



January 11, 2017

Mr. Rogelio Riojas
Sea Mar Community Health Centers
1040 South Henderson Street
Seattle, Washington 98108

**RE: 4th Quarter 2016 Groundwater Monitoring Report
Sea Mar Community Health Center
9635 Des Moines Memorial Drive South, Seattle, Washington 98108
RGI Project No. 2016-023A**

Dear Mr. Riojas:

The Riley Group, Inc. (RGI) has completed the Fourth Quarter 2016 Groundwater Monitoring Report pertaining to the Sea Mar Community Health Center, located at 9635 Des Moines Memorial Drive South, Seattle, Washington (hereafter referred to as the Site, Figure 1).

SCOPE OF WORK

The objectives for this project include the following:

- Perform groundwater compliance monitoring for 11 existing groundwater monitoring wells located throughout the Site.

This quarterly groundwater sampling event did not include sampling and testing of monitoring wells located on the west-adjointing property.

GROUNDWATER SAMPLING EVENT

On December 15, 2016, RGI sampled nine groundwater monitoring wells (MW-2, MW-11, MW-12, MW-14, MW-15, and MW-17 through MW-20), located throughout the Site. RGI attempted to sample MW-16, however, it may have been covered and/or destroyed during construction. RGI also attempted to sample MW-3 but it was beneath a parked vehicle.

The locations of all groundwater monitoring wells are illustrated on Figure 2.

GROUNDWATER ELEVATIONS AND FLOW DIRECTION

Prior to purging each groundwater monitoring well, depth to static groundwater was measured using an electronic water level meter in all 0.75- to 1.5-inch-diameter monitoring wells located on the Site. Depth to groundwater ranged from 1.69 to 5.85 feet below top of casing (TOC). Corresponding groundwater elevations ranged from 4.73 feet (MW-11) to 17.61 feet (MW-2) (Table 1 and Figure 2).

Groundwater flow direction was determined to be north beneath the Site. This groundwater flow data is generally consistent with previous groundwater sampling events.

GROUNDWATER SAMPLE COLLECTION

Prior to sampling, groundwater monitoring wells were purged using a peristaltic pump and new polyethylene tubing. Well purging continued until at least three well volumes were purged, until

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field parameters stabilized, or the well pumped dry. During the December 2016 event, water quality parameters (for example, water temperature, dissolved oxygen, pH, and conductivity) were obtained using a Horiba U-52 water quality meter with a flow-through cell. Groundwater was transferred to laboratory-supplied containers using standard low-flow sampling methodology. Sample containers were placed in an ice-chilled cooler and transported to the analytical laboratory using standard chain-of-custody protocols. Groundwater recovery, startup time, and duration of the purging operations were recorded on field data sheets. These field documents are maintained in a permanent project file and are available upon written request.

Purge water was placed in a labeled 55-gallon drum and left on the Site pending profiling and disposal.

LABORATORY ANALYSIS

Groundwater samples were submitted to Friedman and Bruya, Inc. of Seattle, Washington and analyzed for one or more of the following:

- Gasoline-range total petroleum hydrocarbons (TPH) using the Northwest Test Method NWTPH-Gx.
- Diesel-range TPH using Northwest Test Method NWTPH-Dx without silica gel cleanup.
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA Method 8021B.
- Halogenated Volatile Organic Compounds (HVOCs) using EPA Method 8260C.
- Naphthalenes (including naphthalene, 1-methyl naphthalene and 2-methyl naphthalene) using EPA Method 8270D.

Copies of the analytical laboratory report and associated sample chain-of-custody are included in Appendix A.

GROUNDWATER CLEANUP LEVELS (CULs)

Groundwater analytical results obtained during this project were compared to the following groundwater screening levels:

- Washington State Department of Ecology Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) for Ground Water (WAC 173-340-900, Table 720-1).

When no MTCA Method A CULs for Ground Water had been established for a given compound, the most stringent of the following groundwater screening levels were referenced:

- MTCA Method B Standard Formula Values for Ground Water obtained from the Cleanup Levels and Risk Calculations (CLARC) database.

FINDINGS

ANALYTICAL RESULTS

Analytical results and groundwater screening levels for the Site are summarized in Table 1, Figure 2.

