SLR

October 29, 2008
Project 001.0173.00007

Mr. Tom Middleton
Washington Department of Ecology
P.O. Box 47775
Olympia, Washington 98504-7775

Re: Quarterly Groundwater Sampling Report – September/October 2008 Event, Former Arco Service Station #0855, Longview, Washington

Dear Mr. Middleton:

On behalf of the Wakefield Family LLC (property owner), SLR International Corp (SLR) has prepared this report to present the results of the quarterly groundwater sampling activities conducted in September and October 2008 at the above-referenced property (the site). The site is located at 4603 Ocean Beach Highway in Longview, Washington (Figure 1). The results of previous investigations showed that the groundwater beneath the site contains petroleum hydrocarbon concentrations greater than Model Toxics Control Act (MTCA) Method A cleanup levels[1]. Remediation activities were conducted in 2007 to: 1) remediate the soil that contained petroleum hydrocarbon concentrations greater than MTCA Method A cleanup levels, 2) remove the source of impacted shallow groundwater beneath the site, 3) remove the primary sources of the impacted deep groundwater beneath the site, and 4) extract the accessible impacted shallow groundwater. The purposes of the groundwater sampling program are to assess the effectiveness of these site remediation activities, and to monitor the migration and attenuation of the petroleum hydrocarbon concentrations over time in the shallow and deep aquifers.

SLR conducted the groundwater sampling activities on September 30 and October 1 and 2, 2008. Prior to sampling, SLR measured the depths to groundwater in all of the monitoring wells by using an electronic water level probe. The depth to groundwater measurements were converted to groundwater elevations by using the results of previous well elevation surveys conducted by Gibbs and Olson, Inc., of Longview, Washington. The depths to groundwater in the shallow wells ranged from 4.19 to 6.56 feet below the tops of the well casings. The groundwater elevations in the shallow wells ranged from 1.60 to 5.01 feet above the NAVD88 datum. The depths to groundwater in the deep wells ranged from 5.03 to 7.53 feet below the tops of the well casings. The groundwater elevations in the

[1] Chapter 173-340 WAC, Model Toxics Control Act (MTCA) Cleanup Regulation, Method A Cleanup Levels. Amended February 12, 2001.

deep wells ranged from 1.51 to 1.66 feet above the NAVD88 datum. The groundwater elevations in the shallow and deep wells were inconsistent and could not be used to determine general shallow or deep groundwater flow directions beneath the site area. The groundwater monitoring data from the September/October 2008 sampling event, as well as from the previous groundwater sampling events, are presented in Table 1. The groundwater elevations in the shallow and deep wells on September 30, 2008, are shown on Figures 2 and 3, respectively.

SLR personnel collected groundwater samples from all of the shallow monitoring wells (MW-5, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, and MW-14) and all of the deep monitoring wells (DMW-3, DMW-4, DMW-5, DMW-6, DMW-7, DMW-8, DMW-9, and DMW-10) for laboratory analysis. SLR purged the wells by using a peristaltic pump with dedicated tubing at a flow rate of approximately 0.33 liters per minute. During purging, field parameters of temperature, conductivity, dissolved oxygen (DO), pH, and oxidation-reduction potential were measured every three to five minutes. Each groundwater sample was collected following the stabilization of the field parameter measurements. The samples were labeled, placed on ice in a cooler, and submitted to Friedman & Bruya, Inc. (F&B) in Seattle, Washington for analysis, following standard chain-of-custody protocol. The purge water is stored on site in properly labeled, 55-gallon drums, pending off-site disposal.

The groundwater samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8021B, and gasoline-range organics (GRO) by Washington Department of Ecology (Ecology) Method NWTPH-Gx. The analytical results indicated that the groundwater sample from on-site deep wells DMW-5, DMW-9 and DMW-10 contained benzene concentrations [42, 3,300, and 90 micrograms per liter (µg/L), respectively] that exceeded the MTCA Method A cleanup level (5 µg/L). The samples collected from DMW-9 and DMW-10 also contained GRO concentrations (8,600 and 820 µg/L, respectively) that exceeded the Method A cleanup level (800 µg/l). The groundwater sample collected from on-site shallow well MW-10 contained a GRO concentration (1,300 µg/L) that exceeded the Method A cleanup level. The groundwater samples from all of the other shallow and deep wells did not contain analyte concentrations above the method reporting limits. The groundwater sample analytical results (petroleum hydrocarbons only) from the September/October 2008 event, as well as from the previous sampling events, are presented in Table 2. The benzene and GRO concentrations in the September/October 2008 samples from the shallow and deep wells are shown on Figures 2 and 3, respectively. Copies of the laboratory analytical reports are attached.

The groundwater samples were also analyzed for the following natural attenuation parameters: dissolved manganese by EPA Method 200.8, alkalinity by Standard Method SM 2320, dissolved methane by EPA Method RSK 175 Modified, sulfate by EPA Method 375.2, and nitrate by EPA Method 353.2. The groundwater sample analytical results and field measurements (DO, oxidation-reduction potential, and dissolved iron) for the natural attenuation parameters are presented in Table 3, and copies of the laboratory analytical reports are attached. The relatively higher dissolved methane and alkalinity concentrations in the areas of shallow and deep groundwater contamination are consistent with previous results, and indicate that the impacted groundwater occurs in reducing (little or no oxygen) environments and that there is more biological activity where petroleum hydrocarbons are present.

Conclusions

The groundwater sampling results from the shallow wells indicate that the 2007 remediation activities effectively removed the source of the shallow groundwater contamination and extracted most of the impacted water. The remaining petroleum hydrocarbon concentrations in the shallow groundwater that exceed the MTCA Method A cleanup levels only occur in one localized area (near well MW-10), and the concentrations appear to be decreasing due to natural attenuation.

The groundwater sampling results from the deep wells show that the 2007 remediation activities had limited short-term affects on the deep groundwater concentrations. However, the petroleum hydrocarbon concentrations are decreasing with distance away from the primary source area (the former dispenser island area) due to natural attenuation.

If you have any questions, please call Mike Staton at (425) 402-8800.

Sincerely,

SLR International Corp

Michael D. Staton, L.G.
Principal Geologist

Attachments: Limitations
Tables 1 through 3
Figures 1 through 3
Laboratory Analytical Reports

cc: Kurt Peterson, Cascadia Law Group PLLC (4 copies)

LIMITATIONS

The services reflected in this report were performed consistent with generally accepted professional consulting principals and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This information is solely for the use of our client unless otherwise noted. Any reliance on this information by a third party is at such party's sole risk.

Opinions and recommendations contained herein apply to conditions existing when services were performed and are intended only for the client, purposes, location, timeframes, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.

Table 1
Groundwater Monitoring Data
Former Arco Service Station #0855
Longview Washington

Well Number	Top of Casing Elevation[a] (feet)	Date Measured	Depth to Groundwater[b] (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
Shallow Monitoring Wells					
MW-1	8.34	03/27/00	4.36	NP	3.98
		05/23/00	5.20	NP	3.14
		07/20/00	5.55	NP	2.79
		10/18/00	5.41	NP	2.93
		01/18/01	4.81	NP	3.53
		04/18/01	4.58	NP	3.76
		07/17/01	5.54	NP	2.80
		10/18/01	5.26	NP	3.08
		01/16/02	4.45	NP	3.89
		07/09/03	5.80	NP	2.54
	8.25[c]	05/25/05	4.12	NP	4.13
		12/07/05	3.77	NP	4.48
		08/16/06	6.58	NP	1.67
		Well abandoned in September 2007.			
MW-2	8.76	03/27/00	3.61	NP	5.15
		05/23/00	4.64	NP	4.12
		07/20/00	5.06	NP	3.70
		10/18/00	5.19	NP	3.57
		01/18/00	3.96	NP	4.80
		04/18/01	3.83	NP	4.93
		07/17/01	5.08	NP	3.68
		10/18/01	4.83	NP	3.93
		01/16/02	3.71	NP	5.05
		07/09/03	5.36	NP	3.40
	8.89[c]	05/25/05	4.15	NP	4.74
		12/07/05	4.09	NP	4.80
		08/16/06	5.96	NP	2.93
		Well abandoned in September 2007.			
MW-3	8.78	03/27/00	5.61	NP	3.17
		05/23/00	6.46	NP	2.32
		07/20/00	7.05	NP	1.73
		10/18/00	6.84	NP	1.94
		01/18/01	6.37	NP	2.41
		04/18/01	5.46	NP	3.32
		07/17/01	6.93	NP	1.85
		10/18/01	6.47	NP	2.31
		01/16/01	4.83	NP	3.95
		07/09/03	6.72	0.02	2.08*
	8.58[c]	05/25/05	4.65	Film	3.93
		12/07/05	4.45	0.01	4.14*
		08/16/06	6.91	0.24	1.86*
		Well abandoned in September 2007.			
MW-4	8.78	11/15/00	6.88	NP	1.90
		01/18/01	6.78	NP	2.00
		04/18/01	6.90	NP	1.88
		07/17/01	7.50	NP	1.28
		10/18/01	6.92	NP	1.86
		01/16/02	6.15	NP	2.63
		07/09/03	7.04	NP	1.74
	8.69[c]	05/25/05	6.24	NP	2.45
		12/07/05	5.70	NP	2.99
		08/16/06	6.84	NP	1.85
		Well abandoned in September 2007.			

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Former Arco Service Station #0855
Longview Washington

Well Number	Top of Casing Elevation[a] (feet)	Date Measured	Depth to Groundwater[b] (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
Shallow Monitoring Wells (continued)					
MW-5	8.78	11/15/00	6.54	NP	2.24
		01/18/01	6.07	NP	2.71
		04/18/01	5.46	NP	3.32
		07/17/01	6.79	NP	1.99
		10/18/01	6.50	NP	2.28
		01/16/02	5.49	NP	3.29
		07/09/03	6.86	NP	1.92
	8.67[c]	05/25/05	5.64	NP	3.03
		12/07/05	5.53	NP	3.14
		08/16/06	6.28	NP	2.39
		12/11/07	4.64	NP	4.03
		03/11/08	4.90	NP	3.77
		07/01/08	5.33	NP	3.34
		09/30/08	6.17	NP	2.50
MW-6	8.21	11/15/00	6.15	NP	2.06
		01/18/01	5.85	NP	2.36
		04/18/01	5.70	NP	2.51
		07/17/01	6.02	NP	2.19
		10/18/01	6.03	NP	2.18
		01/16/02	5.80	NP	2.41
		07/09/03	6.16	NP	2.05
	8.11[c]	05/25/05	4.00	NP	4.11
		12/07/05	5.70	NP	2.41
		08/16/06	6.40	NP	1.71
		Well destroyed in November 2007.			
MW-7	8.45	11/15/00	6.52	NP	1.93
		01/18/01	6.24	NP	2.21
		04/18/01	5.98	NP	2.47
		07/17/01	6.44	NP	2.01
		10/18/01	6.39	NP	2.06
		01/16/02	6.31	NP	2.14
		07/09/03	7.00	NP	1.45
	8.26[c]	05/25/05	5.61	NP	2.65
		12/07/05	6.36[d]	NP	1.90
		08/16/06	6.40	NP	1.86
		Well abandoned in September 2007.			
MW-8	6.45	05/25/05	4.50	NP	1.95
		12/07/05	3.69	NP	2.76
		08/16/06	4.67	NP	1.78
		12/11/07	3.55	NP	2.90
		03/11/08	3.51	NP	2.94
		07/01/08	4.03	NP	2.42
		09/30/08	4.19	NP	2.26
MW-9	9.43	05/25/05	4.66	NP	4.77
		12/07/05	4.59	NP	4.84
		08/16/06	5.23	NP	4.20
		12/11/07	4.52	NP	4.91
		03/11/08	4.65	NP	4.78
		07/01/08	5.06	NP	4.37
		09/30/08	5.08	NP	4.35

