ³	NA	2/15/10	4.47	--
			5/26/10	4.74	--

Notes:

bgs = Below ground surface

TOC = Top of well casing

¹Elevations are referenced to an arbitrary benchmark (concrete curb) near the site with an assigned elevation of 10 feet.

²Water levels measured with an electronic water level indicator.

³Pre-existing monitoring well installed by others; screened interval unknown. Value shown for screened interval is the approximate depth to bottom of well casing measured with an electronic water level indicator on February 15, 2010.

NA = Not available

TABLE 2
Groundwater Chemical Analytical Results
2008-2010
Former Columbia Street MGP Property
Olympia, Washington

Analyte	Units	MTCA Method A Cleanup Level ¹	Well/Sample ID: Sample Date:	MW-1	MW-1	MW-1	MW-1	MW-1	MW-2	MW-2	MW-2	MW-2/DUP-110309*	MW-2	MW-2	MW-3	MW-3/D-08-26-08*	MW-3	MW-3	MW-3	MW-3	MW-4	MW-4	MW-4	MW-4	MW-4
				8/26/2008	10/6/2008	11/3/2009	2/15/2010	5/26/2010	8/26/2008	10/6/2008	11/3/2009	11/3/2009	2/15/2010	5/26/2010	8/26/2008	8/26/2008	10/6/2008	11/3/2009	2/15/2010	5/26/2010	8/26/2008	10/6/2008	11/3/2009	2/15/2010	5/26/2010
Volatiles Organic Compounds (EPA 8011/8021B/8260B)																									
Benzene	ug/l	5		< 0.50	--	--	--	--	< 0.50	--	< 1.0	< 1.0	< 1.0	< 1.0	< 0.50	< 0.50	--	--	--	--	< 0.50	--	--	--	--
Toluene	ug/l	1,000		< 0.50	--	--	--	--	< 0.50	--	< 1.0	< 1.0	< 1.0	< 1.0	< 0.50	< 0.50	--	--	--	--	< 0.50	--	--	--	--
Ethylbenzene	ug/l	700		< 0.50	--	--	--	--	< 0.50	--	< 1.0	< 1.0	< 1.0	< 1.0	< 0.50	< 0.50	--	--	--	--	< 0.50	--	--	--	--
Xylene, m-,p-	ug/l	1,000 (a)		< 1.0	--	--	--	--	< 1.0	--	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	--	--	--	--	< 1.0	--	--	--	--
Xylene, o-	ug/l	1,000 (a)		< 1.0	--	--	--	--	< 1.0	--	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	--	--	--	--	< 1.0	--	--	--	--
1,2-Dibromoethane (EDB)	ug/l	0.01		--	--	--	--	--	--	--	< 0.0094	< 0.0095	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane (EDC)	ug/l	5.0		--	--	--	--	--	--	--	< 0.20	< 0.20	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl Tertiary Butyl Ether (MTBE)	ug/l	20		--	--	--	--	--	--	--	< 0.20	< 0.20	--	--	--	--	--	--	--	--	--	--	--	--	--
TPH (NWTPH-Gx/Dx)																									
Gasoline-Range	mg/l	0.8		< 0.10	--	--	--	--	< 0.10	--	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	--	--	--	--	< 0.10	--	--	--	--
Diesel-Range	mg/l	0.5		< 0.25	--	--	--	--	< 0.25	--	< 0.25	< 0.25	< 0.26	< 0.26	< 0.26	< 0.25	--	--	--	--	< 0.25	--	--	--	--
Lube Oil-Range	mg/l	0.5		< 0.40	--	--	--	--	< 0.40	--	< 0.40	< 0.40	< 0.41	< 0.41	< 0.41	< 0.40	--	--	--	--	< 0.41	--	--	--	--
SVOCs (EPA 8270D-SIM)																									
ncPAHs																									
Benzo(g,h,i)perylene	ug/l	--		< 0.0095	--	--	--	--	0.061	--	--	--	--	--	< 0.0095	< 0.0095	--	--	--	--	< 0.0095	--	--	--	--
cPAHs																									
Benzo(a)anthracene	ug/l	--		< 0.0095	--	< 0.0094	< 0.0094	< 0.0095	0.012	--	< 0.0095	< 0.010	0.013	< 0.0095	< 0.0095	< 0.0095	--	< 0.0093	< 0.0094	< 0.0095	< 0.0095	--	< 0.0095	< 0.0095	0.013
Chrysene	ug/l	--		< 0.0095	--	< 0.0094	< 0.0094	< 0.0095	0.0099	--	< 0.0095	< 0.010	0.013	< 0.0095	< 0.0095	< 0.0095	--	< 0.0093	< 0.0094	< 0.0095	< 0.0095	--	< 0.0095	< 0.0095	< 0.0094
Benzo(b)fluoranthene	ug/l	--		< 0.0095	--	< 0.0094	< 0.0094	< 0.0095	0.020	--	< 0.0095	< 0.010	0.019	< 0.0095	< 0.0095	< 0.0095	--	< 0.0093	< 0.0094	< 0.0095	< 0.0095	--	< 0.0095	< 0.0095	< 0.0094
Benzo(k)fluoranthene	ug/l	--		< 0.0095	--	< 0.0094	< 0.0094	< 0.0095	< 0.0095	--	< 0.0095	< 0.010	0.013	< 0.0095	< 0.0095	< 0.0095	--	< 0.0093	< 0.0094	< 0.0095	< 0.0095	--	< 0.0095	< 0.0095	< 0.0094
Benzo(a)pyrene	ug/l	--		< 0.0095	--	< 0.0094	< 0.0094	< 0.0095	0.021	--	< 0.0095	< 0.010	0.029	< 0.0095	< 0.0095	< 0.0095	--	< 0.0093	< 0.0094	< 0.0095	< 0.0095	--	< 0.0095	< 0.0095	< 0.0094
Indeno(1,2,3-cd)pyrene	ug/l	--		< 0.0095	--	< 0.0094	< 0.0094	< 0.0095	0.026	--	< 0.0095	< 0.010	0.030	< 0.0095	< 0.0095	< 0.0095	--	< 0.0093	< 0.0094	< 0.0095	< 0.0095	--	< 0.0095	< 0.0095	< 0.0094
Dibenzo(a,h)anthracene	ug/l	--		< 0.0095	--	< 0.0094	< 0.0094	< 0.0095	< 0.0095	--	< 0.0095	< 0.010	< 0.0095	< 0.0095	< 0.0095	< 0.0095	--	< 0.0093	< 0.0094	< 0.0095	< 0.0095	--	< 0.0095	< 0.0095	< 0.0094
Total cPAHs TEC	ug/l	0.1		< 0.0072	--	< 0.0071	< 0.0071	< 0.0072	0.028	--	< 0.0072	< 0.0076	0.037	< 0.0072	< 0.0072	< 0.0072	--	< 0.0070	< 0.0071	< 0.0072	< 0.0072	--	< 0.0072	< 0.0072	0.079
Metals (EPA 200.8/335.4/6020/7470A)																									
Total Arsenic	mg/l	0.005		0.024	0.016	0.0062	0.013	0.0061	0.010	0.012	0.0066	0.0069	0.0072	< 0.0033	0.083	0.084	0.052	0.031	0.047	0.041	0.12	0.057	0.088	0.092	0.085
Dissolved Arsenic ²	mg/l	0.005		--	0.017	--	--	--	--	0.011	--	--	--	--	--	--	0.034	--	--	--	--	0.042	--	--	--
Total Chromium	mg/l	0.050		0.022	--	< 0.011	< 0.011	< 0.011	0.013	--	< 0.011	< 0.011	< 0.011	< 0.011	0.043	0.045	--	< 0.011	0.017	< 0.011	0.052	--	< 0.011	< 0.011	< 0.011
Total Copper	mg/l	0.59 (b)		0.012	--	--	--	--	0.0071	--	--	--	--	--	0.040	0.040	--	--	--	--	0.026	--	--	--	--
Total Lead	mg/l	0.015		0.0032	0.0023	< 0.0011	0.0019	< 0.0011	0.0051	0.0036	< 0.0011	< 0.0011	0.0046	< 0.0011	0.018	0.018	0.0072	0.0039	0.0080	0.0038	0.0062	0.0039	0.0013	< 0.0011	< 0.0011
Dissolved Lead ²	mg/l	0.015		--	< 0.0010	--	--	--	--	< 0.0010	--	--	--	--	--	--	< 0.0010	--	--	--	--	< 0.0010	--	--	--
Total Mercury	mg/l	0.002		< 0.00050	--	< 0.00050	< 0.00050	< 0.00050	< 0.00050	--	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	--	< 0.00050	< 0.00050	< 0.00050	< 0.00050	--	< 0.00050	< 0.00050	< 0.00050
Total Cyanide	mg/l	0.2 (c)		< 0.005	--	--	--	--	< 0.005	--	--	--	--	--	< 0.005	< 0.005	--	--	--	--	< 0.005	--	--	--	--