Gasoline-range TPH and BTEX were not detected above laboratory detection limits (non-detect) in the two samples submitted for analysis (MW-11 and MW-12).

Diesel and oil-range TPH were either not detected or were detected at concentrations below the MTCA Method A CUL of 500 µg/L in any of the seven samples submitted for analysis (MW-2, MW-

11, MW-12, and MW-17 through MW-20). Several of the low level detections were “flagged” by the lab chemist as “the sample chromatographic pattern does not resemble the fuel standard used for quantitation.”

Naphthalenes were non-detect in MW-17.

Six of nine water samples analyzed for VOCs and HVOCs were either non-detect, or had concentrations below the applicable MTCA Method A CUL.

CONCLUSIONS & RECOMMENDATIONS

Based on our findings, RGI draws the following conclusions:

- Groundwater concentrations of gasoline-, diesel, and oil-range TPH, BTEX, are below the applicable groundwater CULs throughout the Site.
- HVOCs are below their applicable groundwater CULs throughout the Site. However, HVOC concentrations have recently been found in former (damaged/destroyed during construction) wells at concentrations above MTCA Method A CULs along the western property line (at former wells MW-4 and MW-8).

RGI recommends continued quarterly groundwater monitoring on the Site and the replacement and/or repair of monitoring wells MW-4, MW-8, MW-16, and MW-17 (as requested in change order No. 2, dated December 20, 2016).

RGI recommends total and dissolved metals sampling and analysis during subsequent events.

This report is the property of RGI, Sea Mar Community Health Centers, and their representatives and was prepared in a manner consistent with the level of skill and care ordinarily exercised by members of the profession currently practicing in the same locality and under similar conditions. This report is intended for specific application to 9635 Des Moines Memorial Drive South in Seattle, Washington. No other warranty, expressed or implied, is made.

If you have any questions or need additional information, please contact the undersigned at (425) 415-0551.

Respectfully submitted,

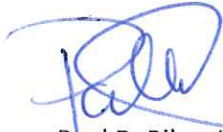
THE RILEY GROUP, INC.



Amelia C. Oates, GIT
Project Geologist



Anna J. Jordan, LG
Project Geologist



Paul D. Riley, LG, LHG
Principal

Attachments Table 1, Summary of Groundwater Sample Analytical Results
Figure 1, Site Vicinity Map
Figure 2, Site Plan with Groundwater Elevation Contours and Analytical Laboratory
Appendix A, Analytical Laboratory Report

Distribution Mr. Rogelio Riojas, Sea Mar Community Health Centers (PDF)