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Groundwater Monitoring Data
Former Arco Service Station #0855
Longview Washington

Well Number	Top of Casing Elevation[a] (feet)	Date Measured	Depth to Groundwater[b] (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
Shallow Monitoring Wells (continued)					
MW-10	9.52	05/25/05	10.30	NP	-0.78
		12/07/05	5.90	NP	3.62
		08/16/06	7.18	NP	2.34
		12/11/07	4.22	NP	5.30
		03/11/08	6.02	NP	3.50
		07/01/08	6.53	NP	2.99
		09/30/08	4.51	NP	5.01
MW-11	8.16	12/07/05	3.87	NP	4.29
		08/16/06	6.10	NP	2.06
		12/11/07	3.51	NP	4.65
		03/11/08	4.86	NP	3.30
		07/01/08	5.61	NP	2.55
		09/30/08	6.56	NP	1.60
MW-12	8.21	12/11/07	2.69	NP	5.52
		03/11/08	4.25	NP	3.96
		07/01/08	5.20	NP	3.01
		09/30/08	5.85	NP	2.36
MW-13	9.03	12/11/07	1.10	NP	7.93
		03/11/08	1.53	NP	7.50
		07/01/08	3.53	NP	5.50
		09/30/08	4.73	NP	4.30
MW-14	8.39	12/11/07	1.50	NP	6.89
		03/11/08	3.85	NP	4.54
		07/01/08	4.27	NP	4.12
		09/30/08	6.44	NP	1.95
Deep Monitoring Wells					
DMW-1	8.55	12/07/05	6.73	NP	1.82
		08/16/06	6.28	NP	2.27
		Well abandoned in September 2007.			
DMW-2	8.29	12/07/05	6.10	NP	2.19
		08/16/06	6.71	NP	1.58
		Well abandoned in September 2007.			
DMW-3	6.66	12/07/05	12.15[d]	NP	-5.49
		08/16/06	4.55	NP	2.11
		12/11/07	4.60	NP	2.06
		03/11/08	5.68	NP	0.98
		07/01/08	5.52	NP	1.14
		09/30/08	5.03	NP	1.63
DMW-4	8.55	12/07/05	6.30	NP	2.25
		08/16/06	7.12	NP	1.43
		12/11/07	6.08	NP	2.47
		03/11/08	6.54	NP	2.01
		07/01/08	6.41	NP	2.14
		09/30/08	6.91	NP	1.64
DMW-5	8.14	12/07/05	5.88	NP	2.26
		08/16/06	6.57	NP	1.57
		12/11/07	5.75	NP	2.39
		03/11/08	6.14	NP	2.00
		07/01/08	5.01	NP	3.13
		09/30/08	6.52	NP	1.62
DMW-6	9.15	08/16/06	7.74	NP	1.41
		12/11/07	6.68	NP	2.47
		03/11/08	7.15	NP	2.00
		07/01/08	7.04	NP	2.11
		09/30/08	7.53	NP	1.62

Table 1
Groundwater Monitoring Data
Former Arco Service Station #0855
Longview Washington

Well Number	Top of Casing Elevation[a] (feet)	Date Measured	Depth to Groundwater[b] (feet)	Free Product Thickness (feet)	Groundwater Elevation (feet)
Deep Monitoring Wells (continued)					
DMW-7	8.12	08/16/06	6.68	NP	1.44
		12/11/07	5.68	NP	2.44
		03/11/08	6.11	NP	2.01
		07/01/08	6.02	NP	2.10
		09/30/08	6.61	NP	1.51
DMW-8	9.09	08/16/06	7.65	NP	1.44
		12/11/07	6.60	NP	2.49
		03/11/08	7.06	NP	2.03
		07/01/08	6.97	NP	2.12
		09/30/08	7.48	NP	1.61
DMW-9	8.86	12/11/07	5.39	NP	3.47
		03/11/08	6.84	NP	2.02
		07/01/08	6.85	NP	2.01
		09/30/08	7.20	NP	1.66
DMW-10	8.38	12/11/07	4.91	NP	3.47
		03/11/08	6.35	NP	2.03
		07/01/08	6.24	NP	2.14
		09/30/08	6.75	NP	1.63

NOTES:
NP = Free prroduct was not present.
[a] Top of well casing elevations were surveyed relative to NAVD 88 datum.
[b] Measurements in feet below top of well casing.
[c] Top of casing (TOC) elevation was re-surveyed in May 2005.
[d] Water in well was under pressure and rising when the cap was removed. The water level was recorded after the well cap was off for over 2 hours.
* Groundwater elevation corrected for product thickness by using the equation: Groundwater elevation = TOC elevation - depth to groundwater + (product thickness x 0.80).

Table 2
Groundwater Sample Analytical Results - Petroleum Hydrocarbons
Former Arco Service Station #0855
Longview, Washington

Well Number	Sample Date	Benzene[a] (µg/L)	Toluene[a] (µg/L)	Ethylbenzene[a] (µg/L)	Total Xylenes[a] (µg/L)	GRO[b] (µg/L)	DRO[c] (µg/L)
MTCA Method A Cleanup Levels[d]		**5**	**1,000**	**700**	**1,000**	**800**	**500**
Shallow Wells							
MW-1	03/27/00	ND	ND	ND	ND	ND	ND
	05/23/00	ND	ND	ND	ND	ND	NA
	07/20/00	ND	ND	ND	ND	ND	NA
	10/18/00	ND	ND	1.61	ND	404	NA
	01/18/01	ND	ND	ND	ND	95.6	NA
	04/18/01	ND	ND	ND	ND	NA	NA
	07/17/01	ND	2.63	1.46	ND	386	NA
	10/18/01	ND	ND	ND	ND	ND	NA
	01/16/02	ND	ND	ND	ND	104	NA
	07/09/03	<0.50	<0.50	<0.50	<1.0	<50	<250
	05/25/05	<1.0	<1.0	<1.0	<2.0	<100	<50
	11/30/05	<1.0	<1.0	<1.0	<3.0	<100	<50
	Well abandoned in September 2007.						
MW-2	03/27/00	**6.89**	49.5	599	**2,490**	**17,100**	ND
	05/23/00	**26.2**	16.2	614	**1,770**	**13,200**	NA
	07/20/00	**11.9**	11.8	304	330	**7,220**	NA
	10/18/00	3.67	1.23	13.9	7.55	743	NA
	01/18/00	ND	ND	41.1	5.62	691	NA
	04/18/01	ND	ND	8.73	ND	NA	NA
	07/17/01	ND	1.26	14	ND	430	NA
	10/18/01	2.11	ND	3.64	ND	304	NA
	01/16/02	1.16	0.81	37.1	6.71	370	NA
	07/09/03	0.86	<0.50	6.43	1.28	131	<250
	05/30/05	<1.0	<1.0	<1.0	<2.0	<100	52
	12/01/05	<1.0	<1.0	<1.0	<3.0	120	<50
	Well abandoned in September 2007.						
MW-3	03/07/00	**7,520**	**12,900**	**2,780**	**14,500**	**93,700**	ND
	05/23/00	**4,710**	**8,330**	**2,280**	**11,200**	**65,200**	NA
	07/20/00	**10,700**	**22,600**	**3,160**	**17,400**	**145,000**	NA
	10/18/00	**12,900**	**33,000**	**4,890**	**26,700**	**179,000**	NA
	01/18/01	**9,380**	**17,200**	**3,940**	**20,230**	**121,000**	NA
	04/18/01	**7,700**	**15,300**	**3,430**	**16,990**	NA	NA
	07/17/01	**10,100**	**21,400**	**4,120**	**20,900**	**940,000**	NA
	10/18/01	**7,200**	**19,700**	**3,340**	**17,300**	**139,000**	NA
	01/16/02	**13,600**	**26,600**	**3,920**	**20,800**	**177,000**	NA
	07/09/03	**11,800**	**20,100**	**4,560**	**21,200**	**124,000**	**3,750**
	05/25/05	Not sampled due to presence of free product.					
	11/28/05	Not sampled due to presence of free product.					
	Well abandoned in September 2007.						
MW-4	11/15/00	**1,310**	53.6	**2,430**	**7,250**	**45,500**	NA
	01/18/01	**1,130**	ND	**2,030**	**2,764**	**29,400**	NA
	04/18/01	**1,280**	ND	**1,700**	**2,591**	NA	NA
	07/17/01	**1,610**	35	**2,870**	**1,870**	**34,900**	NA
	10/18/01	**1,040**	ND	**2,300**	**1,320**	**33,000**	NA
	01/16/02	**733**	ND	**920**	948	**19,300**	NA
	07/09/03	**906**	39.1	**1,350**	156	**14,100**	**798**
	05/24/05	**310**	2.90	410	185[e]	**9,600**	**2,300**
	12/01/05	**990**	140	**1,100**	**1,353**[e]	**11,000**	**2,900**[f]
	Well abandoned in September 2007.						

Table 2
Groundwater Sample Analytical Results - Petroleum Hydrocarbons
Former Arco Service Station #0855
Longview, Washington

Well Number	Sample Date	Benzene[a] (µg/L)	Toluene[a] (µg/L)	Ethylbenzene[a] (µg/L)	Total Xylenes[a] (µg/L)	GRO[b] (µg/L)	DRO[c] (µg/L)
MTCA Method A Cleanup Levels[d]		**5**	**1,000**	**700**	**1,000**	**800**	**500**
Shallow Wells (continued)							
MW-5	11/15/00	ND	ND	ND	ND	ND	NA
	01/18/01	ND	ND	ND	ND	786	NA
	04/18/01	**9.42**	ND	6.76	10.1	NA	NA
	07/17/01	1.83	1.16	1.90	3.28	694	NA
	10/18/01	3.05	1.39	1.48	1.45	647	NA
	01/16/02	**52.3**	3.82	48	24.9	**2,800**	NA
	07/09/03	1.26	0.99	1.54	4.64	615	<250
	05/24/05	<1.0	<1.0	<1.0	<2.0	460	120
	11/28/05	<1.0	<1.0	<1.0	<3.0	420	230[f]
	12/11/07	<1.0	<1.0	<1.0	<3.0	140	<50
	03/11/08	<1.0	<1.0	<1.0	<3.0	<100	<50
	07/02/08	<1.0	<1.0	<1.0	<3.0	<100	<50
	10/02/08	<1.0	<1.0	<1.0	<3.0	<100	NA
MW-6	11/15/00	ND	ND	ND	ND	131	NA
	01/18/01	ND	ND	ND	ND	732	NA
	04/18/01	ND	ND	ND	ND	NA	NA
	07/17/01	ND	1.35	1.33	5.79	**892**	NA
	10/18/01	ND	ND	2.60	5.48	**1,000**	NA
	01/16/02	ND	0.72	1.58	2.78	**810**	NA
	07/09/03	<0.50	0.53	1.15	4.84	462	**958**
	05/25/05	<1.0	<1.0	<1.0	<2.0	370	270
	11/28/05	<1.0	<1.0	<1.0	<1.0	NA	<1.0
	Well destroyed in November 2007.						
MW-7	11/15/00	ND	ND	ND	1.35	113	NA
	01/18/01	ND	ND	ND	ND	242	NA
	04/18/01	ND	ND	ND	ND	NA	NA
	07/17/01	ND	ND	ND	ND	275	NA
	10/18/01	ND	ND	ND	ND	286	NA
	01/16/02	ND	ND	ND	ND	362	NA
	07/09/03	<0.50	<0.50	<0.50	1.48	232	**2,050**
	05/25/05	<1.0	<1.0	<1.0	<2.0	<100	220
	11/30/05	<1.0	<1.0	<1.0	<3.0	<100	140
	Well abandoned in September 2007.						
MW-8	05/25/05	<1.0	<1.0	<1.0	<3.0	<100	<70
	11/29/05	<1.0	<1.0	<1.0	<3.0	<100	<50
	12/11/07	<1.0	<1.0	<1.0	<3.0	<100	<50
	03/11/08	<1.0	<1.0	<1.0	<3.0	<100	<50
	07/01/08	<1.0	<1.0	<1.0	<3.0	<100	<50
	10/01/08	<1.0	<1.0	<1.0	<3.0	<100	NA
MW-9	05/25/05	<1.0	<1.0	<1.0	<3.0	<100	<50
	11/28/05	<1.0	<1.0	<1.0	<3.0	<100	<50
	12/11/07	<1.0	<1.0	<1.0	<3.0	<100	<50
	03/11/08	<1.0	<1.0	<1.0	<3.0	<100	<50
	07/02/08	<1.0	<1.0	<1.0	<3.0	<100	<50
	10/02/08	<1.0	<1.0	<1.0	<3.0	<100	NA
MW-10	05/25/05	**45**	<1.0	110	<2.0	**1,000**	**1,200**
	11/30/05	**31**	<1.0	110	<3.0	**1,400**	**1,000[f]**
	12/11/07	**9.0**	3.0	65	<3.0	**3,100**	**1,000[g]**
	03/11/08	**16**	2.0	40	<3.0	**3,000**	**1,200[g]**
	07/03/08	**18**	2.0	53	41	**2,500**	**1,100[g]**
	10/02/08	<1.0	<1.0	<1.0	<3.0	**1,300**	NA