TABLE 2
Groundwater Chemical Analytical Results
2008-2010
Former Columbia Street MGP Property
Olympia, Washington

Analyte	Units	MTCA Method A Cleanup Level ¹	Well/Sample ID: Sample Date:	MW-5	MW-5	MW-5	MW-6	MW-6	MW-6	MW-6	MW-6	MW-7	MW-7	MW-7/DUP-021510*	MW-7	MW-7/DUP-100526*	MW-8	MW-8	MW-8	MW-10	MW-10	MW-10	MW-10	MW-10	MW-00	MW-00	
				11/3/2009	2/15/2010	5/26/2010	8/26/2008	10/6/2008	11/3/2009	2/15/2010	5/26/2010	11/3/2009	2/15/2010	5/26/2010	11/3/2009	2/15/2010	2/15/2010	5/26/2010	11/3/2009	2/15/2010	5/26/2010	8/26/2008	10/6/2008	11/3/2009	2/15/2010	5/26/2010	2/15/2010
Volatile Organic Compounds (EPA 8011/8021B/8260B)																											
Benzene	ug/l	5		< 1.0	< 1.0	< 1.0	< 0.50	--	< 1.0	< 1.0	< 1.0	1.1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.50	--	< 1.0	< 1.0	< 1.0	--	--	
Toluene	ug/l	1,000		< 1.0	< 1.0	< 1.0	< 0.50	--	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.50	--	< 1.0	< 1.0	< 1.0	--	--	
Ethylbenzene	ug/l	700		< 1.0	< 1.0	< 1.0	< 0.50	--	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.50	--	< 1.0	< 1.0	< 1.0	--	--	
Xylene, m-p-	ug/l	1,000 (a)		< 1.0	< 1.0	< 1.0	< 1.0	--	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	--	< 1.0	< 1.0	< 1.0	--	--	
Xylene, o-	ug/l	1,000 (a)		< 1.0	< 1.0	< 1.0	< 1.0	--	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	--	< 1.0	< 1.0	< 1.0	--	--	
1,2-Dibromoethane (EDB)	ug/l	0.01		--	--	--	--	--	< 0.0095	--	--	< 0.0095	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dichloroethane (EDC)	ug/l	5.0		--	--	--	--	--	< 0.20	--	--	< 0.20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Methyl Tertiary Butyl Ether (MTBE)	ug/l	20		--	--	--	--	--	< 0.20	--	--	< 0.20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
TPH (NWTPH-Gx/Dx)																											
Gasoline-Range	mg/l	0.8		< 0.10	< 0.10	< 0.10	< 0.10	--	< 0.10	< 0.10	< 0.10	0.26	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	--	< 0.10	< 0.10	< 0.10	--	--	
Diesel-Range	mg/l	0.5		< 0.25	< 0.26	< 0.26	< 0.25	--	< 0.25	< 0.26	< 0.26	< 0.25	< 0.25	< 0.25	< 0.26	< 0.26	< 0.25	< 0.25	< 0.26	< 0.25	--	< 0.25	< 0.25	< 0.26	--	--	
Lube Oil-Range	mg/l	0.5		< 0.40	< 0.41	< 0.41	< 0.40	--	< 0.40	< 0.41	< 0.41	< 0.40	< 0.40	< 0.40	< 0.41	< 0.41	< 0.40	< 0.40	< 0.42	< 0.40	--	< 0.40	< 0.40	< 0.41	--	--	
SVOCs (EPA 8270D-SIM)																											
ncPAHs																											
Benzo(g,h,i)perylene	ug/l	--		--	--	--	< 0.0095	--	--	--	--	--	--	--	--	--	--	--	--	< 0.0095	--	--	--	--	--	--	
cPAHs																											
Benzo(a)anthracene	ug/l	--		0.012	< 0.0095	0.021	< 0.0095	--	< 0.0097	< 0.0095	< 0.0097	0.051	0.064	0.090	0.084 J	0.12 J	< 0.0097	0.011	< 0.0095	< 0.0095	--	< 0.0098	< 0.0095	0.010	--	--	
Chrysene	ug/l	--		0.012	< 0.0095	0.017	< 0.0095	--	< 0.0097	< 0.0095	< 0.0097	0.067	0.087 J	0.13 J	0.12 J	0.17 J	< 0.0097	< 0.0095	< 0.0095	< 0.0095	--	< 0.0098	< 0.0095	< 0.0096	--	--	
Benzo(b)fluoranthene	ug/l	--		0.017	< 0.0095	0.014	< 0.0095	--	< 0.0097	< 0.0095	< 0.0097	0.13	0.14 J	0.22 J	0.16 J	0.24 J	< 0.0097	< 0.0095	< 0.0095	< 0.0095	--	< 0.0098	< 0.0095	< 0.0096	--	--	
Benzo(k)fluoranthene	ug/l	--		< 0.010	< 0.0095	0.012	< 0.0095	--	< 0.0097	< 0.0095	< 0.0097	0.030	0.12 J	0.18 J	0.10 J	0.17 J	< 0.0097	< 0.0095	< 0.0095	< 0.0095	--	< 0.0098	< 0.0095	< 0.0096	--	--	
Benzo(a)pyrene	ug/l	--		< 0.010	< 0.0095	0.017	< 0.0095	--	< 0.0097	< 0.0095	< 0.0097	0.14	0.21 J	0.31 J	0.23 J	0.37 J	< 0.0097	< 0.0095	< 0.0095	< 0.0095	--	< 0.0098	< 0.0095	< 0.0096	--	--	
Indeno(1,2,3-cd)pyrene	ug/l	--		0.011	< 0.0095	0.015	< 0.0095	--	< 0.0097	< 0.0095	< 0.0097	0.15	0.22 J	0.32 J	0.28 J	0.42 J	< 0.0097	< 0.0095	< 0.0095	< 0.0095	--	< 0.0098	< 0.0095	< 0.0096	--	--	
Dibenzo(a,h)anthracene	ug/l	--		< 0.010	< 0.0095	0.0098	< 0.0095	--	< 0.0097	< 0.0095	< 0.0097	0.016	0.023	0.032	0.032 J	0.048 J	< 0.0097	< 0.0095	< 0.0095	< 0.0095	--	< 0.0098	< 0.0095	< 0.0096	--	--	
Total cPAHs TEC	ug/l	0.1		0.010	< 0.0072	0.024	< 0.0072	--	< 0.0073	< 0.0072	< 0.0073	0.18	0.27 J	0.40 J	0.30 J	0.47 J	< 0.0073	0.0078	< 0.0072	< 0.0072	--	< 0.0074	< 0.0072	0.0078	--	--	
Metals (EPA 200.8/335.4/6020/7470A)																											
Total Arsenic	mg/l	0.005		0.023	0.025	0.018	0.0056	< 0.0033	< 0.0033	< 0.0033	< 0.0033	0.011	< 0.0033	< 0.0033	< 0.0033	< 0.0033	< 0.0033	< 0.0033	< 0.0033	0.012	0.011	0.0064	< 0.0033	0.017	0.010	0.0047	
Dissolved Arsenic ²	mg/l	0.005		--	--	--	< 0.0030	--	--	--	--	--	--	--	--	--	--	--	--	--	0.010	--	--	--	--	--	
Total Chromium	mg/l	0.050		< 0.011	< 0.011	< 0.011	0.013	--	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	< 0.011	--	< 0.011	< 0.011	< 0.011	--	--	
Total Copper	mg/l	0.59 (b)		--	--	--	< 0.011	--	--	--	--	--	--	--	--	--	--	--	--	< 0.011	--	--	--	--	--	--	
Total Lead	mg/l	0.015		0.0054	< 0.0011	< 0.0011	0.0022	0.0086	< 0.0011	< 0.0011	0.0025	0.0063	< 0.0011	< 0.0011	< 0.0011	< 0.0011	0.0012	< 0.0011	< 0.0011	< 0.0011	0.0047	0.0024	< 0.0011	0.0097	--	--	
Dissolved Lead ²	mg/l	0.015		--	--	--	< 0.0010	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.0010	--	--	--	--	--	
Total Mercury	mg/l	0.002		< 0.00050	< 0.00050	< 0.00050	< 0.00050	--	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	< 0.00050	--	< 0.00050	< 0.00050	< 0.00050	--	--	
Total Cyanide	mg/l	0.2 (c)		--	--	--	< 0.005	--	--	--	--	--	--	--	--	--	--	--	--	< 0.005	--	--	--	--	--	--	

Notes:

¹MTCA Method A cleanup levels for potable groundwater (WAC 173-340-720[3]).