Table 1, Page 1 of 4. Summary of Groundwater Analytical Laboratory Results

Sea Mar Community Health Center

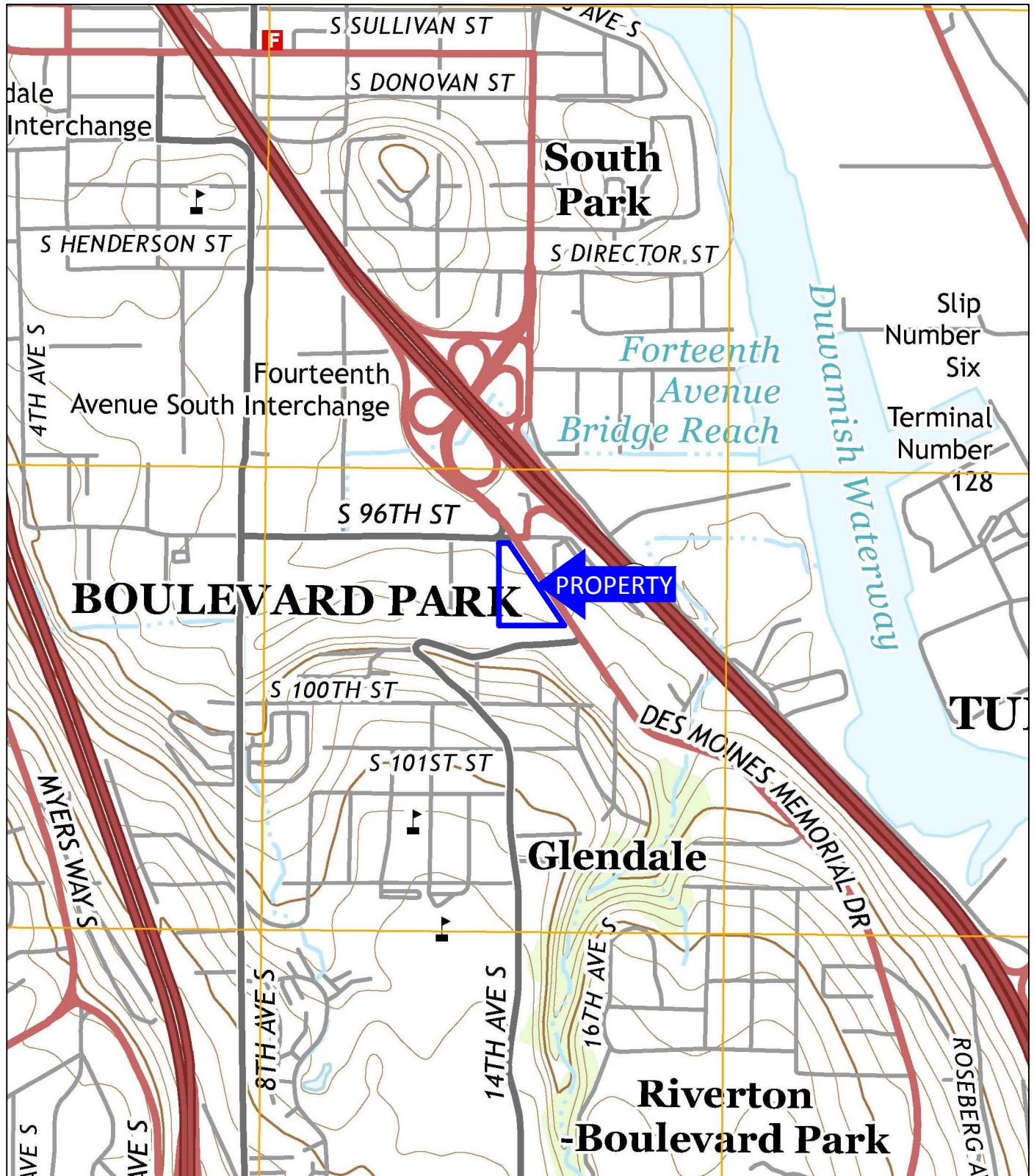
9635 Des Moines Memorial Drive South, Seattle, Washington 98108