Table 2
Groundwater Sample Analytical Results - Petroleum Hydrocarbons
Former Arco Service Station #0855
Longview, Washington

Well Number	Sample Date	Benzene[a] (µg/L)	Toluene[a] (µg/L)	Ethylbenzene[a] (µg/L)	Total Xylenes[a] (µg/L)	GRO[b] (µg/L)	DRO[c] (µg/L)
MTCA Method A Cleanup Levels[d]		**5**	**1,000**	**700**	**1,000**	**800**	**500**
Shallow Wells (continued)							
MW-11	12/05/05	<1.0	<1.0	<1.0	<3.0	<100	<50
	12/11/07	<1.0	<1.0	<1.0	<3.0	<100	<50
	03/11/08	<1.0	<1.0	<1.0	<3.0	<100	<50
	07/02/08	<1.0	<1.0	<1.0	<3.0	<100	<50
	10/02/08	<1.0	<1.0	<1.0	<3.0	<100	NA
MW-12	12/11/07	<1.0	<1.0	<1.0	<3.0	<100	<50
	03/11/08	<1.0	<1.0	<1.0	<3.0	<100	<50
	07/02/08	<1.0	<1.0	<1.0	<3.0	<100	<50
	10/02/08	<1.0	<1.0	<1.0	<3.0	<100	NA
MW-13	12/11/07	<1.0	<1.0	<1.0	<3.0	<100	<50
	03/11/08	<1.0	<1.0	<1.0	<3.0	<100	<50
	07/03/08	<1.0	<1.0	<1.0	<3.0	<100	<50
	10/02/08	<1.0	<1.0	<1.0	<3.0	<100	NA
MW-14	12/11/07	<1.0	<1.0	<1.0	<3.0	<100	<50
	03/11/08	<1.0	<1.0	<1.0	<3.0	<100	50
	07/02/08	<1.0	<1.0	<1.0	<3.0	<100	<50
	10/01/08	<1.0	<1.0	<1.0	<3.0	<100	NA
Deep Wells/Wellpoint							
SSB-15	05/25/05	**9,600**	**1,200**	**2,400**	**11,600[e]**	**67,000 E**	**2,300**
DMW-1	12/07/05	**4,000**	160	**1,100**	**4,090[e]**	**22,000**	**2,900[f]**
	08/17/06	**4,100**	<1.0	**520**	**841[e]**	**16,000**	**930[f]**
	Well abandoned in September 2007.						
DMW-2	12/07/05	**11**	<1.0	40	46[f]	270	<50
	08/16/06	**10**	<1.0	5.6	<3.0	<100	<50
	Well abandoned in September 2007.						
DMW-3	12/07/05	<1.0	<1.0	<1.0	<3.0	<50	<50
	08/17/06	<1.0	<1.0	<1.0	<3.0	<100	<50
	12/11/07	<1.0	<1.0	<1.0	<3.0	<100	<50
	03/11/08	<1.0	<1.0	<1.0	<3.0	<100	<50
	07/02/08	<1.0	<1.0	<1.0	<3.0	<100	<50
	10/01/08	<1.0	<1.0	<1.0	<3.0	<100	NA
DMW-4	12/05/05	**56**	<1.0	<1.0	<3.0	230	<50
	08/17/06	**5.7**	<1.0	<1.0	<3.0	210	<50
	12/11/07	**27**	3.0	2.0	4.0	260	<50
	03/11/08	**6.0**	<1.0	<1.0	<3.0	230	68[g]
	07/02/08	<1.0	<1.0	<1.0	<3.0	<100	<50
	10/02/08	<1.0	<1.0	<1.0	<3.0	<100	NA
DMW-5	12/05/05	**36**	<1.0	<1.0	<3.0	130	<50
	08/17/06	**74**	<1.0	<1.0	<3.0	170	<50
	12/11/07	**41**	<1.0	<1.0	<3.0	100	<50
	03/11/08	**10**	<1.0	<1.0	<3.0	<100	<50
	07/02/08	1.0	<1.0	<1.0	<3.0	<100	<50
	10/01/08	**42**	<1.0	<1.0	<3.0	110	NA

Table 2
Groundwater Sample Analytical Results - Petroleum Hydrocarbons
Former Arco Service Station #0855
Longview, Washington

Well Number	Sample Date	Benzene[a] (µg/L)	Toluene[a] (µg/L)	Ethylbenzene[a] (µg/L)	Total Xylenes[a] (µg/L)	GRO[b] (µg/L)	DRO[c] (µg/L)
MTCA Method A Cleanup Levels[d]		**5**	**1,000**	**700**	**1,000**	**800**	**500**
Deep Wells/Wellpoint (continued)							
DMW-6	08/16/06	<1.0	<1.0	<1.0	<3.0	<100	<50
	12/11/07	<1.0	<1.0	<1.0	<3.0	<100	<50
	03/11/08	<1.0	<1.0	<1.0	<3.0	<100	<50
	07/02/08	<1.0	<1.0	<1.0	<3.0	<100	<50
	10/02/08	<1.0	<1.0	<1.0	<3.0	<100	NA
DMW-7	08/16/06	<1.0	<1.0	<1.0	<3.0	<100	<50
	12/11/07	<1.0	<1.0	<1.0	<3.0	<100	<50
	03/11/08	<1.0	<1.0	<1.0	<3.0	<100	<50
	07/01/08	<1.0	<1.0	<1.0	<3.0	<100	<50
	10/01/08	<1.0	<1.0	<1.0	<3.0	<100	NA
DMW-8	08/16/06	<1.0	<1.0	<1.0	<3.0	<100	<50
	12/11/07	<1.0	<1.0	<1.0	<3.0	<100	<50
	03/11/08	<1.0	<1.0	<1.0	<3.0	<100	<50
	07/02/08	<1.0	<1.0	<1.0	<3.0	<100	<50
	10/02/08	<1.0	<1.0	<1.0	<3.0	<100	NA
DMW-9	12/11/07	**6,100**	**1,900**	**970**	**3,100**	**27,000**	**600[g]**
	03/11/08	**3,000**	150	380	880	**13,000**	450[g]
	07/03/08	**3,600**	3.0	320	610	**9,500**	**520[g]**
	10/02/08	**3,300**	4.0	140	270	**8,600**	NA
DMW-10	12/11/07	**60**	4.0	88	130	750	53[g]
	03/11/08	**75**	4.0	140	120	**1,000**	74[g]
	07/02/08	**89**	6.0	160	130	**1,100**	68[g]
	10/01/08	**90**	5.0	120	25	**820**	NA

NOTES: Values in bold exceed the MTCA Method A cleanup levels.

All concentrations in micrograms per liter (µg/L).

ND = Not detected above the laboratory method reporting limit (MRL).

NA = Not analyzed.

[a] Benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8021B or EPA Method 8260B.

[b] Gasoline-range organics (GRO) by Ecology Method NWTPH-Gx.

[c] Diesel-range organics (DRO) by Ecology Method NWTPH-Dx.

[d] Chapter 173-340 WAC, Model Toxics Control Act (MTCA) Cleanup Regulation, Method A Cleanup Levels. Amended February 12, 2001.

[e] Total xylenes calculated by using the formula: total xylenes concentration = (m, p-xylene concentration) + (o-xylene concentration).

[f] The laboratory reported that the DRO concentration is due to overlap from the gasoline range.

[g] The laboratory reported that the pattern of chromatogram peaks from the sample were not indicative of diesel.

Table 3
Groundwater Sample Analytical Results - Natural Attenuation Parameters
Former Arco Service Station #0855
Longview, Washington

Sample Location	Sample Date	Nitrate[a] (mg/L)	Sulfate[a] (mg/L)	Dissolved Methane[b] (mg/L)	Dissolved Oxygen[c] (mg/L)	Dissolved Manganese[d] (mg/L)	Dissolved Ferrous Iron[e] (mg/L)	Alkalinity[f] (mg/L $CaCO^3$)	Redox Potential[g] (mV)
Shallow Wells									
MW-5	12/12/07	12.2	969	0.6	0.15	2.9	5.0	10.3	119.2
	03/13/08	2.25	341	<0.007	0.39	2.5	3.3	19.3	-122.8
	07/02/08	0.47	275	0.5	0.09	1.4	NM	80.8	10.0
	10/02/08	0.56	288	0.5	1.72	1.9	2.9	106	92.8
MW-8	12/12/07	<0.010	4.8	0.1	1.91	0.5	1.7	33.3	248.2
	03/13/08	<0.2	6.6	0.001	0.66	0.4	2.1	57.6	-140.0
	07/01/08	<0.1	14.0	2.0	0.18	0.4	NM	73.0	-78.9
	10/01/08	<0.1	15.9	1.1	1.29	0.5	3.6	74.1	-49.3
MW-9	12/12/07	0.50	5.0	0.0008	4.0	0.004	<0.10	40.1	237.0
	03/13/08	0.47	8.5	3.3	3.18	0.01	0.6	39.7	-33.5
	07/02/08	1.24	36.4	<0.0007	2.24	0.02	NM	80.2	85.6
	10/02/08	0.28	8.0	0.004	2.78	0.40	0.6	51.6	135.3
MW-10	12/12/07	0.036	74.9	6.5	2.99	2.4	2.0	174	294.2
	03/13/08	<0.2	186	1.8	2.12	2.2	3.1	160	-117.0
	07/02/08	<0.2	199	7.3	0.14	3.3	NM	232	15.2
	10/02/08	<0.1	69.0	1.7	1.29	2.1	3.0	181	110.9
MW-11	12/12/07	0.78	643	0.1	0.63	1.8	3.8	28.4	199.7
	03/13/08	0.39	199	<0.0007	0.63	2.5	1.4	45.1	-81.5
	07/02/08	0.044	162	0.2	0.23	1.0	NM	89.4	25.4
	10/02/08	<0.1	89.5	0.4	1.54	1.8	2.4	138	27.1
MW-12	12/12/07	37.0	1,500	0.2	0.67	5.3	3.8	6.9	178.0
	03/13/08	27.5	1,060	0.0009	0.77	6.8	<0.10	58.8	-146.8
	07/02/08	<0.1	204	0.5	0.22	8.3	NM	52.3	83.7
	10/02/08	0.37	1,280	0.3	0.94	11.3	<0.10	91.8	141.3
MW-13	12/12/07	31.7	1,590	0.04	NM	8.7	<0.10	70.7	235.9
	03/13/08	21.5	1,540	0.005	0.56	9.1	<0.10	218	-112.8
	07/03/08	4.49	1,420	0.007	0.10	9.8	NM	133	21.9
	10/02/08	1.92	1,800	0.02	1.27	16.3	<0.10	152	375.9
MW-14	12/12/07	16.7	1,190	0.07	2.48	9.4	0.2	16.0	215.1
	03/13/08	5.7	945	0.0009	2.42	7.1	1.2	57.8	-163.7
	07/02/08	0.95	891	<0.0007	0.29	2.4	NM	43.4	28.7
	10/01/08	0.33	879	<0.0007	1.63	1.9	<0.10	80.7	546.6
Deep Wells									
DMW-3	12/12/07	<0.050	31.8	1.6	3.84	2.8	1.0	220	255.6
	03/13/08	<0.2	23.4	2.5	2.0	2.6	3.0	197	-129.1
	07/02/08	<0.1	43.9	1.6	0.16	2.3	NM	214	-96.2
	10/01/08	<0.1	22.2	2.2	1.27	2.8	3.5	210	275.9
DMW-4	12/12/07	<0.010	22.4	10.1	0.11	2.2	3.6	174	105.1
	03/13/08	<0.2	297	0.0009	0.17	15.5	4.6	22.2	-136.6
	07/02/08	3.38	1,040	1.6	0.12	2.3	NM	65.8	-86.8
	10/02/08	<0.2	309	0.9	1.07	3.4	3.0	72.7	-18.4
DMW-5	12/12/07	<0.010	13.0	13.7	0.13	2.3	3.4	177	101.8
	03/13/08	<0.2	10.3	8.2	0.17	2.9	3.6	180	-127.9
	07/02/08	<0.1	42.6	8.8	0.42	2.5	NM	221	-101.1
	10/01/08	<0.1	7.7	5.9	1.41	2.4	NM	166	48.6