²Groundwater samples analyzed for dissolved arsenic and dissolved lead were field-filtered with a 45 micron filter.

(a) Total value for all xylenes.

(b) MTCA Method B cleanup level (standard formula value) for potable groundwater (WAC 173-340-720[4][b]).

(c) Federal Primary Maximum Contaminant Level (MCL) (40 C.F.R. 141).

MTCA = Washington State Model Toxics Control Act

ug/l = Micrograms per liter

mg/l = Milligrams per liter

*Field duplicate sample

ft bgs = Feet below ground surface

SVOCs = Semivolatile organic compounds

cPAHs = Carcinogenic polycyclic aromatic hydrocarbons

ncPAHs = Non-carcinogenic polycyclic aromatic hydrocarbons (results are shown only for ncPAHs that have been historically detected)

TEC = Toxic equivalent concentration calculated per WAC 173-340-708[8][e]. For non-detected cPAHs, one-half the practical quantitation limit was used in the calculation.

TPH = Total petroleum hydrocarbons

-- = Constituent not analyzed or cleanup level not established

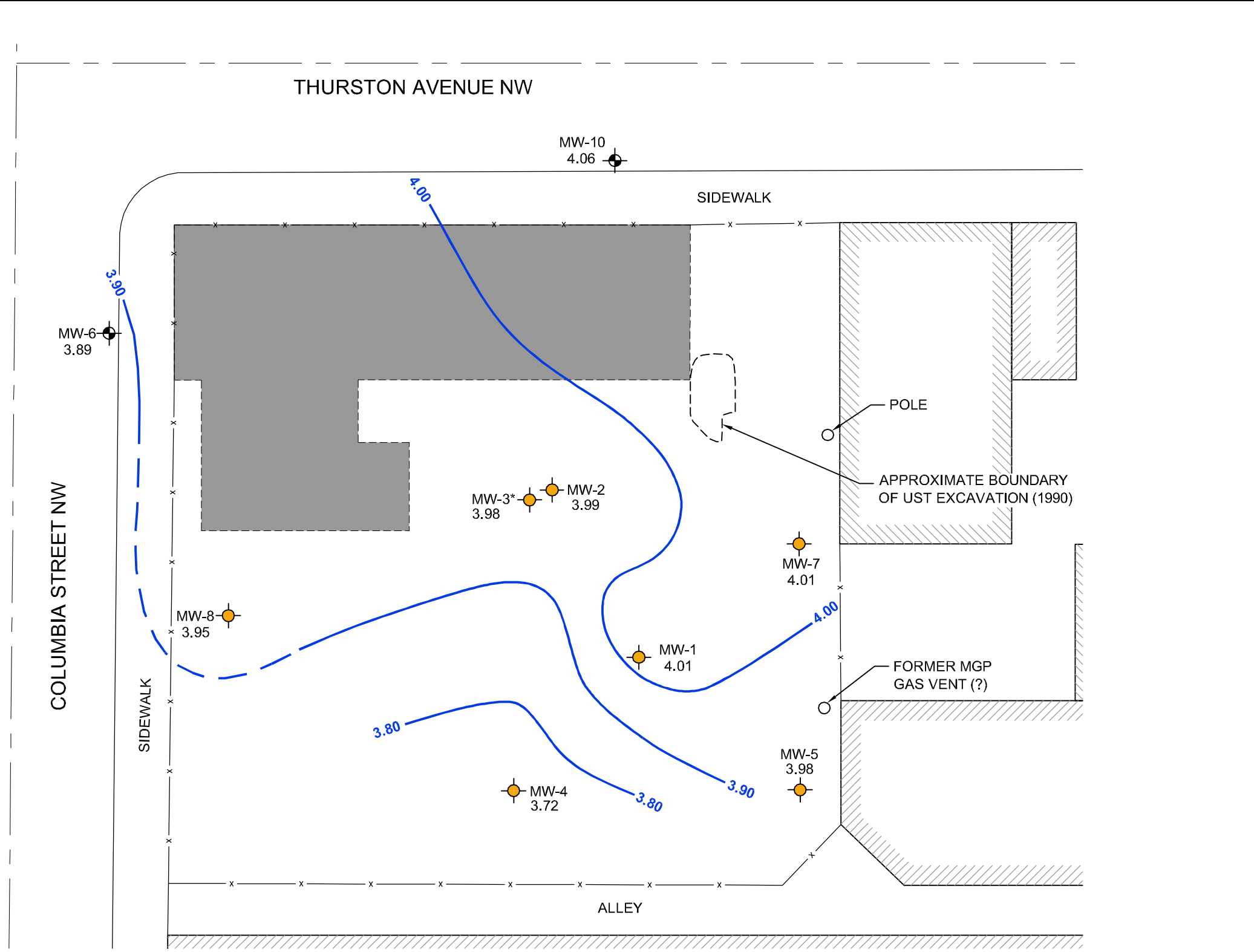
Detections are shown in bold typeface.

Red box around the result indicates the value exceeds the associated MTCA cleanup level.



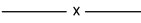



Chemical analyses (except cyanide) performed by OnSite Environmental, Inc. in Redmond, WA; cyanide analysis performed by Analytical Resources, Inc. in Seattle, WA.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

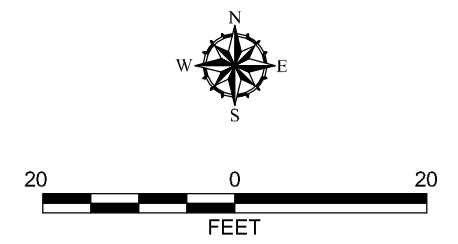
P:\010186774\00\TASK 0200 - SUPPLEMENTAL SI & CAP\CAD\GW MON REPORT MAY 2010\018677400_T0200_GWPR_MAY_2010_FI.DWG\TAB:FI MODIFIED BY TMICHAUD ON JUL 30, 2010 - 9:46



Legend


-  Existing building
-  Former office building (demolished 10/2009)
-  Existing fence
-  4.40 Interpolated groundwater elevation contour (feet); dashed where inferred
-  Pre-existing monitoring well
-  Monitoring well (GeoEngineers 2008, 2009)

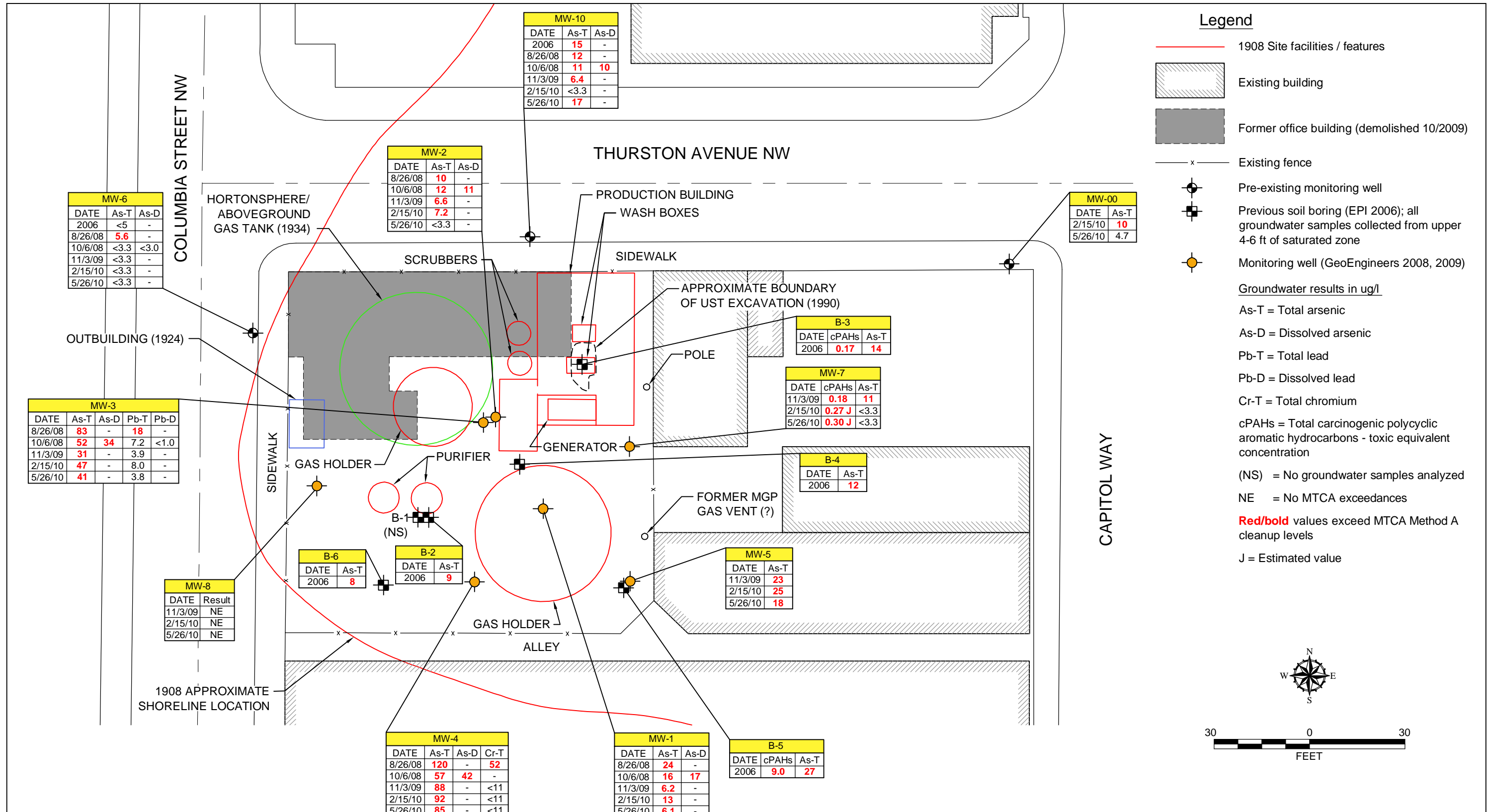
* Well MW-3 screened from 39.5-44.5 feet bgs; groundwater elevation not used for contouring.