The Riley Group, Inc. Project No. 2016-023A

Sample Number	Sample Date	Top of Casing (TOC) Elevation	Depth to Water (below TOC)	Groundwater Elevation	Gasoline TPH	BTEX				Diesel TPH	Oil TPH	Diesel TPH	Oil TPH	PCE	TCE	cis-1,2-DCE	Trans-1,2-DCE	VC	1,1-DCE	Other HVOCs	Other VOCs	SVOCs	Total Metals					Dissolved Metals						
						B	T	E	X	w/o silica gel	w/ silica gel	As	Cd										Cr	Pb	Hg	As	Cd	Cr	Pb	Hg				
Monitoring Wells																																		
MW-1 Screened Interval 5 - 10 ft bgs, Total boring depth 10 ft bgs, MW-1 destroyed during construction.																																		
MW1	05/06/16	28.3	5.40	22.9	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW1-H2O	03/07/16	28.3	4.65	23.6	----	----	----	----	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
MW-1	01/11/08	28.3	5.70	22.59	----	----	----	----	----	----	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
MW-2 Screened Interval 5 - 10 ft bgs, Total boring depth 9.5 bgs.																																		
MW2	12/15/16	19.30	1.69	17.61	----	----	----	----	210 x	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW2	09/12/16	19.30	2.30	17.00	----	----	----	----	200 x	ND<300	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW2	07/15/16	19.30	2.05	17.25	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW2	06/30/16	19.30	2.02	17.28	----	----	----	----	290x	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW2-H2O	03/07/16	19.30	1.81	17.5	----	----	----	----	340x	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW-2	01/11/08	19.30	2.10	17.20	----	----	----	----	----	----	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW-3 Screened Interval 5 - 10 ft bgs, Total boring depth 12 ft bgs.																																		
MW3	09/12/16	20.3	5.04	15.28	----	----	----	----	ND<60	ND<300	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW-3	01/11/08	20.3	3.66	16.66	----	----	----	----	----	----	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW-4 Screened Interval 5 - 10 ft bgs, Total boring depth 12 ft bgs, MW-4 destroyed during construction.																																		
MW4	07/15/16	13.13	5.88	7.25	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW4	06/30/16	13.13	5.84	7.29	----	----	----	----	ND<50	ND<250	----	----	ND<1	3.9	16	ND<1	4.9	ND<1	ND	ND	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW4	05/06/16	13.13	5.28	7.85	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MW4-H2O	03/07/16	13.13	4.56	8.57	----	----	----	----	52x	ND<250	----	----	ND<1	ND<1	7.4	ND<1	4.6	ND<1	ND	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
82114OS-1:GW	08/21/14	13.13	----	----	----	----	----	----	----	----	----	----	ND<1	7.02	31.9	ND<1	6.43	ND<1	ND	ND	----	----	----	----	----	----	----	----	----	----	----	----	----	
52214OS-1:GW	05/22/14	13.13	----	----	----	----	----	----	----	----	----	----	ND<1	5.35	16.8	ND<1	7.26	ND<1	ND	ND	----	----	----	----	----	----	----	----	----	----	----	----	----	
21414OS-1:GW	02/14/14	13.13	----	----	----	----	----	----	----	----	----	----	ND<1	5.31	15.3	ND<1	ND<0.20	ND<1	ND	ND	----	----	----	----	----	----	----	----	----	----	----	----	----	