Table 3
Groundwater Sample Analytical Results - Natural Attenuation Parameters
Former Arco Service Station #0855
Longview, Washington

Sample Location	Sample Date	Nitrate[a] (mg/L)	Sulfate[a] (mg/L)	Dissolved Methane[b] (mg/L)	Dissolved Oxygen[c] (mg/L)	Dissolved Manganese[d] (mg/L)	Dissolved Ferrous Iron[e] (mg/L)	Alkalinity[f] (mg/L $CaCO^3$)	Redox Potential[g] (mV)
Deep Wells (continued)									
DMW-6	12/12/07	<0.010	8.0	11.7	0.15	1.7	2.2	104	121.0
	03/13/08	<0.2	7.5	9.5	0.19	4.3	2.2	112	-136.5
	07/02/08	<0.1	54.0	7.6	0.12	2.0	NM	149	-86.1
	10/02/08	<0.1	39.0	6.4	1.07	2.0	2.6	154	-25.6
DMW-7	12/12/07	<0.010	23.3	9.1	0.25	3.7	3.1	158	93.6
	03/13/08	<0.2	29.6	8.3	0.39	12.4	3.0	155	-171.6
	07/01/08	<0.1	53.3	5.6	0.24	5.6	NM	195	-88.1
	10/01/08	<0.2	34.7	5.2	1.53	6.4	3.0	203	6.9
DMW-8	12/12/07	0.014	6.2	3.8	0.22	1.9	4.4	133	109.4
	03/13/08	<0.2	17.6	2.0	0.28	2.1	3.1	107	-159.9
	07/02/08	<0.1	37.0	1.6	0.21	1.8	NM	109	-5.9
	10/02/08	<0.1	26.8	2.0	1.23	2.0	2.6	151	1,103.1
DMW-9	12/12/07	<0.010	55.7	27.4	0.15	1.9	5.7	270	113.2
	03/13/08	<0.5	32.2	19.8	0.19	3.4	3.7	355	-128.4
	07/03/08	<0.1	38.9	21.1	0.16	2.6	NM	406	-83.8
	10/02/08	<0.1	20.0	21.0	1.21	2.8	2.7	451	4.0
DMW-10	12/12/07	<0.010	24.2	11.3	0.09	3.0	3.6	191	92.5
	03/13/08	<0.2	7.7	8.1	0.12	5.4	3.1	227	-94.2
	07/02/08	<0.1	27.9	11.0	0.33	4.0	NM	266	-112.9
	10/01/08	<0.2	5.3	11.5	1.47	4.5	4.4	271	-0.6

NOTES:

NM = Not measured.

mg/L = milligrams per liter (ppm).

[a] Nitrate by EPA Method 353.2.

[a] Sulfate by EPA Method 375.2.

[b] Dissolved methane by EPA Method RSK 175 Modified.

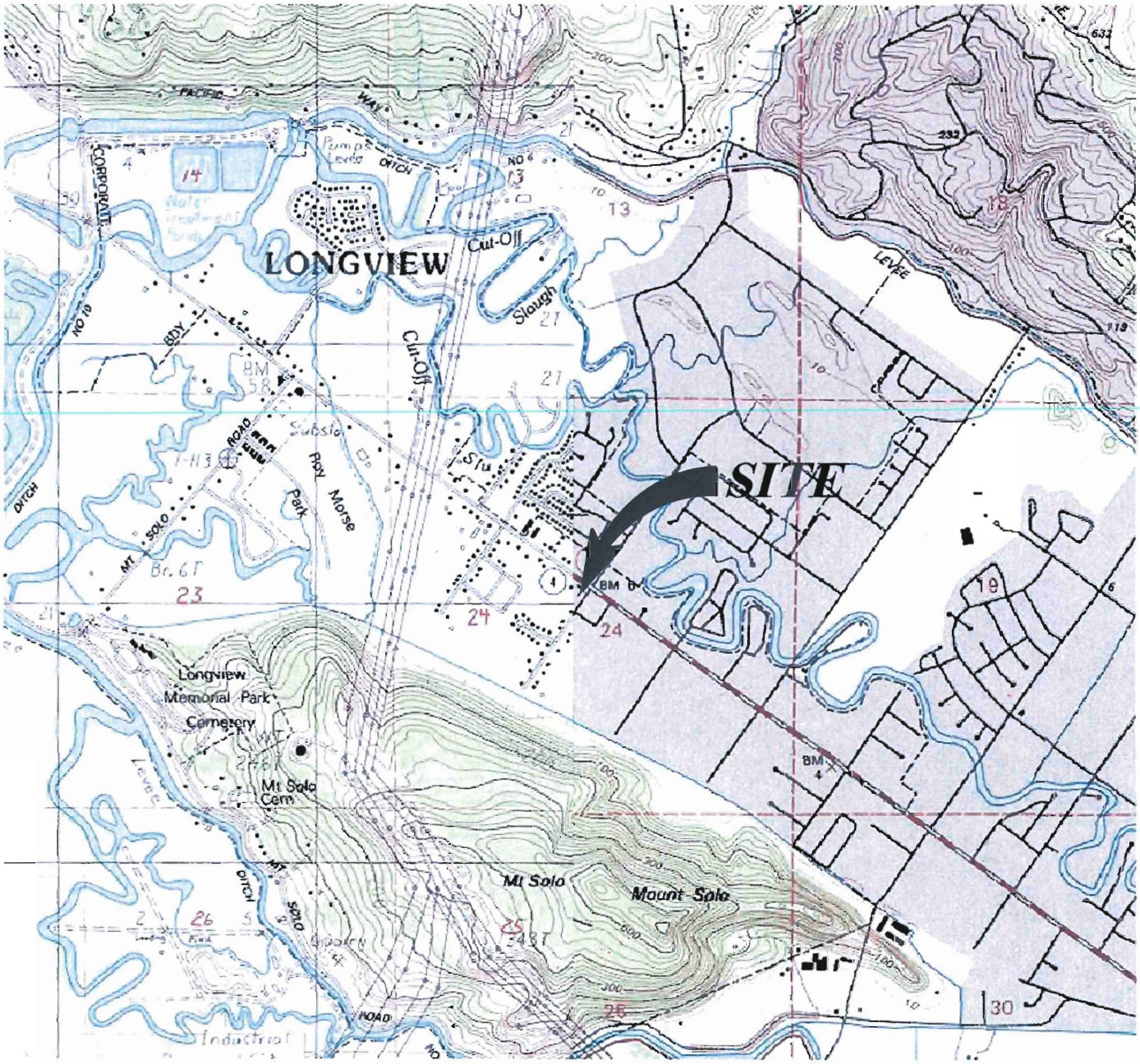
[c] Dissolved oxygen by EPA Method 360.1 (field instrument reading).

[d] Dissolved manganese by EPA Method 200.8.

[e] Dissolved ferrous iron by Standard Method SM 3500 (field test kit).

[f] Alkalinity by Standard Method SM 2320.

[g] Oxidation-reduction (redox) potential by EPA Method D1498-76 (field instrument reading



SLR
SLR International Corp
22122 20th AVE SE
BLDG. H, SUITE 150
BOTHELL, WA 98021
T: 425-402-8800
F: 425-402-8488

DATE 06/04
DWN. BDT
APPR. MDS
REVIS. ____
PROJECT NO.
001.0173.00003

FIGURE 1
FORMER ARCO SERVICE STATION #0855
LONGVIEW, WASHINGTON

SITE LOCATION MAP

D:\SLR\001.0173.00003\SLR\04-03.dwg, 9/6/2006 5:12:50 AM

BOON DOX MARKET

BOON DOX TAVERN

TEXACO SERVICE STATION

LEGEND

- **MW-5** — SHALLOW GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- MW-2 — ABANDONED OR DESTROYED SHALLOW GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- (2.50) — SHALLOW GROUNDWATER ELEVATION (IN FEET)
- <1 B / **1,300** G — B = BENZENE CONCENTRATION IN GROUNDWATER SAMPLE (in µg/L); G = GRO CONCENTRATION IN GROUNDWATER SAMPLE (in µg/L)

VALUES IN BOLD EXCEED MTCA METHOD A CLEANUP LEVELS

OCEAN BEACH HIGHWAY

SIDEWALK

SIDEWALK

MW-10 (5.01) <1 B **1,300** G

MW-9 (4.35) <1 B <100 G

BUS LANE

MW-11 (1.60) <1 B <100 G

MW-3

MW-4

MW-5 (2.50) <1 B <100 G

PLANTER

FORMER UNDERGROUND DISPENSER LINES

UNDEVELOPED MARSHY LAND

MW-13 (4.30) <1 B <100 G

FORMER DISPENSER ISLAND

MW-12 (2.36) <1 B <100 G

MW-6

FORMER GASOLINE USTs

MW-2

FORMER SERVICE STATION BUILDING

MW-14 (1.95) <1 B <100 G

FORMER HEATING OIL UST

FORMER USED OIL UST

MW-1

MW-7

PROPERTY LINE

GRASS STRIP

FORMER SERVICE STATION PARCEL (SITE) BOUNDARY

UNDEVELOPED LAND

PROPERTY LINE

46TH AVENUE

MW-8 (2.26) <1 B <100 G

HENRI'S RESTAURANT

0 30 60

SCALE IN FEET

Last Saved: Monday, October 27, 2008 9:09:15 AM by egoodwin Drawing path: R:\Figures\Bothell\Longview Arco\5\05-02.dwg

SLR International Corp
22122 20th AVE SE
BLDG. H, SUITE 150
BOTHELL, WA 98021
T: 425-402-8800
F: 425-402-8488

DATE 10/08
DWN. BDT
APPR. MDS
REVIS.
PROJECT NO. 001.0173.00007

FIGURE 2
FORMER ARCO SERVICE STATION #0855
4603 OCEAN BEACH HIGHWAY
LONGVIEW, WASHINGTON
SHALLOW GROUNDWATER SAMPLING RESULTS SEPTEMBER/OCTOBER 2008

BOON DOX TAVERN

BOON DOX MARKET

DMW-7 (1.51)
<1 B
<100 G

TEXACO SERVICE STATION

LEGEND

DMW-7 DEEP GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

DMW-1 ABANDONED DEEP GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

(1.64) DEEP GROUNDWATER ELEVATION (IN FEET)