Notes

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Groundwater Potentiometric Surface Map May 26, 2010	
Former Columbia Street MGP Property Olympia, Washington	
	Figure 1



Notes

- The locations of all features shown are approximate.
- This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Constituents Detected Above MTCA Method A Cleanup Levels in Groundwater

Former Columbia Street MGP Property
Olympia, Washington

Figure 2

ATTACHMENT A
DATA QUALITY ASSESSMENT SUMMARY
cPAHs, NWTPH-Gx/BTEX, NWTPH-Dx, TOTAL METALS

Project: Columbia Street MGP Supplemental Site
Investigation (Project No. 0186-774-00-0200)
May 2010 Groundwater Monitoring Event

LABORATORY SAMPLE DELIVERY GROUP (SDG):
1005-217

This Data Quality Assessment Summary documents the results of a United States Environmental Protection Agency (USEPA) Level 2b data validation/verification of analytical data from the analysis of groundwater samples and laboratory and field quality control (QC) samples associated with the subject project. OnSite Environmental of Redmond, Washington performed the sample analyses. The assessment was performed by GeoEngineers, and included the QC elements listed below. Any data anomalies and/or deficiencies identified during the data quality assessment are noted.

- Sample holding times and sample preservation
- Surrogates (for organics only)
- Method blanks, trip blanks (sample "TRIP BLANK" dated 5/26/10), and equipment rinsate blanks (sample "RINSE" dated 5/26/10)
- Laboratory control samples/laboratory control sample duplicates (LCS/LCSD)
- Matrix spikes/matrix spike duplicates (MS/MSD)

Metals – MS/MSD analysis was performed on equipment rinsate blank "RINSE". Consequently, the MS/MSD results were not used to assess analytical precision and accuracy for the project groundwater samples. Precision was assessed using the laboratory duplicate relative percent difference (RPD) values, which were all within the control limits. There were no other measurements of accuracy that were taken through the digestion process. The laboratory did, however, report instrument continuing calibration percent difference (%D) values, which provided some measurement of accuracy. No other action was taken other than to note this discrepancy.

- Field duplicates
cPAHs – **One** primary and field duplicate sample pair (MW-7 and DUP-052610) was assessed. The RPD and/or absolute difference values were greater than the control limits for the following compounds: benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene, and dibenzo(a,h)-anthracene. Positive detections of these compounds were qualified "J" (estimated concentration) in both samples of the primary/duplicate pair.
- Laboratory duplicates
- Instrument tunes
- Internal standards
- Calibrations (initial and continuing)
- Project-required target reporting limits

Overall Assessment

The results of this USEPA Level 2b data validation/verification indicate that the laboratory followed the specified analytical methods. Accuracy was acceptable, as demonstrated by the surrogate, MS/MSD, and LCS/LCSD percent recovery values. Precision was acceptable, as demonstrated by the field duplicate, laboratory duplicate, MS/MSD, and LCS/LCSD RPD values. Selected sample results were qualified "J" (estimated concentration) due to field duplicate precision outliers. All data are acceptable for the intended use.

ATTACHMENT B



14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

June 7, 2010

Rob Leet
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 0186-774-00; PSE-Olympia-MGP
Laboratory Reference No. 1005-217

Dear Rob:

Enclosed are the analytical results and associated quality control data for samples submitted on May 27, 2010.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "DB", with a long horizontal flourish extending to the right.

David Baumeister
Project Manager

Enclosures

Date of Report: June 7, 2010
Samples Submitted: May 27, 2010
Laboratory Reference: 1005-217
Project: 0186-774-00; PSE-Olympia-MGP

Case Narrative

Samples were collected on May 26, 2010 and received by the laboratory on May 27, 2010. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: June 7, 2010
Samples Submitted: May 27, 2010
Laboratory Reference: 1005-217
Project: 0186-774-00; PSE-Olympia-MGP

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
MW-1	05-217-01	Water	5-26-10	5-27-10	
MW-2	05-217-02	Water	5-26-10	5-27-10	
MW-3	05-217-03	Water	5-26-10	5-27-10	
MW-4	05-217-04	Water	5-26-10	5-27-10	
MW-5	05-217-05	Water	5-26-10	5-27-10	
MW-6	05-217-06	Water	5-26-10	5-27-10	
MW-7	05-217-07	Water	5-26-10	5-27-10	
MW-8	05-217-08	Water	5-26-10	5-27-10	
MW-10	05-217-09	Water	5-26-10	5-27-10	
MW-00	05-217-10	Water	5-26-10	5-27-10	
DUP-052610	05-217-11	Water	5-26-10	5-27-10	
RINSE	05-217-12	Water	5-26-10	5-27-10	
TRIP BLANK	05-217-13	Water	5-26-10	5-27-10	

Date of Report: June 7, 2010
 Samples Submitted: May 27, 2010
 Laboratory Reference: 1005-217
 Project: 0186-774-00; PSE-Olympia-MGP

NWTPH-Gx/BTEX

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	MW-2					
Laboratory ID:	05-217-02					
Benzene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Toluene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Ethyl Benzene	ND	1.0	EPA 8021	5-28-10	5-28-10	
m,p-Xylene	ND	1.0	EPA 8021	5-28-10	5-28-10	
o-Xylene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Gasoline	ND	100	NWTPH-Gx	5-28-10	5-28-10	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	97	74-121				
Client ID:	MW-5					
Laboratory ID:	05-217-05					
Benzene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Toluene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Ethyl Benzene	ND	1.0	EPA 8021	5-28-10	5-28-10	
m,p-Xylene	ND	1.0	EPA 8021	5-28-10	5-28-10	
o-Xylene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Gasoline	ND	100	NWTPH-Gx	5-28-10	5-28-10	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	97	74-121				
Client ID:	MW-6					
Laboratory ID:	05-217-06					
Benzene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Toluene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Ethyl Benzene	ND	1.0	EPA 8021	5-28-10	5-28-10	
m,p-Xylene	ND	1.0	EPA 8021	5-28-10	5-28-10	
o-Xylene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Gasoline	ND	100	NWTPH-Gx	5-28-10	5-28-10	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	99	74-121				

Date of Report: June 7, 2010
 Samples Submitted: May 27, 2010
 Laboratory Reference: 1005-217
 Project: 0186-774-00; PSE-Olympia-MGP

NWTPH-Gx/BTEX

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	MW-7					
Laboratory ID:	05-217-07					
Benzene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Toluene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Ethyl Benzene	ND	1.0	EPA 8021	5-28-10	5-28-10	
m,p-Xylene	ND	1.0	EPA 8021	5-28-10	5-28-10	
o-Xylene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Gasoline	ND	100	NWTPH-Gx	5-28-10	5-28-10	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	96	74-121				
Client ID:	MW-8					
Laboratory ID:	05-217-08					
Benzene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Toluene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Ethyl Benzene	ND	1.0	EPA 8021	5-28-10	5-28-10	
m,p-Xylene	ND	1.0	EPA 8021	5-28-10	5-28-10	
o-Xylene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Gasoline	ND	100	NWTPH-Gx	5-28-10	5-28-10	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	97	74-121				
Client ID:	MW-10					
Laboratory ID:	05-217-09					
Benzene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Toluene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Ethyl Benzene	ND	1.0	EPA 8021	5-28-10	5-28-10	
m,p-Xylene	ND	1.0	EPA 8021	5-28-10	5-28-10	
o-Xylene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Gasoline	ND	100	NWTPH-Gx	5-28-10	5-28-10	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	94	74-121				