OS-1-81613	08/16/13	13.13	----	----	----	----	----	----	----	----	----	----	ND<1	9.05	38.0	ND<1	14.6	ND<1	ND	ND	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW-4	01/16/08	13.13	6.81	6.32	----	----	----	----	----	----	----	----	ND<1	140	63	ND<1	9.8	ND<1	----	EDC=1.0 CE=7.3 1,3-DB=1.6	ND<0.1	2.88	ND<1	2.44	8.98	ND<0.2	----	----	----	----	----	----		
MW-4	01/11/08	13.13	6.81	6.32	ND<100	ND<1	ND<1	ND<1	ND<3	----	----	ND<50	ND<250	ND<1	150ve	70	ND<1	12	ND<1	ND	EDC=1.1	----	----	----	----	----	----	----	----	----	----	----	----	
MW-5 Screened Interval 5 - 10 ft bgs, Total boring depth 10 ft bgs, MW-5 decommissioned 06/08/16.																																		
MW5	05/06/16	10.00	2.65	7.35	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW5-H2O	03/07/16	10.00	2.31	7.69	----	----	----	----	----	----	----	----	ND<1	ND<1	ND<1	ND<1	ND<0.2	ND<1	ND	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
52214OS-2:GW	05/22/14	10.00	----	----	----	----	----	----	----	----	----	----	ND<1	ND<0.5	ND<1	ND<1	ND<0.2	ND<1	ND	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
022014OS-2:GW	02/20/14	10.00	----	----	----	----	----	----	----	----	----	----	ND<1	ND<0.5	ND<1	ND<1	ND<0.2	ND<1	ND	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
OS-2-81613	05/16/13	10.00	----	----	----	----	----	----	----	----	----	----	ND<1	ND<1	ND<1	ND<1	ND<0.2	ND<1	ND	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW-5	01/11/08	10.00	2.02	7.98	ND<100	ND<1	ND<1	ND<1	ND<3	----	----	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW-6 Screened Interval 5 - 10 ft bgs, Total boring depth 10 ft bgs, MW-6 decommissioned 06/08/16.																																		
MW6	05/06/16	6.78	1.89	4.89	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW6-H2O	03/07/16	6.78	2.695	4.09	----	----	----	----	200x	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
022014OS-4:GW	02/20/14	6.78	----	----	----	----	----	----	----	----	----	----	ND<1	ND<0.5	ND<1	ND<1	ND<0.2	ND<1	ND	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
OS-4-81613	08/16/13	6.78	----	----	----	----	----	----	----	----	----	----	ND<1	ND<1	ND<1	ND<1	ND<0.2	ND<1	ND	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW-6	01/16/08	6.78	2.84	3.94	----	----	----	----	----	----	ND<93	ND<460	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW-6	01/11/08	6.78	2.84	3.94	ND<100	ND<1	ND<1	ND<1	ND<3	----	----	----	ND<1	ND<1	ND<1	ND<1	ND<0.2	ND<1	ND	Acetone=22	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW-7 Screened Interval 5 - 10 ft bgs, Total boring depth 10 ft bgs, MW-7 decommissioned 06/08/16.																																		
MW7	05/06/16	9.17	0	9.17	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MW7-H2O	03/07/16	9.17	0.0	----	2,500	11	ND<1	3.6	3.8	1,500x	ND<250	----	ND<1	ND<1	ND<1	ND<1	ND<0.2	ND<1	ND	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
022014OS-3:GW	02/20/14	9.17	----	----	----	----	----	----	----	----	----	----	ND<1	ND<0.5	ND<1	ND<1	ND<0.2	ND<1	ND	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MTCA Method A Cleanup Levels for Ground Water					800/1,000 ¹	5	1,000	700	1,000	500	500	500	500	5	5	----	----	0.2	----	Analyte Specific	EDC = 5	Analyte Specific	5	5	50	15	2	5	5	50	15	2		
MTCA Method B Cleanup Levels for Ground Water ²					----	----	----	----	----	----	----	----	----	----	----	16	160	----	400	----	Acetone = 7,200	----	----	----	----	----	----	----	----	----	----	----	----	