<1 B
<100 G
B = BENZENE CONCENTRATION IN GROUNDWATER SAMPLE (in µg/L)
G = GRO CONCENTRATION IN GROUNDWATER SAMPLE (in µg/L)

VALUES IN BOLD EXCEED MTCA METHOD A CLEANUP LEVELS

OCEAN BEACH HIGHWAY

SIDEWALK

DMW-8 (1.61)
<1 B
<100 G

SIDEWALK

DMW-6 (1.62) BUS LANE
<1 B
<100 G

DMW-5 (1.62)
42 B
110 G

DMW-1
DMW-9 (1.66)
3,300 B
8,600 G

DMW-4 (1.64) PLANTER
<1 B
<100 G

FORMER UNDERGROUND DISPENSER LINES

UNDEVELOPED MARSHY LAND

FORMER DISPENSER ISLAND

FORMER GASOLINE USTs

FORMER SERVICE STATION BUILDING

DMW-10 (1.63)
90 B
820 G

DMW-2

PROPERTY LINE

FORMER HEATING OIL UST

FORMER USED OIL UST

GRASS STRIP

DMW-3 (1.63)
<1 B
<100 G

FORMER SERVICE STATION PARCEL (SITE) BOUNDARY

UNDEVELOPED LAND

PROPERTY LINE

46TH AVENUE

HENRI'S RESTAURANT

0 30 60
SCALE IN FEET

SLR International Corp
22122 20th AVE SE
BLDG. H, SUITE 150
BOTHELL, WA 98021
T: 425-402-8800
F: 425-402-8488

DATE 10/08
DWN. BDT
APPR. MDS
REVIS. _____
PROJECT NO.
001.0173.00007

FIGURE 3
FORMER ARCO SERVICE STATION #0855
4603 OCEAN BEACH HIGHWAY
LONGVIEW, WASHINGTON
DEEP GROUNDWATER SAMPLING RESULTS SEPTEMBER/OCTOBER 2008

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

October 20, 2008

Mike Staton, Project Manager
SLR International Corp.
22122 20th Ave. SE., H-150
Bothell, WA 98021

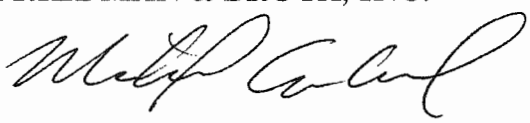
Dear Mr. Staton:

Included are the results from the testing of material submitted on October 2, 2008 from the 001.0173.00007 Longview, F&BI 810014 project. There are 12 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
SLR1020R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on October 2, 2008 by Friedman & Bruya, Inc. from the SLR International Corp. 001.0173.00007 Longview, F&BI 810014 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	SLR International Corp.
810014-01	MW8-1008
810014-02	DMW7-1008
810014-03	DMW3-1008
810014-04	MW14-1008
810014-05	DMW10-1008
810014-06	DMW5-1008

The samples were sent to Analytical Resources for nitrate, sulfate, alkalinity, and dissolved methane analyses. Review of the enclosed report indicates that all quality assurance was acceptable.

All quality control requirements were acceptable.

Date of Report: 10/20/08
Date Received: 10/02/08
Project: 001.0173.00007 Longview, F&BI 810014
Date Extracted: 10/02/08
Date Analyzed: 10/03/08

RESULTS FROM THE ANALYSIS OF THE WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 52-124)
MW8-1008 810014-01	<1	<1	<1	<3	<100	109
DMW7-1008 810014-02	<1	<1	<1	<3	<100	87
DMW3-1008 810014-03	<1	<1	<1	<3	<100	113
MW14-1008 810014-04	<1	<1	<1	<3	<100	113
DMW10-1008 810014-05	90	5	120	25	820	122
DMW5-1008 810014-06	42	<1	<1	<3	110	115
Method Blank	<1	<1	<1	<3	<100	89

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW8-1008	Client:	SLR International Corp.
Date Received:	10/02/08	Project:	Longview, F&BI 810014
Date Extracted:	10/08/08	Lab ID:	810014-01
Date Analyzed:	10/09/08	Data File:	810014-01.010
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	90	60	125

Analyte:	Concentration ug/L (ppb)
Manganese	492

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW7-1008	Client:	SLR International Corp.
Date Received:	10/02/08	Project:	Longview, F&BI 810014
Date Extracted:	10/08/08	Lab ID:	810014-02 x10
Date Analyzed:	10/09/08	Data File:	810014-02 x10.017
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	104	60	125

Analyte:	Concentration ug/L (ppb)
Manganese	6,400

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW3-1008	Client:	SLR International Corp.
Date Received:	10/02/08	Project:	Longview, F&BI 810014
Date Extracted:	10/08/08	Lab ID:	810014-03
Date Analyzed:	10/09/08	Data File:	810014-03.012
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	94	60	125

Analyte:	Concentration ug/L (ppb)
Manganese	2,800

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW14-1008	Client:	SLR International Corp.
Date Received:	10/02/08	Project:	Longview, F&BI 810014
Date Extracted:	10/08/08	Lab ID:	810014-04
Date Analyzed:	10/09/08	Data File:	810014-04.013
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	92	60	125

Analyte:	Concentration ug/L (ppb)
Manganese	1,930

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW10-1008	Client:	SLR International Corp.
Date Received:	10/02/08	Project:	Longview, F&BI 810014
Date Extracted:	10/08/08	Lab ID:	810014-05
Date Analyzed:	10/09/08	Data File:	810014-05.014
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	108	60	125

Analyte:	Concentration ug/L (ppb)
Manganese	4,500

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW5-1008	Client:	SLR International Corp.
Date Received:	10/02/08	Project:	Longview, F&BI 810014
Date Extracted:	10/08/08	Lab ID:	810014-06
Date Analyzed:	10/09/08	Data File:	810014-06.015
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	100	60	125

Analyte:	Concentration ug/L (ppb)
Manganese	2,440

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	NA	Project:	Longview, F&BI 810014
Date Extracted:	10/08/08	Lab ID:	I8-385 mb
Date Analyzed:	10/09/08	Data File:	I8-385 mb.009
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	91	60	125

Analyte:	Concentration ug/L (ppb)
Manganese	<1

Date of Report: 10/20/08
Date Received: 10/02/08
Project: 001.0173.00007 Longview, F&BI 810014

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 809322-03 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	104	65-118
Toluene	ug/L (ppb)	50	102	72-122
Ethylbenzene	ug/L (ppb)	50	108	73-126
Xylenes	ug/L (ppb)	150	104	74-118
Gasoline	ug/L (ppb)	1,000	95	69-134

Date of Report: 10/20/08
Date Received: 10/02/08
Project: 001.0173.00007 Longview, F&BI 810014

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 200.8

Laboratory Code: 809327-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Manganese	ug/L (ppb)	471	482	2	0-20

Laboratory Code: 809327-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Manganese	ug/L (ppb)	20	471	130 b	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Manganese	ug/L (ppb)	20	130	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probablility.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - The analyte indicated was found in the method blank. The result should be considered an estimate.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - The sample was extracted outside of holding time. Results should be considered estimates.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The pattern of peaks present is not indicative of diesel.

y - The pattern of peaks present is not indicative of motor oil.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

October 20, 2008

Mike Erdahl
Friedman & Bruya
3012 – 16th Avenue West
Seattle, WA 9819-2029

Project: 810014 PO# H-1590
ARI ID: NS24

Dear Mr. Erdahl:

Please find enclosed the original Chain of Custody record, sample receipt documentation, and analytical results for the project referenced above. Analytical Resources, Inc. accepted six water samples in good condition on October 02, 2008. Please refer to the enclosed Cooler Receipt Form for further details regarding sample receipt.

The samples were analyzed for Dissolved Methane/Ethane/Ethene, Alkalinity, Nitrate, and Sulfate, as requested on the Chain of Custody.

All analyses were completed routinely, with the exception of the irregularities below.

Nitrate

The reporting limits were elevated on a per sample basis due to dilutions necessary according to the nature of the sample matrix.

Quality control analysis results are included for your review. Copies of the reports and all associated raw data will be kept on file electronically at ARI. If you have any questions or require additional information, please contact me at your convenience.

Respectfully,

Eric Branson
Project Manager
ANALYTICAL RESOURCES, INC.
(206) 695-6213
eric@arilabs.com
www.arilabs.com

• Enclosures •

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: FBI
Project Name: 810914
COC No:
Delivered by: Courier
Assigned ARI Job No: NS24
Tracking No:

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO
Record cooler temperature (recommended 2.0-6.0 °C for chemistry	7.4	°C

Cooler Accepted by: KR Date: 10/2/08 Time: 12:40

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used?		Box/BW	
Was sufficient ice used (if appropriate)?		YES	(NO)
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottle arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation checklist)		(YES)	NO
Were all VOC vials free of air bubbles?	NA	(YES)	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO

Samples Logged by: JW Date: 10/2/08 Time: 1255

***** Notify Project Manager of discrepancies or concerns *****

Explain discrepancies or negative responses:

By: Date:

PRESERVATION VERIFICATION 10/02/08
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **NS24**

Inquiry Number: NONE
Analysis Requested: 10/02/08
Contact: Erdahl, Michael
Client: Friedman & Bruya, Inc.
Logged by: JW
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

PC: Eric
VTSR: 10/02/08

Project #: H-1590
Project: 810014
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID		CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
08-26080 **NS24A**	MW8-1008											Fail									
08-26081 **NS24B**	DMW7-1008											↓									
08-26082 **NS24C**	DMW3-1008																				
08-26083 **NS24D**	MW14-1008																				
08-26084 **NS24E**	DMW10-1008																				
08-26085 **NS24F**	DMW5-1008																				

None are preserved

Checked By JW Date 10/2/08

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
METHANE ETHANE ETHENE
Modified RSK 175
Page 1 of 1
Matrix: Water

QC Report No: NS24-Friedman & Bruya, Inc.
Project: 810014
H-1590
Date Received: 10/02/08

Data Release Authorized:
Reported: 10/13/08

ARI ID	Sample ID	Analysis Date	DL	Analyte	RL	Result
NS24A	MW8-1008	10/10/08	1.0	**Methane**	**0.7**	**1,110**
08-26080				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
NS24B	DMW7-1008	10/10/08	1.0	**Methane**	**0.7**	**5,200**
08-26081				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
NS24C	DMW3-1008	10/10/08	1.0	**Methane**	**0.7**	**2,220**
08-26082				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
NS24D	MW14-1008	10/10/08	1.0	Methane	0.7	< 0.7 U
08-26083				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
NS24E	DMW10-1008	10/10/08	1.0	**Methane**	**0.7**	**11,500**
08-26084				**Ethane**	**1.2**	**13.1**
				Ethene	1.1	< 1.1 U
NS24F	DMW5-1008	10/10/08	1.0	**Methane**	**0.7**	**5,850**
08-26085				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
NS24ADUP	MW8-1008	10/10/08	1.0	**Methane**	**0.7**	**991**
					RPD:	11.33 %
				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
101008MB	Method Blank	10/10/08	1.0	Methane	0.7	< 0.7 U
101008MB	Method Blank	10/10/08	1.0	Ethane	1.2	< 1.2 U
101008MB	Method Blank	10/10/08	1.0	Ethene	1.1	< 1.1 U

Reported in ug/L (ppb)

ANALYTICAL RESOURCES INCORPORATED

RSK 175/METHANE-ETHANE-ETHENE WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: NS24-Friedman & Bruya, Inc.
Project: 810014
H-1590

ARI ID	Client ID	PRP	TOT OUT
NS24A	MW8-1008	83.9%	0
NS24ADUP	MW8-1008	92.4%	0
NS24B	DMW7-1008	92.1%	0
NS24C	DMW3-1008	93.9%	0
NS24D	MW14-1008	96.8%	0
NS24E	DMW10-1008	92.9%	0
NS24F	DMW5-1008	94.6%	0
MB-101008	Method Blank	99.0%	0
LCS-101008	Lab Control	102%	0
LCSD-101008	Lab Control Dup	99.9%	0