Date of Report: June 7, 2010
 Samples Submitted: May 27, 2010
 Laboratory Reference: 1005-217
 Project: 0186-774-00; PSE-Olympia-MGP

NWTPH-Gx/BTEX

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	DUP-052610					
Laboratory ID:	05-217-11					
Benzene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Toluene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Ethyl Benzene	ND	1.0	EPA 8021	5-28-10	5-28-10	
m,p-Xylene	ND	1.0	EPA 8021	5-28-10	5-28-10	
o-Xylene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Gasoline	ND	100	NWTPH-Gx	5-28-10	5-28-10	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	96	74-121				
Client ID:	RINSE					
Laboratory ID:	05-217-12					
Benzene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Toluene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Ethyl Benzene	ND	1.0	EPA 8021	5-28-10	5-28-10	
m,p-Xylene	ND	1.0	EPA 8021	5-28-10	5-28-10	
o-Xylene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Gasoline	ND	100	NWTPH-Gx	5-28-10	5-28-10	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	97	74-121				
Client ID:	TRIP BLANK					
Laboratory ID:	05-217-13					
Benzene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Toluene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Ethyl Benzene	ND	1.0	EPA 8021	5-28-10	5-28-10	
m,p-Xylene	ND	1.0	EPA 8021	5-28-10	5-28-10	
o-Xylene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Gasoline	ND	100	NWTPH-Gx	5-28-10	5-28-10	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	97	74-121				

Date of Report: June 7, 2010
 Samples Submitted: May 27, 2010
 Laboratory Reference: 1005-217
 Project: 0186-774-00; PSE-Olympia-MGP

NWTPH-Dx

Matrix: Water
 Units: mg/L (ppm)

Analyte	Result	PQL	Date		Flags
			Prepared	Analyzed	
Lab ID:	05-217-02				
Client ID:	MW-2				
Diesel Range	ND	0.26	6-1-10	6-1-10	Y
Lube Oil Range	ND	0.41	6-1-10	6-1-10	Y
Surrogate: o-terphenyl	101%	50-150			
Lab ID:	05-217-05				
Client ID:	MW-5				
Diesel Range	ND	0.26	6-1-10	6-1-10	Y
Lube Oil Range	ND	0.41	6-1-10	6-1-10	Y
Surrogate: o-terphenyl	94%	50-150			
Lab ID:	05-217-06				
Client ID:	MW-6				
Diesel Range	ND	0.26	6-1-10	6-1-10	Y
Lube Oil Range	ND	0.41	6-1-10	6-1-10	Y
Surrogate: o-terphenyl	88%	50-150			
Lab ID:	05-217-07				
Client ID:	MW-7				
Diesel Range	ND	0.26	6-1-10	6-1-10	Y
Lube Oil Range	ND	0.41	6-1-10	6-1-10	Y
Surrogate: o-terphenyl	92%	50-150			
Lab ID:	05-217-08				
Client ID:	MW-8				
Diesel Range	ND	0.26	6-1-10	6-1-10	Y
Lube Oil Range	ND	0.42	6-1-10	6-1-10	Y
Surrogate: o-terphenyl	92%	50-150			

Date of Report: June 7, 2010
 Samples Submitted: May 27, 2010
 Laboratory Reference: 1005-217
 Project: 0186-774-00; PSE-Olympia-MGP

NWTPH-Dx

Matrix: Water
 Units: mg/L (ppm)

Analyte	Result	PQL	Date	Date	Flags
			Prepared	Analyzed	
Lab ID:	05-217-09				
Client ID:	MW-10				
Diesel Range	ND	0.26	6-1-10	6-1-10	Y
Lube Oil Range	ND	0.41	6-1-10	6-1-10	Y
Surrogate: o-terphenyl	89%	50-150			

Lab ID:	05-217-11				
Client ID:	DUP-052610				
Diesel Range	ND	0.26	6-1-10	6-1-10	Y
Lube Oil Range	ND	0.41	6-1-10	6-1-10	Y
Surrogate: o-terphenyl	96%	50-150			

Lab ID:	05-217-12				
Client ID:	RINSE				
Diesel Range	ND	0.26	6-1-10	6-1-10	Y
Lube Oil Range	ND	0.41	6-1-10	6-1-10	Y
Surrogate: o-terphenyl	91%	50-150			

Date of Report: June 7, 2010
 Samples Submitted: May 27, 2010
 Laboratory Reference: 1005-217
 Project: 0186-774-00; PSE-Olympia-MGP

cPAHs by EPA 8270D/SIM

Matrix: Water
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	MW-1					
Laboratory ID:	05-217-01					
Benzo[a]anthracene	ND	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Chrysene	ND	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[b]fluoranthene	ND	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[k]fluoranthene	ND	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[a]pyrene	ND	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Indeno(1,2,3-c,d)pyrene	ND	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Dibenz[a,h]anthracene	ND	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>2-Fluorobiphenyl</i>	<i>66</i>	<i>47 - 105</i>				
<i>Pyrene-d10</i>	<i>64</i>	<i>35 - 129</i>				
<i>Terphenyl-d14</i>	<i>52</i>	<i>36 - 106</i>				
Client ID:	MW-2					
Laboratory ID:	05-217-02					
Benzo[a]anthracene	ND	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Chrysene	ND	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[b]fluoranthene	ND	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[k]fluoranthene	ND	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[a]pyrene	ND	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Indeno(1,2,3-c,d)pyrene	ND	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Dibenz[a,h]anthracene	ND	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>2-Fluorobiphenyl</i>	<i>68</i>	<i>47 - 105</i>				
<i>Pyrene-d10</i>	<i>74</i>	<i>35 - 129</i>				
<i>Terphenyl-d14</i>	<i>73</i>	<i>36 - 106</i>				
Client ID:	MW-3					
Laboratory ID:	05-217-03					
Benzo[a]anthracene	ND	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Chrysene	ND	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[b]fluoranthene	ND	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[k]fluoranthene	ND	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[a]pyrene	ND	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Indeno(1,2,3-c,d)pyrene	ND	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Dibenz[a,h]anthracene	ND	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>2-Fluorobiphenyl</i>	<i>71</i>	<i>47 - 105</i>				
<i>Pyrene-d10</i>	<i>52</i>	<i>35 - 129</i>				
<i>Terphenyl-d14</i>	<i>43</i>	<i>36 - 106</i>				

Date of Report: June 7, 2010
 Samples Submitted: May 27, 2010
 Laboratory Reference: 1005-217
 Project: 0186-774-00; PSE-Olympia-MGP

cPAHs by EPA 8270D/SIM

Matrix: Water
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	MW-4					
Laboratory ID:	05-217-04					
Benzo[a]anthracene	0.013	0.0094	EPA 8270/SIM	5-27-10	5-28-10	
Chrysene	ND	0.0094	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[b]fluoranthene	ND	0.0094	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[k]fluoranthene	ND	0.0094	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[a]pyrene	ND	0.0094	EPA 8270/SIM	5-27-10	5-28-10	
Indeno(1,2,3-c,d)pyrene	ND	0.0094	EPA 8270/SIM	5-27-10	5-28-10	
Dibenz[a,h]anthracene	ND	0.0094	EPA 8270/SIM	5-27-10	5-28-10	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>2-Fluorobiphenyl</i>	<i>71</i>	<i>47 - 105</i>				
<i>Pyrene-d10</i>	<i>83</i>	<i>35 - 129</i>				
<i>Terphenyl-d14</i>	<i>77</i>	<i>36 - 106</i>				
Client ID:	MW-5					
Laboratory ID:	05-217-05					
Benzo[a]anthracene	0.021	0.0096	EPA 8270/SIM	5-27-10	5-28-10	
Chrysene	0.017	0.0096	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[b]fluoranthene	0.014	0.0096	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[k]fluoranthene	0.012	0.0096	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[a]pyrene	0.017	0.0096	EPA 8270/SIM	5-27-10	5-28-10	
Indeno(1,2,3-c,d)pyrene	0.015	0.0096	EPA 8270/SIM	5-27-10	5-28-10	
Dibenz[a,h]anthracene	0.0098	0.0096	EPA 8270/SIM	5-27-10	5-28-10	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>2-Fluorobiphenyl</i>	<i>66</i>	<i>47 - 105</i>				
<i>Pyrene-d10</i>	<i>76</i>	<i>35 - 129</i>				
<i>Terphenyl-d14</i>	<i>72</i>	<i>36 - 106</i>				
Client ID:	MW-6					
Laboratory ID:	05-217-06					
Benzo[a]anthracene	ND	0.0097	EPA 8270/SIM	5-27-10	5-28-10	
Chrysene	ND	0.0097	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[b]fluoranthene	ND	0.0097	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[k]fluoranthene	ND	0.0097	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[a]pyrene	ND	0.0097	EPA 8270/SIM	5-27-10	5-28-10	
Indeno(1,2,3-c,d)pyrene	ND	0.0097	EPA 8270/SIM	5-27-10	5-28-10	
Dibenz[a,h]anthracene	ND	0.0097	EPA 8270/SIM	5-27-10	5-28-10	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>2-Fluorobiphenyl</i>	<i>69</i>	<i>47 - 105</i>				
<i>Pyrene-d10</i>	<i>67</i>	<i>35 - 129</i>				
<i>Terphenyl-d14</i>	<i>73</i>	<i>36 - 106</i>				