	LCS/MB LIMITS	QC LIMITS
(PRP) = Propane	(80-120)	(77-120)

Log Number Range: 08-26080 to 08-26085

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
METHANE ETHANE ETHENE
Modified RSK 175
Page 1 of 1
Matrix: Water

QC Report No: NS24-Friedman & Bruya, Inc.
Project: 810014
H-1590
Date Received: 10/02/08

Data Release Authorized:
Reported: 10/13/08

ARI ID	Analysis Date	Analyte	Spike	Result	Recovery	RPD
101008LCS	10/10/08	Methane	654	717	109.6%	0.3%
101008LCSD				719	109.9%	
101008LCS	10/10/08	Ethane	1,230	1,240	101.1%	0.0%
101008LCSD				1,240	101.1%	
101008LCS	10/10/08	Ethene	1,150	1,180	103.0%	0.9%
101008LCSD				1,170	102.2%	

Reported in ug/L (ppb)

SAMPLE RESULTS-CONVENTIONALS
NS24-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/20/08

Project: 810014
Event: H-1590
Date Sampled: 10/01/08
Date Received: 10/02/08

Client ID: MW8-1008
ARI ID: 08-26080 NS24A

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/09/08 100908#1	SM 2320	mg/L CaCO3	1.0	74.1
N-Nitrate	10/02/08	Calculated	mg-N/L	0.100	< 0.100 U
N-Nitrite	10/02/08 100208#1	EPA 353.2	mg-N/L	0.100	< 0.100 U
Nitrate + Nitrite	10/02/08 100208#1	EPA 353.2	mg-N/L	0.100	< 0.100 U
Sulfate	10/16/08 101608#1	EPA 375.2	mg/L	2.0	15.9

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NS24-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/20/08

Project: 810014
Event: H-1590
Date Sampled: 10/01/08
Date Received: 10/02/08

Client ID: DMW7-1008
ARI ID: 08-26081 NS24B

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/09/08 100908#2	SM 2320	mg/L CaCO3	1.0	203
N-Nitrate	10/02/08	Calculated	mg-N/L	0.200	< 0.200 U
N-Nitrite	10/02/08 100208#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Nitrate + Nitrite	10/02/08 100208#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Sulfate	10/16/08 101608#1	EPA 375.2	mg/L	2.0	34.7

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NS24-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/20/08

Project: 810014
Event: H-1590
Date Sampled: 10/01/08
Date Received: 10/02/08

Client ID: DMW3-1008
ARI ID: 08-26082 NS24C

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/09/08 100908#2	SM 2320	mg/L CaCO3	1.0	210
N-Nitrate	10/02/08	Calculated	mg-N/L	0.100	< 0.100 U
N-Nitrite	10/02/08 100208#1	EPA 353.2	mg-N/L	0.100	< 0.100 U
Nitrate + Nitrite	10/02/08 100208#1	EPA 353.2	mg-N/L	0.100	< 0.100 U
Sulfate	10/16/08 101608#1	EPA 375.2	mg/L	2.0	22.2

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NS24-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/20/08

Project: 810014
Event: H-1590
Date Sampled: 10/01/08
Date Received: 10/02/08

Client ID: MW14-1008
ARI ID: 08-26083 NS24D

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/09/08 100908#1	SM 2320	mg/L CaCO3	1.0	80.7
N-Nitrate	10/02/08	Calculated	mg-N/L	0.100	0.332
N-Nitrite	10/02/08 100208#1	EPA 353.2	mg-N/L	0.100	< 0.100 U
Nitrate + Nitrite	10/02/08 100208#1	EPA 353.2	mg-N/L	0.100	0.332
Sulfate	10/16/08 101608#1	EPA 375.2	mg/L	100	879

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NS24-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/20/08

Project: 810014
Event: H-1590
Date Sampled: 10/01/08
Date Received: 10/02/08

Client ID: DMW10-1008
ARI ID: 08-26084 NS24E

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/09/08 100908#2	SM 2320	mg/L CaCO3	1.0	271
N-Nitrate	10/02/08	Calculated	mg-N/L	0.200	< 0.200 U
N-Nitrite	10/02/08 100208#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Nitrate + Nitrite	10/02/08 100208#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Sulfate	10/16/08 101608#1	EPA 375.2	mg/L	2.0	5.3

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NS24-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/20/08

Project: 810014
Event: H-1590
Date Sampled: 10/01/08
Date Received: 10/02/08

Client ID: DMW5-1008
ARI ID: 08-26085 NS24F

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/09/08 100908#2	SM 2320	mg/L CaCO3	1.0	166
N-Nitrate	10/02/08	Calculated	mg-N/L	0.100	< 0.100 U
N-Nitrite	10/02/08 100208#1	EPA 353.2	mg-N/L	0.100	< 0.100 U
Nitrate + Nitrite	10/02/08 100208#1	EPA 353.2	mg-N/L	0.100	< 0.100 U
Sulfate	10/16/08 101608#1	EPA 375.2	mg/L	2.0	7.7

RL Analytical reporting limit
U Undetected at reported detection limit

MS/MSD RESULTS-CONVENTIONALS
NS24-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/20/08

Project: 810014
Event: H-1590
Date Sampled: 10/01/08
Date Received: 10/02/08

Analyte	Method	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: NS24A Client ID: MW8-1008							
N-Nitrite	EPA 353.2	10/02/08	mg-N/L	< 0.100	9.09	10.0	90.9%
Nitrate + Nitrite	EPA 353.2	10/02/08	mg-N/L	< 0.100	9.88	10.0	98.8%
Sulfate	EPA 375.2	10/16/08	mg/L	15.9	38.6	20.0	113.5%

REPLICATE RESULTS-CONVENTIONALS
NS24-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/20/08

Project: 810014
Event: H-1590
Date Sampled: 10/01/08
Date Received: 10/02/08

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: NS24A Client ID: MW8-1008						
Alkalinity	SM 2320	10/09/08	mg/L CaCO3	74.1	73.7	0.5%
N-Nitrite	EPA 353.2	10/02/08	mg-N/L	< 0.100	< 0.100	NA
Nitrate + Nitrite	EPA 353.2	10/02/08	mg-N/L	< 0.100	< 0.100	NA
Sulfate	EPA 375.2	10/16/08	mg/L	15.9	16.1	1.2%
ARI ID: NS24D Client ID: MW14-1008						
Alkalinity	SM 2320	10/09/08	mg/L CaCO3	80.7	80.5	0.2%
ARI ID: NS24F Client ID: DMW5-1008						
Alkalinity	SM 2320	10/09/08	mg/L CaCO3	166	164	1.2%

METHOD BLANK RESULTS-CONVENTIONALS
NS24-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/20/08

Project: 810014
Event: H-1590
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank
N-Nitrite	EPA 353.2	10/02/08	mg-N/L	< 0.010 U
Nitrate + Nitrite	EPA 353.2	10/02/08	mg-N/L	< 0.010 U
Sulfate	EPA 375.2	10/16/08	mg/L	< 2.0 U

STANDARD REFERENCE RESULTS-CONVENTIONALS
NS24-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/20/08

Project: 810014
Event: H-1590
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Method	Date	Units	SRM	True Value	Recovery
Alkalinity	SM 2320	10/09/08	mg/L CaCO3	100	101	99.0%
ERA #P114506		10/09/08		101	101	100.0%
N-Nitrite	EPA 353.2	10/02/08	mg-N/L	0.507	0.500	101.4%
ERA #23034						
Nitrate + Nitrite	EPA 353.2	10/02/08	mg-N/L	0.523	0.500	104.6%
ERA #20034						
Sulfate	EPA 375.2	10/16/08	mg/L	26.2	25.0	104.8%
ERA #37065						

NS24

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl
Company Friedman and Bruya, Inc.
Address 3012 16th Ave W
City, State, ZIP Seattle, WA 98119
Phone # (206) 285-8282 Fax # (206) 283-5044

SUBCONTRACTER

PROJECT NAME/NO.: 810014
PO #: H1590

REMARKS
Please Email Results
merdahl@friedmanandbruya.com

Page # 1 of 1

TURNAROUND TIME
☒ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Oil and Grease	EPH	VPH	Nitrate	Sulfate	Alkalinity	Dissolved Methane				Notes
MW8-1008		10/1/08	0820	W					X	X	X	X				
DMW7-1008			0930													
DMW3-1008			1045													
MW14-1008			1115													
DMW10-1008			1150													
DMW5-1008			1250													

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Michael Erdahl	Friedman & Bruya	10/2/08	1100AM
Received by: Kimberly Rigg	Kim Rigg	ARI	10/2/08	1240
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

810014

SAMPLE CHAIN OF CUSTODY ME 10/02/08

V3/BIY

Page # 1 of 1

Send Report To MIKE STATON
Company SLR INTERNATIONAL CORP.
Address ~~2212~~ 20TH AVE NE, #H-150
City, State, ZIP BOTHELL, WA 98021
Phone #(425)402-8800 Fax #(425)402-8488

SAMPLERS (signature) CHRIS LEE

PROJECT NAME/NO. FORMER ARCO #0855, LONGVIEW 001.0173.00007

PO # 001.0173.00007

REMARKS
ALL VOAs UNPRESERVED - NOTE REDUCED HOLDING TIME
~~48~~-HOUR HOLD FOR NITRATE

TURNAROUND TIME
☒ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☒ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Sulfate & Nitrate by 300.0	Dissolved Mn by 200.8	Alkalinity by 310.1	Dissolved methane by RSK175			Notes
MW8-1008	01 A-G	10/1/08	0820	Water	7		X	X				X	X	X	X			
DMW7-1008	02 A-G		0930															
DMW3-1008	03 A-G		1045															
MW14-1008	04 A-G		1115															
DMW10-1008	05 A-G		1150															
DMW5-1008	06 A-G		1250															

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		CHRIS LEE	SLR	10/1/08	1400
Received by:		Nhan Phan	FEBI	10/2/08	09:00
Relinquished by:					
Received by:			Samples received at 3 °C		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

October 20, 2008

Mike Staton, Project Manager
SLR International Corp.
22122 20th Ave. SE., H-150
Bothell, WA 98021

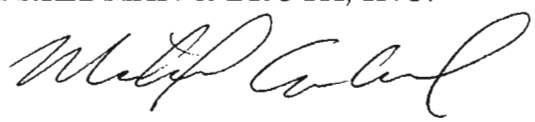
Dear Mr. Staton:

Included are the results from the testing of material submitted on October 3, 2008 from the Former Arco 0855 Longview 001.0173.00007, F&BI 810044 project. There are 16 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
SLR1020R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on October 3, 2008 by Friedman & Bruya, Inc. from the SLR International Corp. Former Arco 0855 Longview 001.0173.00007, F&BI 810044 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	SLR International Corp.
810044-01	MW11-1008
810044-02	DMW8-1008
810044-03	MW13-1008
810044-04	DMW9-1008
810044-05	DMW6-1008
810044-06	DMW4-1008
810044-07	MW5-1008
810044-08	MW12-1008
810044-09	MW10-1008
810044-10	MW9-1008

The samples were sent to Analytical Resources, Inc. for nitrate, sulfate, alkalinity, and dissolved methane analyses. Review of the enclosed report indicates that all quality assurance was acceptable.

All quality control requirements were acceptable.

Date of Report: 10/20/08
Date Received: 10/03/08
Project: Former Arco 0855 Longview 001.0173.00007, F&BI 810044
Date Extracted: 10/06/08
Date Analyzed: 10/06/08 and 10/07/08

RESULTS FROM THE ANALYSIS OF THE WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 52-124)
MW11-1008 810044-01	<1	<1	<1	<3	<100	60
DMW8-1008 810044-02	<1	<1	<1	<3	<100	106
MW13-1008 810044-03	<1	<1	<1	<3	<100	105
DMW9-1008 d 810044-04 1/40	3,300	4	140	270	8,600	111
DMW6-1008 810044-05	<1	<1	<1	<3	<100	100
DMW4-1008 810044-06	<1	<1	<1	<3	<100	107
MW5-1008 810044-07	<1	<1	<1	<3	<100	78
MW12-1008 810044-08	<1	<1	<1	<3	<100	103
MW10-1008 810044-09	<1	<1	<1	<3	1,300	121
MW9-1008 810044-10	<1	<1	<1	<3	<100	78
Method Blank	<1	<1	<1	<3	<100	99

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW11-1008	Client:	SLR International Corp.
Date Received:	10/03/08	Project:	001.0173.00007, F&BI 810044
Date Extracted:	10/07/08	Lab ID:	810044-01
Date Analyzed:	10/08/08	Data File:	810044-01.016
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	112	60	125

Analyte:	Concentration ug/L (ppb)
Manganese	1,750

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW8-1008	Client:	SLR International Corp.
Date Received:	10/03/08	Project:	001.0173.00007, F&BI 810044
Date Extracted:	10/07/08	Lab ID:	810044-02
Date Analyzed:	10/08/08	Data File:	810044-02.017
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	104	60	125

Analyte:	Concentration ug/L (ppb)
Manganese	2,010

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW13-1008	Client:	SLR International Corp.
Date Received:	10/03/08	Project:	001.0173.00007, F&BI 810044
Date Extracted:	10/07/08	Lab ID:	810044-03 x10
Date Analyzed:	10/08/08	Data File:	810044-03 x10.045
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	96	60	125

Analyte:	Concentration ug/L (ppb)
Manganese	16,300

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW9-1008	Client:	SLR International Corp.
Date Received:	10/03/08	Project:	001.0173.00007, F&BI 810044
Date Extracted:	10/07/08	Lab ID:	810044-04
Date Analyzed:	10/08/08	Data File:	810044-04.020
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	114	60	125

Analyte:	Concentration ug/L (ppb)
Manganese	2,840

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW6-1008	Client:	SLR International Corp.
Date Received:	10/03/08	Project:	001.0173.00007, F&BI 810044
Date Extracted:	10/07/08	Lab ID:	810044-05
Date Analyzed:	10/08/08	Data File:	810044-05.021
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	121	60	125

Analyte:	Concentration ug/L (ppb)
Manganese	1,960

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	DMW4-1008	Client:	SLR International Corp.
Date Received:	10/03/08	Project:	001.0173.00007, F&BI 810044
Date Extracted:	10/07/08	Lab ID:	810044-06 x10
Date Analyzed:	10/08/08	Data File:	810044-06 x10.043
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	99	60	125

Analyte:	Concentration ug/L (ppb)
Manganese	3,350

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW5-1008	Client:	SLR International Corp.
Date Received:	10/03/08	Project:	001.0173.00007, F&BI 810044
Date Extracted:	10/07/08	Lab ID:	810044-07
Date Analyzed:	10/08/08	Data File:	810044-07.023
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	109	60	125

Analyte:	Concentration ug/L (ppb)
Manganese	1,850

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW12-1008	Client:	SLR International Corp.
Date Received:	10/03/08	Project:	001.0173.00007, F&BI 810044
Date Extracted:	10/07/08	Lab ID:	810044-08 x10
Date Analyzed:	10/08/08	Data File:	810044-08 x10.044
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	96	60	125

Analyte:	Concentration ug/L (ppb)
Manganese	11,300

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW10-1008	Client:	SLR International Corp.
Date Received:	10/03/08	Project:	001.0173.00007, F&BI 810044
Date Extracted:	10/07/08	Lab ID:	810044-09
Date Analyzed:	10/08/08	Data File:	810044-09.025
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	119	60	125

Analyte:	Concentration ug/L (ppb)
Manganese	2,080

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	MW9-1008	Client:	SLR International Corp.
Date Received:	10/03/08	Project:	001.0173.00007, F&BI 810044
Date Extracted:	10/07/08	Lab ID:	810044-10
Date Analyzed:	10/08/08	Data File:	810044-10.026
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	111	60	125

Analyte:	Concentration ug/L (ppb)
Manganese	358

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	NA	Project:	001.0173.00007, F&BI 810044
Date Extracted:	10/07/08	Lab ID:	I8-385 mb
Date Analyzed:	10/08/08	Data File:	I8-385 mb.009
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	hr

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	90	60	125

Analyte:	Concentration ug/L (ppb)
Manganese	<1

Date of Report: 10/20/08
Date Received: 10/03/08
Project: Former Arco 0855 Longview 001.0173.00007, F&BI 810044

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 810033-03 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	100	65-118
Toluene	ug/L (ppb)	50	98	72-122
Ethylbenzene	ug/L (ppb)	50	105	73-126
Xylenes	ug/L (ppb)	150	102	74-118
Gasoline	ug/L (ppb)	1,000	98	69-134

Date of Report: 10/20/08
Date Received: 10/03/08
Project: Former Arco 0855 Longview 001.0173.00007, F&BI 810044

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 200.8

Laboratory Code: 809327-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Manganese	ug/L (ppb)	471	482	2	0-20

Laboratory Code: 809327-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Manganese	ug/L (ppb)	20	471	130 b	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Manganese	ug/L (ppb)	20	130	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probablility.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - The analyte indicated was found in the method blank. The result should be considered an estimate.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - The sample was extracted outside of holding time. Results should be considered estimates.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The pattern of peaks present is not indicative of diesel.

y - The pattern of peaks present is not indicative of motor oil.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

October 20, 2008

Mike Erdahl
Friedman & Bruya
3012 – 16th Avenue West
Seattle, WA 9819-2029

Project: 810044 PO# H-1590
ARI ID: NS48

Dear Mr. Erdahl:

Please find enclosed the original Chain of Custody record, sample receipt documentation, and analytical results for the project referenced above. Analytical Resources, Inc. accepted ten water samples in good condition on October 03, 2008. Please refer to the enclosed Cooler Receipt Form for further details regarding sample receipt.

The samples were analyzed for Dissolved Methane/Ethane/Ethene, Alkalinity, Nitrate, and Sulfate, as requested on the Chain of Custody.

All analyses were completed routinely, with the exception of the irregularities below.

Nitrate

The reporting limits were elevated on a per sample basis due to dilutions necessary according to the nature of the sample matrix.

Quality control analysis results are included for your review. Copies of the reports and all associated raw data will be kept on file electronically at ARI. If you have any questions or require additional information, please contact me at your convenience.

Respectfully,

Eric Branson
Project Manager
ANALYTICAL RESOURCES, INC.
(206) 695-6213
eric@arilabs.com
www.arilabs.com

• Enclosures •

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: FBI Project Name: 810044

COC No: — Delivered by: Courier

Assigned ARI Job No: NS4P Tracking No: —

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO
Record cooler temperature (recommended 2.0-6.0 °C for chemistry	7.2 °C	

Cooler Accepted by: [signature] Date: 10/3/07 Time: 1402

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?	YES	(NO)
What kind of packing material was used?	—	
Was sufficient ice used (if appropriate)?	YES	(NO)
Were all bottles sealed in individual plastic bags?	YES	(NO)
Did all bottle arrive in good condition (unbroken)?	(YES)	NO
Were all bottle labels complete and legible?	(YES)	NO
Did all bottle labels and tags agree with custody papers?	(YES)	NO
Were all bottles used correct for the requested analyses?	(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation checklist)	YES	(NO)
Were all VOC vials free of air bubbles? NA	(YES)	NO
Was sufficient amount of sample sent in each bottle?	(YES)	NO

Samples Logged by: [signature] Date: 10/3/07 Time: 1450

*** Notify Project Manager of discrepancies or concerns ****

Explain discrepancies or negative responses:

By: Date:

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
METHANE ETHANE ETHENE
Modified RSK 175
Page 1 of 1
Matrix: Water

QC Report No: NS48-Friedman & Bruya, Inc.
Project: H-1590
810044
Date Received: 10/03/08

Data Release Authorized:
Reported: 10/13/08

ARI ID	Sample ID	Analysis Date	DL	Analyte	RL	Result
NS48A	MW11-1008	10/10/08	1.0	**Methane**	**0.7**	**424**
08-26274				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
NS48B	DMW8-1008	10/10/08	1.0	**Methane**	**0.7**	**1,980**
08-26275				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
NS48C	MW13-1008	10/10/08	1.0	**Methane**	**0.7**	**23.6**
08-26276				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
NS48D	DMW9-1008	10/10/08	1.0	**Methane**	**0.7**	**21,000**
08-26277				**Ethane**	**1.2**	**31.4**
				Ethene	1.1	< 1.1 U
NS48E	DMW6-1008	10/10/08	1.0	**Methane**	**0.7**	**6,380**
08-26278				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
NS48F	DMW4-1008	10/10/08	1.0	**Methane**	**0.7**	**925**
08-26279				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
NS48G	MW5-1008	10/10/08	1.0	**Methane**	**0.7**	**486**
08-26280				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
NS48H	MW12-1008	10/10/08	1.0	**Methane**	**0.7**	**258**
08-26281				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
NS48I	MW10-1008	10/10/08	1.0	**Methane**	**0.7**	**1,700**
08-26282				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
NS48J	MW9-1008	10/10/08	1.0	**Methane**	**0.7**	**4.4**
08-26283				Ethane	1.2	< 1.2 U
				Ethene	1.1	< 1.1 U
101008MB	Method Blank	10/10/08	1.0	Methane	0.7	< 0.7 U
101008MB	Method Blank	10/10/08	1.0	Ethane	1.2	< 1.2 U
101008MB	Method Blank	10/10/08	1.0	Ethene	1.1	< 1.1 U

Reported in ug/L (ppb)

ANALYTICAL RESOURCES INCORPORATED

RSK 175/METHANE-ETHANE-ETHENE WATER SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: NS48-Friedman & Bruya, Inc.
Project: H-1590
810044

ARI ID	Client ID	PRP	TOT OUT
NS48A	MW11-1008	102%	0
NS48B	DMW8-1008	98.2%	0
NS48C	MW13-1008	95.6%	0
NS48D	DMW9-1008	91.8%	0
NS48E	DMW6-1008	97.6%	0
NS48F	DMW4-1008	101%	0
NS48G	MW5-1008	96.7%	0
NS48H	MW12-1008	95.7%	0
NS48I	MW10-1008	94.0%	0
NS48J	MW9-1008	100%	0
MB-101008	Method Blank	99.0%	0
LCS-101008	Lab Control	102%	0
LCSD-101008	Lab Control Dup	99.9%	0

	LCS/MB LIMITS	QC LIMITS
(PRP) = Propane	(80-120)	(77-120)

Log Number Range: 08-26274 to 08-26283

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
METHANE ETHANE ETHENE
Modified RSK 175
Page 1 of 1
Matrix: Water

QC Report No: NS48-Friedman & Bruya, Inc.
Project: H-1590
810044
Date Received: 10/03/08

Data Release Authorized:
Reported: 10/13/08

ARI ID	Analysis Date	Analyte	Spike	Result	Recovery	RPD
101008LCS	10/10/08	Methane	654	717	109.6%	0.3%
101008LCSD				719	109.9%	
101008LCS	10/10/08	Ethane	1,230	1,240	101.1%	0.0%
101008LCSD				1,240	101.1%	
101008LCS	10/10/08	Ethene	1,150	1,180	103.0%	0.9%
101008LCSD				1,170	102.2%	

Reported in ug/L (ppb)

SAMPLE RESULTS-CONVENTIONALS
NS48-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/20/08