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 Project: 0186-774-00; PSE-Olympia-MGP

cPAHs by EPA 8270D/SIM

Matrix: Water
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	MW-7					
Laboratory ID:	05-217-07					
Benzo[a]anthracene	0.084	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Chrysene	0.12	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[b]fluoranthene	0.16	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[k]fluoranthene	0.10	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[a]pyrene	0.23	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Indeno(1,2,3-c,d)pyrene	0.28	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
Dibenz[a,h]anthracene	0.032	0.0095	EPA 8270/SIM	5-27-10	5-28-10	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>2-Fluorobiphenyl</i>	<i>70</i>	<i>47 - 105</i>				
<i>Pyrene-d10</i>	<i>71</i>	<i>35 - 129</i>				
<i>Terphenyl-d14</i>	<i>75</i>	<i>36 - 106</i>				
Client ID:	MW-8					
Laboratory ID:	05-217-08					
Benzo[a]anthracene	ND	0.0095	EPA 8270/SIM	5-27-10	5-29-10	
Chrysene	ND	0.0095	EPA 8270/SIM	5-27-10	5-29-10	
Benzo[b]fluoranthene	ND	0.0095	EPA 8270/SIM	5-27-10	5-29-10	
Benzo[k]fluoranthene	ND	0.0095	EPA 8270/SIM	5-27-10	5-29-10	
Benzo[a]pyrene	ND	0.0095	EPA 8270/SIM	5-27-10	5-29-10	
Indeno(1,2,3-c,d)pyrene	ND	0.0095	EPA 8270/SIM	5-27-10	5-29-10	
Dibenz[a,h]anthracene	ND	0.0095	EPA 8270/SIM	5-27-10	5-29-10	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>2-Fluorobiphenyl</i>	<i>58</i>	<i>47 - 105</i>				
<i>Pyrene-d10</i>	<i>68</i>	<i>35 - 129</i>				
<i>Terphenyl-d14</i>	<i>66</i>	<i>36 - 106</i>				
Client ID:	MW-10					
Laboratory ID:	05-217-09					
Benzo[a]anthracene	0.010	0.0096	EPA 8270/SIM	5-27-10	5-29-10	
Chrysene	ND	0.0096	EPA 8270/SIM	5-27-10	5-29-10	
Benzo[b]fluoranthene	ND	0.0096	EPA 8270/SIM	5-27-10	5-29-10	
Benzo[k]fluoranthene	ND	0.0096	EPA 8270/SIM	5-27-10	5-29-10	
Benzo[a]pyrene	ND	0.0096	EPA 8270/SIM	5-27-10	5-29-10	
Indeno(1,2,3-c,d)pyrene	ND	0.0096	EPA 8270/SIM	5-27-10	5-29-10	
Dibenz[a,h]anthracene	ND	0.0096	EPA 8270/SIM	5-27-10	5-29-10	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>2-Fluorobiphenyl</i>	<i>70</i>	<i>47 - 105</i>				
<i>Pyrene-d10</i>	<i>53</i>	<i>35 - 129</i>				
<i>Terphenyl-d14</i>	<i>44</i>	<i>36 - 106</i>				

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 Project: 0186-774-00; PSE-Olympia-MGP

cPAHs by EPA 8270D/SIM

Matrix: Water

Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	DUP-052610					
Laboratory ID:	05-217-11					
Benzo[a]anthracene	0.12	0.0095	EPA 8270/SIM	5-27-10	5-29-10	
Chrysene	0.17	0.0095	EPA 8270/SIM	5-27-10	5-29-10	
Benzo[b]fluoranthene	0.24	0.0095	EPA 8270/SIM	5-27-10	5-29-10	
Benzo[k]fluoranthene	0.17	0.0095	EPA 8270/SIM	5-27-10	5-29-10	
Benzo[a]pyrene	0.37	0.0095	EPA 8270/SIM	5-27-10	5-29-10	
Indeno(1,2,3-c,d)pyrene	0.42	0.0095	EPA 8270/SIM	5-27-10	5-29-10	
Dibenz[a,h]anthracene	0.048	0.0095	EPA 8270/SIM	5-27-10	5-29-10	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>2-Fluorobiphenyl</i>	<i>69</i>	<i>47 - 105</i>				
<i>Pyrene-d10</i>	<i>64</i>	<i>35 - 129</i>				
<i>Terphenyl-d14</i>	<i>69</i>	<i>36 - 106</i>				
Client ID:	RINSE					
Laboratory ID:	05-217-12					
Benzo[a]anthracene	ND	0.0094	EPA 8270/SIM	5-27-10	5-29-10	
Chrysene	ND	0.0094	EPA 8270/SIM	5-27-10	5-29-10	
Benzo[b]fluoranthene	ND	0.0094	EPA 8270/SIM	5-27-10	5-29-10	
Benzo[k]fluoranthene	ND	0.0094	EPA 8270/SIM	5-27-10	5-29-10	
Benzo[a]pyrene	ND	0.0094	EPA 8270/SIM	5-27-10	5-29-10	
Indeno(1,2,3-c,d)pyrene	ND	0.0094	EPA 8270/SIM	5-27-10	5-29-10	
Dibenz[a,h]anthracene	ND	0.0094	EPA 8270/SIM	5-27-10	5-29-10	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>2-Fluorobiphenyl</i>	<i>73</i>	<i>47 - 105</i>				
<i>Pyrene-d10</i>	<i>79</i>	<i>35 - 129</i>				
<i>Terphenyl-d14</i>	<i>84</i>	<i>36 - 106</i>				

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 Project: 0186-774-00; PSE-Olympia-MGP

TOTAL METALS
EPA 200.8/7470A

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	05-217-01					
Client ID:	MW-1					
Arsenic	6.1	3.3	200.8	6-4-10	6-4-10	
Chromium	ND	11	200.8	6-4-10	6-4-10	
Lead	ND	1.1	200.8	6-4-10	6-4-10	
Mercury	ND	0.50	7470A	6-4-10	6-4-10	
Lab ID:	05-217-02					
Client ID:	MW-2					
Arsenic	ND	3.3	200.8	6-4-10	6-4-10	
Chromium	ND	11	200.8	6-4-10	6-4-10	
Lead	ND	1.1	200.8	6-4-10	6-4-10	
Mercury	ND	0.50	7470A	6-4-10	6-4-10	
Lab ID:	05-217-03					
Client ID:	MW-3					
Arsenic	41	3.3	200.8	6-4-10	6-4-10	
Chromium	ND	11	200.8	6-4-10	6-4-10	
Lead	3.8	1.1	200.8	6-4-10	6-4-10	
Mercury	ND	0.50	7470A	6-4-10	6-4-10	
Lab ID:	05-217-04					
Client ID:	MW-4					
Arsenic	85	3.3	200.8	6-4-10	6-4-10	
Chromium	ND	11	200.8	6-4-10	6-4-10	
Lead	ND	1.1	200.8	6-4-10	6-4-10	
Mercury	ND	0.50	7470A	6-4-10	6-4-10	

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TOTAL METALS
EPA 200.8/7470A

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	EPA Method	Date	Date	Flags
				Prepared	Analyzed	
Lab ID:	05-217-05					
Client ID:	MW-5					
Arsenic	18	3.3	200.8	6-4-10	6-4-10	
Chromium	ND	11	200.8	6-4-10	6-4-10	
Lead	ND	1.1	200.8	6-4-10	6-4-10	
Mercury	ND	0.50	7470A	6-4-10	6-4-10	