Project: H-1590
Event: 810044
Date Sampled: 10/02/08
Date Received: 10/03/08

Client ID: MW11-1008
ARI ID: 08-26274 NS48A

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/03/08 100308#1	SM 2320	mg/L CaCO3	1.0	138
N-Nitrate	10/03/08	Calculated	mg-N/L	0.100	< 0.100 U
N-Nitrite	10/03/08 100308#1	EPA 353.2	mg-N/L	0.100	< 0.100 U
Nitrate + Nitrite	10/03/08 100308#1	EPA 353.2	mg-N/L	0.100	< 0.100 U
Sulfate	10/17/08 101708#1	EPA 375.2	mg/L	10.0	89.5

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NS48-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/20/08

Project: H-1590
Event: 810044
Date Sampled: 10/02/08
Date Received: 10/03/08

Client ID: DMW8-1008
ARI ID: 08-26275 NS48B

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/03/08 100308#1	SM 2320	mg/L CaCO3	1.0	151
N-Nitrate	10/03/08	Calculated	mg-N/L	0.100	< 0.100 U
N-Nitrite	10/03/08 100308#1	EPA 353.2	mg-N/L	0.100	< 0.100 U
Nitrate + Nitrite	10/03/08 100308#1	EPA 353.2	mg-N/L	0.100	< 0.100 U
Sulfate	10/17/08 101708#1	EPA 375.2	mg/L	10.0	26.8

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NS48-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized
Reported: 10/20/08

Project: H-1590
Event: 810044
Date Sampled: 10/02/08
Date Received: 10/03/08

Client ID: MW13-1008
ARI ID: 08-26276 NS48C

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/03/08 100308#1	SM 2320	mg/L CaCO3	1.0	152
N-Nitrate	10/03/08	Calculated	mg-N/L	0.100	1.92
N-Nitrite	10/03/08 100308#1	EPA 353.2	mg-N/L	0.100	0.125
Nitrate + Nitrite	10/03/08 100308#1	EPA 353.2	mg-N/L	0.100	2.05
Sulfate	10/17/08 101708#1	EPA 375.2	mg/L	100	1,800

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NS48-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized
Reported: 10/20/08

Project: H-1590
Event: 810044
Date Sampled: 10/02/08
Date Received: 10/03/08

Client ID: DMW9-1008
ARI ID: 08-26277 NS48D

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/03/08 100308#1	SM 2320	mg/L CaCO3	1.0	451
N-Nitrate	10/03/08	Calculated	mg-N/L	0.100	< 0.100 U
N-Nitrite	10/03/08 100308#1	EPA 353.2	mg-N/L	0.100	< 0.100 U
Nitrate + Nitrite	10/03/08 100308#1	EPA 353.2	mg-N/L	0.100	< 0.100 U
Sulfate	10/17/08 101708#1	EPA 375.2	mg/L	10.0	20.0

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NS48-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/20/08

Project: H-1590
Event: 810044
Date Sampled: 10/02/08
Date Received: 10/03/08

Client ID: DMW6-1008
ARI ID: 08-26278 NS48E

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/03/08 100308#1	SM 2320	mg/L CaCO3	1.0	154
N-Nitrate	10/03/08	Calculated	mg-N/L	0.100	< 0.100 U
N-Nitrite	10/03/08 100308#1	EPA 353.2	mg-N/L	0.100	< 0.100 U
Nitrate + Nitrite	10/03/08 100308#1	EPA 353.2	mg-N/L	0.100	< 0.100 U
Sulfate	10/17/08 101708#1	EPA 375.2	mg/L	10.0	39.0

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NS48-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/20/08

Project: H-1590
Event: 810044
Date Sampled: 10/02/08
Date Received: 10/03/08

Client ID: DMW4-1008
ARI ID: 08-26279 NS48F

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/03/08 100308#2	SM 2320	mg/L CaCO3	1.0	72.7
N-Nitrate	10/03/08	Calculated	mg-N/L	0.200	< 0.200 U
N-Nitrite	10/03/08 100308#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Nitrate + Nitrite	10/03/08 100308#1	EPA 353.2	mg-N/L	0.200	< 0.200 U
Sulfate	10/17/08 101708#1	EPA 375.2	mg/L	20.0	309

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NS48-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/20/08

Project: H-1590
Event: 810044
Date Sampled: 10/02/08
Date Received: 10/03/08

Client ID: MW5-1008
ARI ID: 08-26280 NS48G

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/03/08 100308#1	SM 2320	mg/L CaCO3	1.0	106
N-Nitrate	10/03/08	Calculated	mg-N/L	0.100	0.564
N-Nitrite	10/03/08 100308#1	EPA 353.2	mg-N/L	0.100	< 0.100 U
Nitrate + Nitrite	10/03/08 100308#1	EPA 353.2	mg-N/L	0.100	0.564
Sulfate	10/17/08 101708#1	EPA 375.2	mg/L	20.0	288

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NS48-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/20/08

Project: H-1590
Event: 810044
Date Sampled: 10/02/08
Date Received: 10/03/08

Client ID: MW12-1008
ARI ID: 08-26281 NS48H

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/03/08 100308#2	SM 2320	mg/L CaCO3	1.0	91.8
N-Nitrate	10/03/08	Calculated	mg-N/L	0.100	0.366
N-Nitrite	10/03/08 100308#1	EPA 353.2	mg-N/L	0.100	< 0.100 U
Nitrate + Nitrite	10/03/08 100308#1	EPA 353.2	mg-N/L	0.100	0.366
Sulfate	10/17/08 101708#1	EPA 375.2	mg/L	100	1,280

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NS48-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: JK
Reported: 10/20/08

Project: H-1590
Event: 810044
Date Sampled: 10/02/08
Date Received: 10/03/08

Client ID: MW10-1008
ARI ID: 08-26282 NS48I

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/03/08 100308#1	SM 2320	mg/L CaCO3	1.0	181
N-Nitrate	10/03/08	Calculated	mg-N/L	0.100	< 0.100 U
N-Nitrite	10/03/08 100308#1	EPA 353.2	mg-N/L	0.100	< 0.100 U
Nitrate + Nitrite	10/03/08 100308#1	EPA 353.2	mg-N/L	0.100	< 0.100 U
Sulfate	10/17/08 101708#1	EPA 375.2	mg/L	10.0	69.0

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
NS48-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: AK
Reported: 10/20/08

Project: H-1590
Event: 810044
Date Sampled: 10/02/08
Date Received: 10/03/08

Client ID: MW9-1008
ARI ID: 08-26283 NS48J

Analyte	Date Batch	Method	Units	RL	Sample
Alkalinity	10/03/08 100308#2	SM 2320	mg/L CaCO3	1.0	51.6
N-Nitrate	10/03/08	Calculated	mg-N/L	0.100	0.282
N-Nitrite	10/03/08 100308#1	EPA 353.2	mg-N/L	0.100	< 0.100 U
Nitrate + Nitrite	10/03/08 100308#1	EPA 353.2	mg-N/L	0.100	0.282
Sulfate	10/17/08 101708#1	EPA 375.2	mg/L	2.0	8.0

RL Analytical reporting limit
U Undetected at reported detection limit

MS/MSD RESULTS-CONVENTIONALS
NS48-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/20/08

Project: H-1590
Event: 810044
Date Sampled: 10/02/08
Date Received: 10/03/08

Analyte	Method	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: NS48A Client ID: MW11-1008							
N-Nitrite	EPA 353.2	10/03/08	mg-N/L	< 0.100	9.10	10.0	91.0%
Nitrate + Nitrite	EPA 353.2	10/03/08	mg-N/L	< 0.100	9.50	10.0	95.0%
Sulfate	EPA 375.2	10/17/08	mg/L	89.5	296	200	103.2%

REPLICATE RESULTS-CONVENTIONALS
NS48-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized
Reported: 10/20/08

Project: H-1590
Event: 810044
Date Sampled: 10/02/08
Date Received: 10/03/08

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: NS48A Client ID: MW11-1008						
Alkalinity	SM 2320	10/03/08	mg/L CaCO3	138	137	0.7%
N-Nitrite	EPA 353.2	10/03/08	mg-N/L	< 0.100	< 0.100	NA
Nitrate + Nitrite	EPA 353.2	10/03/08	mg-N/L	< 0.100	< 0.100	NA
Sulfate	EPA 375.2	10/17/08	mg/L	89.5	90.2	0.8%
ARI ID: NS48F Client ID: DMW4-1008						
Alkalinity	SM 2320	10/03/08	mg/L CaCO3	72.7	72.2	0.7%

METHOD BLANK RESULTS-CONVENTIONALS
NS48-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/20/08

Project: H-1590
Event: 810044
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank
N-Nitrite	EPA 353.2	10/03/08	mg-N/L	< 0.010 U
Nitrate + Nitrite	EPA 353.2	10/03/08	mg-N/L	< 0.010 U
Sulfate	EPA 375.2	10/17/08	mg/L	< 2.0 U

STANDARD REFERENCE RESULTS-CONVENTIONALS
NS48-Friedman & Bruya, Inc.

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 10/20/08

Project: H-1590
Event: 810044
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Method	Date	Units	SRM	True Value	Recovery
Alkalinity	SM 2320	10/03/08	mg/L CaCO3	99.4	101	98.4%
ERA #P114506		10/03/08		101	101	100.0%
N-Nitrite	EPA 353.2	10/03/08	mg-N/L	0.502	0.500	100.4%
ERA #23034						
Nitrate + Nitrite	EPA 353.2	10/03/08	mg-N/L	0.522	0.500	104.4%
ERA #20034						
Sulfate	EPA 375.2	10/17/08	mg/L	26.2	25.0	104.8%
ERA #37065						

7.2°C NS48

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 Fax # (206) 283-5044

SUBCONTRACTER

PROJECT NAME/NO. 810044

PO # H-1590

REMARKS

Please Email Results
merdahl@friedmanandbruya.com

Page # 1 of 1

TURNAROUND TIME
☑ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

						ANALYSES REQUESTED										
Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Oil and Grease	EPH	VPH	Nitrate	Sulfate	Alkalinity	Dissolved methane				Notes
MW11-1008		10/2/08		w	3				X	X	X	X				
DMW8-1008																
MW13-1008																
DMW9-1008																
DMW6-1008																
DMW4-1008																
MW5-1008																
MW12-1008																
MW10-1008																
MW9-1008																

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	Michael Erdahl	Friedman & Bruya	10/3/08	12:15
Received by: [signature]	Brian Kegel	ARI	10/3/08	1400
Relinquished by:				
Received by:				

810044

SAMPLE CHAIN OF CUSTODY

ME 10/3/08 V3/AIE

Page # 1 of

Send Report To: Mike Staton
Company: SLR International Corp
Address: 22122 20th Ave NE, #H-150
City, State, ZIP: Bothell, WA 98021
Phone #: (425) 402-8800 Fax #: (425) 402-8488

SAMPLERS (signature): Chris Lee

PROJECT NAME/NO.: Former ARCO # 0855 Longview, WA 001.0173.00007

PO #: 001.0173.00007

REMARKS: ALL VOAs UNPRESERVED - NOTE REDUCED HOLDING TIME FOR BTEX
48-Hour HOLD TIME FOR NITRATE

TURNAROUND TIME
- [x] Standard (2 Weeks)
- [ ] RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Dispose after 30 days
- [ ] Return samples
- [ ] Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Sulfate & Nitrate by 300.0	Dissolved Mn by 200.8	Alkalinity by 310.1	Dissolved methane by RSK-175			Notes
MW11-1008	01 A-D	10/3/08	0910	Water	7		X	X				X	X	X	X			
DMW8-1008	02 A-D		0950															
MW13-1008	03 A-D		1020															
DMW9-1008	04 A-D		1105															
DMW6-1008	05 A-D		1300															
DMW4-1008	06 A-D		1345															
MW5-1008	07 A-D		1430															
MW12-1008	08 A-D		1515															
MW10-1008	09 A-D		1600															Samples received at 4 °C
MW9-1008	10 A-D		1700															

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Chris Lee	SLR	10/3/08	1000
Received by:		Michael Erdahl	FRBnc	1	1130
Relinquished by:					
Received by:	Thermometer #209				