Lab ID:	05-217-06					
Client ID:	MW-6					
Arsenic	ND	3.3	200.8	6-4-10	6-4-10	
Chromium	ND	11	200.8	6-4-10	6-4-10	
Lead	2.5	1.1	200.8	6-4-10	6-4-10	
Mercury	ND	0.50	7470A	6-4-10	6-4-10	

Lab ID:	05-217-07					
Client ID:	MW-7					
Arsenic	ND	3.3	200.8	6-4-10	6-4-10	
Chromium	ND	11	200.8	6-4-10	6-4-10	
Lead	ND	1.1	200.8	6-4-10	6-4-10	
Mercury	ND	0.50	7470A	6-4-10	6-4-10	

Lab ID:	05-217-08					
Client ID:	MW-8					
Arsenic	ND	3.3	200.8	6-4-10	6-4-10	
Chromium	ND	11	200.8	6-4-10	6-4-10	
Lead	ND	1.1	200.8	6-4-10	6-4-10	
Mercury	ND	0.50	7470A	6-4-10	6-4-10	

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TOTAL METALS
EPA 200.8/7470A

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	EPA Method	Date	Date	Flags
				Prepared	Analyzed	
Lab ID:	05-217-09					
Client ID:	MW-10					
Arsenic	17	3.3	200.8	6-4-10	6-4-10	
Chromium	ND	11	200.8	6-4-10	6-4-10	
Lead	9.7	1.1	200.8	6-4-10	6-4-10	
Mercury	ND	0.50	7470A	6-4-10	6-4-10	

Lab ID:	05-217-10					
Client ID:	MW-00					
Arsenic	4.7	3.3	200.8	6-4-10	6-4-10	

Lab ID:	05-217-11					
Client ID:	DUP-052610					
Arsenic	ND	3.3	200.8	6-4-10	6-4-10	
Chromium	ND	11	200.8	6-4-10	6-4-10	
Lead	ND	1.1	200.8	6-4-10	6-4-10	
Mercury	ND	0.50	7470A	6-4-10	6-4-10	

Lab ID:	05-217-12					
Client ID:	RINSE					
Arsenic	ND	3.3	200.8	6-4-10	6-4-10	
Chromium	ND	11	200.8	6-4-10	6-4-10	
Lead	ND	1.1	200.8	6-4-10	6-4-10	
Mercury	ND	0.50	7470A	6-4-10	6-4-10	

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**NWTPH-Gx/BTEX
 QUALITY CONTROL**

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0528W2					
Benzene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Toluene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Ethyl Benzene	ND	1.0	EPA 8021	5-28-10	5-28-10	
m,p-Xylene	ND	1.0	EPA 8021	5-28-10	5-28-10	
o-Xylene	ND	1.0	EPA 8021	5-28-10	5-28-10	
Gasoline	ND	100	NWTPH-Gx	5-28-10	5-28-10	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	97	74-121				

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	05-217-05							
	ORIG	DUP						
Benzene	ND	ND	NA	NA	NA	NA	30	
Toluene	ND	ND	NA	NA	NA	NA	30	
Ethyl Benzene	ND	ND	NA	NA	NA	NA	30	
m,p-Xylene	ND	ND	NA	NA	NA	NA	30	
o-Xylene	ND	ND	NA	NA	NA	NA	30	
Gasoline	ND	ND	NA	NA	NA	NA	30	
<i>Surrogate:</i>								
<i>Fluorobenzene</i>				97	97	74-121		

MATRIX SPIKES

Laboratory ID:	05-217-02									
	MS	MSD	MS	MSD		MS	MSD			
Benzene	52.7	52.7	50.0	50.0	ND	105	105	78-118	0	8
Toluene	52.9	53.1	50.0	50.0	ND	106	106	81-119	0	8
Ethyl Benzene	54.0	54.0	50.0	50.0	ND	108	108	81-121	0	8
m,p-Xylene	52.8	53.0	50.0	50.0	ND	106	106	79-123	0	8
o-Xylene	53.0	52.5	50.0	50.0	ND	106	105	79-121	1	8
<i>Surrogate:</i>										
<i>Fluorobenzene</i>						99	99	74-121		

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NWTPH-Gx
CONTINUING CALIBRATION SUMMARY

Lab ID	True Value (ppm)	Calc. Value	Percent Difference	Control Limits
CCVD0528G-1	5.00	5.17	-3	+/- 20%
CCVD0528G-2	5.00	5.37	-7	+/- 20%
CCVH0528G-1	5.00	5.12	-2	+/- 20%
CCVH0528G-2	5.00	4.64	7	+/- 20%

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**BTEX by
 EPA 8021B
 CONTINUING CALIBRATION SUMMARY**

Analyte	Lab ID	True Value (ppm)	Calc. Value	Percent Difference	Control Limits
Benzene	CCVD0528B-1	50.0	51.8	-4	+/- 15%
Toluene	CCVD0528B-1	50.0	52.4	-5	+/- 15%
Ethyl Benzene	CCVD0528B-1	50.0	52.6	-5	+/- 15%
m,p-Xylene	CCVD0528B-1	50.0	52.3	-5	+/- 15%
o-Xylene	CCVD0528B-1	50.0	52.2	-4	+/- 15%
Benzene	CCVD0528B-2	50.0	54.4	-9	+/- 15%
Toluene	CCVD0528B-2	50.0	54.8	-10	+/- 15%
Ethyl Benzene	CCVD0528B-2	50.0	56.3	-13	+/- 15%
m,p-Xylene	CCVD0528B-2	50.0	55.4	-11	+/- 15%
o-Xylene	CCVD0528B-2	50.0	55.5	-11	+/- 15%
Benzene	CCVD0528B-3	50.0	50.0	0	+/- 15%
Toluene	CCVD0528B-3	50.0	51.2	-2	+/- 15%
Ethyl Benzene	CCVD0528B-3	50.0	53.0	-6	+/- 15%
m,p-Xylene	CCVD0528B-3	50.0	52.8	-6	+/- 15%
o-Xylene	CCVD0528B-3	50.0	52.9	-6	+/- 15%
Benzene	CCVH0528B-1	50.0	50.8	-2	+/- 15%
Toluene	CCVH0528B-1	50.0	51.5	-3	+/- 15%
Ethyl Benzene	CCVH0528B-1	50.0	51.8	-4	+/- 15%
m,p-Xylene	CCVH0528B-1	50.0	52.5	-5	+/- 15%
o-Xylene	CCVH0528B-1	50.0	51.9	-4	+/- 15%
Benzene	CCVH0528B-2	50.0	49.3	1	+/- 15%
Toluene	CCVH0528B-2	50.0	49.8	0	+/- 15%
Ethyl Benzene	CCVH0528B-2	50.0	50.5	-1	+/- 15%
m,p-Xylene	CCVH0528B-2	50.0	50.6	-1	+/- 15%
o-Xylene	CCVH0528B-2	50.0	50.4	-1	+/- 15%

OnSite Environmental, Inc. 14648 NE 95th Street, Redmond, WA 98052 (425) 883-3881

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

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Project: 0186-774-00; PSE-Olympia-MGP

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted: 6-1-10
Date Analyzed: 6-1-10

Matrix: Water
Units: mg/L (ppm)

Lab ID: MB0601W2

Diesel Range: **ND**
PQL: 0.25
Identification: ---

Lube Oil Range: **ND**
PQL: 0.40
Identification: ---

Surrogate Recovery
o-Terphenyl: 88%

Flags: Y

Date of Report: June 7, 2010
 Samples Submitted: May 27, 2010
 Laboratory Reference: 1005-217
 Project: 0186-774-00; PSE-Olympia-MGP

**NWTPH-Dx
 DUPLICATE QUALITY CONTROL**

Date Extracted: 6-1-10
 Date Analyzed: 6-1-10

Matrix: Water
 Units: mg/L (ppm)

Lab ID: 05-231-01 05-231-01 DUP

Diesel Range: **ND** **ND**
 PQL: 0.25 0.26

RPD: N/A

Surrogate Recovery
 o-Terphenyl: 88% 89%

Flags: Y Y

Date of Report: June 7, 2010
Samples Submitted: May 27, 2010
Laboratory Reference: 1005-217
Project: 0186-774-00; PSE-Olympia-MGP

**NWTPH-Dx
CONTINUING CALIBRATION SUMMARY**

Lab ID	True Value (ppm)	Calc. Value	Percent Difference	Contol Limits
DF2CCV0601F-V2	100	103	-3	+/-15%
DF2CCV0601F-V3	100	107	-7	+/-15%
DF2CCV0601F-V4	100	107	-7	+/-15%

Date of Report: June 7, 2010
 Samples Submitted: May 27, 2010
 Laboratory Reference: 1005-217
 Project: 0186-774-00; PSE-Olympia-MGP

**cPAHs by EPA 8270D/SIM
 METHOD BLANK QUALITY CONTROL**

Matrix: Water
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0527W1					
Benzo[a]anthracene	ND	0.010	EPA 8270/SIM	5-27-10	5-28-10	
Chrysene	ND	0.010	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[b]fluoranthene	ND	0.010	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[k]fluoranthene	ND	0.010	EPA 8270/SIM	5-27-10	5-28-10	
Benzo[a]pyrene	ND	0.010	EPA 8270/SIM	5-27-10	5-28-10	
Indeno(1,2,3-c,d)pyrene	ND	0.010	EPA 8270/SIM	5-27-10	5-28-10	
Dibenz[a,h]anthracene	ND	0.010	EPA 8270/SIM	5-27-10	5-28-10	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>2-Fluorobiphenyl</i>	<i>67</i>	<i>47 - 105</i>				
<i>Pyrene-d10</i>	<i>85</i>	<i>35 - 129</i>				
<i>Terphenyl-d14</i>	<i>75</i>	<i>36 - 106</i>				

Date of Report: June 7, 2010
 Samples Submitted: May 27, 2010
 Laboratory Reference: 1005-217
 Project: 0186-774-00; PSE-Olympia-MGP

**cPAHs by EPA 8270D/SIM
 SB/SBD QUALITY CONTROL**

Matrix: Water
 Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery	RPD	RPD	Flags
					Recovery	Limits	RPD	Limit		
SPIKE BLANKS										
Laboratory ID:	SB0527W1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	0.334	0.313	0.500	0.500	67	63	49 - 101	6	34	
Acenaphthylene	0.356	0.376	0.500	0.500	71	75	54 - 113	5	27	
Acenaphthene	0.358	0.367	0.500	0.500	72	73	55 - 101	2	24	
Fluorene	0.425	0.439	0.500	0.500	85	88	60 - 104	3	20	
Phenanthrene	0.469	0.467	0.500	0.500	94	93	61 - 99	0	16	
Anthracene	0.428	0.454	0.500	0.500	86	91	60 - 109	6	16	
Fluoranthene	0.457	0.488	0.500	0.500	91	98	66 - 111	7	16	
Pyrene	0.432	0.470	0.500	0.500	86	94	66 - 113	8	17	
Benzo[a]anthracene	0.504	0.575	0.500	0.500	101	115	56 - 115	13	17	
Chrysene	0.503	0.573	0.500	0.500	101	115	55 - 115	13	19	
Benzo[b]fluoranthene	0.438	0.473	0.500	0.500	88	95	60 - 112	8	17	
Benzo[k]fluoranthene	0.402	0.462	0.500	0.500	80	92	45 - 114	14	21	
Benzo[a]pyrene	0.440	0.477	0.500	0.500	88	95	52 - 113	8	19	
Indeno(1,2,3-c,d)pyrene	0.392	0.410	0.500	0.500	78	82	34 - 124	4	21	
Dibenz[a,h]anthracene	0.368	0.379	0.500	0.500	74	76	26 - 129	3	31	
Benzo[g,h,i]perylene	0.392	0.411	0.500	0.500	78	82	26 - 127	5	25	
<i>Surrogate:</i>										
2-Fluorobiphenyl					66	66	47 - 105			
Pyrene-d10					76	86	35 - 129			
Terphenyl-d14					74	81	36 - 106			

Date of Report: June 7, 2010
 Samples Submitted: May 27, 2010
 Laboratory Reference: 1005-217
 Project: 0186-774-00; PSE-Olympia-MGP

**TOTAL METALS
 EPA 200.8/7470A
 METHOD BLANK QUALITY CONTROL**

Date Extracted: 6-4-10
 Date Analyzed: 6-4-10

 Matrix: Water
 Units: ug/L (ppb)

 Lab ID: MB0604W1&MB0604W3

Analyte	Method	Result	PQL
Arsenic	200.8	ND	3.3
Chromium	200.8	ND	11
Lead	200.8	ND	1.1
Mercury	7470A	ND	0.50

Date of Report: June 7, 2010
 Samples Submitted: May 27, 2010
 Laboratory Reference: 1005-217
 Project: 0186-774-00; PSE-Olympia-MGP

**TOTAL METALS
 EPA 200.8/7470A
 DUPLICATE QUALITY CONTROL**

Date Extracted: 6-4-10

Date Analyzed: 6-4-10

Matrix: Water

Units: ug/L (ppb)

Lab ID: 05-217-12

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	ND	ND	NA	3.3	
Chromium	ND	ND	NA	11	
Lead	ND	ND	NA	1.1	
Mercury	ND	ND	NA	0.50	

Date of Report: June 7, 2010
 Samples Submitted: May 27, 2010
 Laboratory Reference: 1005-217
 Project: 0186-774-00; PSE-Olympia-MGP

**TOTAL METALS
 EPA 200.8/7470A
 MS/MSD QUALITY CONTROL**

Date Extracted: 6-4-10

Date Analyzed: 6-4-10

Matrix: Water

Units: ug/L (ppb)

Lab ID: 05-217-12

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	110	109	99	113	103	4	
Chromium	110	108	98	112	102	3	
Lead	110	110	100	111	101	1	
Mercury	12.5	12.3	98	12.2	98	0	

Date of Report: June 7, 2010
 Samples Submitted: May 27, 2010
 Laboratory Reference: 1005-217
 Project: 0186-774-00; PSE-Olympia-MGP

**TOTAL METALS
 EPA 200.8/7470A
 CONTINUING CALIBRATION SUMMARY**

Analyte	Lab ID	True Value (ppb)	Calc. Value	Percent Difference	Control Limits
Arsenic	ICV060410E	50.0	50.5	-1.0	+/- 10%
Chromium	ICV060410E	50.0	51.0	-2.0	+/- 10%
Lead	ICV060410E	50.0	50.6	-1.2	+/- 10%
Mercury	ICV060410E	5.00	4.96	0.80	+/- 10%
Arsenic	CCV1060410E	100	101	-1.0	+/- 10%
Chromium	CCV1060410E	100	99.5	0.50	+/- 10%
Lead	CCV1060410E	100	101	-1.0	+/- 10%
Mercury	CCV1060410E	5.00	4.95	1.0	+/- 20%
Arsenic	CCV1060410E	40.0	39.7	0.75	+/- 10%
Chromium	CCV1060410E	40.0	39.4	1.5	+/- 10%
Lead	CCV1060410E	40.0	39.5	1.3	+/- 10%
Arsenic	CCV2060410E	100	102	-2.0	+/- 10%
Chromium	CCV2060410E	100	101	-1.0	+/- 10%
Lead	CCV2060410E	100	100	0	+/- 10%
Mercury	CCV2060410E	5.00	4.89	2.2	+/- 20%
Arsenic	CCV2060410E	40.0	39.8	0.50	+/- 10%
Chromium	CCV2060410E	40.0	40.2	-0.50	+/- 10%
Lead	CCV2060410E	40.0	40.0	0	+/- 10%
Arsenic	CCV3060410E	100	99.6	0.40	+/- 10%
Chromium	CCV3060410E	100	103	-3.0	+/- 10%
Lead	CCV3060410E	100	100	0	+/- 10%
Mercury	CCV3060410E	5.00	5.02	-0.40	+/- 20%
Arsenic	CCV3060410E	40.0	39.5	1.3	+/- 10%
Chromium	CCV3060410E	40.0	41.2	-3.0	+/- 10%
Lead	CCV3060410E	40.0	39.5	1.3	+/- 10%



Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B - The analyte indicated was also found in the blank sample.
- C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E - The value reported exceeds the quantitation range and is an estimate.
- F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I - Compound recovery is outside of the control limits.
- J - The value reported was below the practical quantitation limit. The value is an estimate.
- K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L - The RPD is outside of the control limits.
- M - Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
- N - Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 - Hydrocarbons in diesel range are impacting lube oil range results.
- O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P - The RPD of the detected concentrations between the two columns is greater than 40.
- Q - Surrogate recovery is outside of the control limits.
- S - Surrogate recovery data is not available due to the necessary dilution of the sample.
- T - The sample chromatogram is not similar to a typical _____.
- U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 - The practical quantitation limit is elevated due to interferences present in the sample.
- V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X - Sample extract treated with a mercury cleanup procedure.
- Y - Sample extract treated with an acid/silica gel cleanup procedure.
- Z -
- ND - Not Detected at PQL
 PQL - Practical Quantitation Limit
 RPD - Relative Percent Difference