Table 1, Page 3 of 4. Summary of Groundwater Analytical Laboratory Results
Sea Mar Community Health Center
9635 Des Moines Memorial Drive South, Seattle, Washington 98108
The Riley Group, Inc. Project No. 2016-023A

Sample Number	Sample Date	Top of Casing (TOC) Elevation	Depth to Water (below TOC)	Groundwater Elevation	Gasoline TPH	BTEX				Diesel TPH w/o silica gel	Oil TPH w/ silica gel	PCE	TCE	cis-1,2-DCE	Trans-1,2-DCE	VC	1,1-DCE	Other HVOCs	Other VOCs	SVOCs	Total Metals					Dissolved Metals						
						B	T	E	X												As	Cd	Cr	Pb	Hg	As	Cd	Cr	Pb	Hg		
MW16 Screened Interval 9 - 19 ft bgs, Total boring depth 20 ft bgs, MW16 destroyed and/or damaged during construction (unlocatable).																																
MW16	09/12/16	22.03	2.24	19.79	---	---	---	---	---	110x	ND<250	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---				
MW16-W	07/14/16	22.03	2.10	19.93	---	---	---	---	---	150x	ND<250	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---				
MW17 Screened Interval 5-15 ft bgs, Total boring depth 15 ft bgs, MW17 damaged during construction.																																
MW17	12/15/16	11.52	6.00	5.52	---	---	---	---	---	ND<50	ND<250	---	---	ND<1	ND<1	ND<1	ND<1	ND<0.2	ND<1	ND	---	Naph = ND	---	---	---	---	---	---	---			
MW17	09/12/16	11.52	3.01	8.51	---	---	---	---	---	76x	310	---	---	ND<1	ND<1	ND<1	ND<1	ND<0.2	ND<1	ND	---	---	---	---	---	---	---	---	---			
MW17-W	07/14/16	11.52	3.01	8.51	ND<100	ND<0.35	ND<1	ND<1	ND<3	230x	ND<260	---	---	ND<1	ND<1	ND<1	ND<1	ND<0.2	ND<1	ND	ND	---	---	---	---	---	---	---	---			
MW18 Screened Interval 10 - 20 ft bgs, Total boring depth 20 ft bgs																																
MW18	12/15/16	16.41	5.85	10.56	---	---	---	---	---	ND<50	ND<250	---	---	ND<1	1.5	ND<1	ND<1	ND<0.2	ND<1	ND	---	---	---	---	---	---	---	---	---			
MW18	09/12/16	16.41	6.90	9.51	---	---	---	---	---	ND<50	ND<250	---	---	ND<1	2.1	ND<1	ND<1	ND<0.2	ND<1	ND	---	---	---	---	---	---	---	---	---			
MW18-W	07/14/16	16.41	6.27	10.14	ND<100	ND<0.35	ND<1	ND<1	ND<3	63x	ND<250	---	---	ND<1	130	15	ND<1	ND<0.2	1.9	ND	ND	---	---	---	---	---	---	---	---			
MW19 Screened Interval 10 - 20 ft bgs, Total boring depth 20 ft bgs																																
MW19	12/15/16	15.85	4.47	11.38	---	---	---	---	---	ND<50	ND<250	---	---	ND<1	ND<1	ND<1	ND<1	ND<0.2	ND<1	DCA=2.2	---	---	---	---	---	---	---	---	---			
MW19	09/12/16	15.85	5.54	10.31	---	---	---	---	---	81x	ND<250	---	---	ND<1	ND<1	ND<1	ND<1	ND<0.2	ND<1	DCA=1.6	---	---	---	---	---	---	---	---	---			
MW19	09/08/16	15.85	8.00	7.85	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
MW20 Screened Interval 10 - 20 ft bgs, Total boring depth 23 ft bgs																																
MW20	12/15/16	16.7	5.62	11.08	---	---	---	---	---	ND<50	ND<250	---	---	ND<1	ND<1	ND<1	ND<1	ND<0.2	ND<1	ND	---	---	---	---	---	---	---	---	---			
MW20	09/12/16	16.7	6.55	10.15	---	---	---	---	---	ND<50	ND<250	---	---	ND<1	ND<1	ND<1	ND<1	ND<0.2	ND<1	ND	---	---	---	---	---	---	---	---	---			
MW20	09/08/16	16.7	8.00	8.70	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
Monitoring Wells on West-Adjoining Property																																
MW6																																
BK MW-6	09/30/16	16.55	6.46	10.09	---	---	---	---	---	---	---	---	---	ND<1	16	ND<1	ND<1	ND<0.2	ND<1	ND	---	---	---	---	---	---	---	---	---			
82114MW-6:GW	08/22/14	---	---	---	---	---	---	---	---	---	---	---	---	ND<1.00	88.6	2.99	ND<1.00	ND<0.200	ND<1.00	ND	ND	---	---	---	---	---	---	---	---			
52114-MW-6:6W	05/21/14	---	---	---	---	---	---	---	---	---	---	---	---	ND<1.00	18.9	ND<1.00	ND<1.00	ND<0.200	ND<1.00	ND	ND	---	---	---	---	---	---	---	---			
022014MW-6:GW	02/20/14	---	---	---	---	---	---	---	---	---	---	---	---	ND<1.00	85.0	2.17	ND<1.00	ND<0.200	ND<1.00	ND	ND	---	---	---	---	---	---	---	---			
MW7																																
BK MW-7	09/30/16	14.38	4.45	9.93	---	---	---	---	---	---	---	---	---	ND<1	300	50	ND<1	3.3	ND<1	EDC=5.6	---	---	---	---	---	---	---	---	---			
82114MW-7:GW	08/22/14	---	---	---	---	---	---	---	---	---	---	---	---	ND<1.00	ND<0.500	30.0	ND<1.00	8.19	ND<1.00	EDC=1.76	ND	---	---	---	---	---	---	---	---			
52114-MW-7:6W	05/21/14	---	---	---	---	---	---	---	---	---	---	---	---	ND<1.00	ND<0.500	143	1.97	34.5	ND<1.00	EDC=2.79	ND	---	---	---	---	---	---	---	---			
21414MW-7:GW	02/14/14	---	---	---	---	---	---	---	---	---	---	---	---	ND<1.00	1.94	297	3.44	95.8	ND<1.00	EDC=15.7	ND	---	---	---	---	---	---	---	---			
MW8																																
BK MW-8	09/30/16	13.86	4.13	9.73	---	---	---	---	---	---	---	---	---	ND<1	62	8.3	ND<1	ND<0.2	ND<1	ND	---	---	---	---	---	---	---	---	---			
82114MW-8:GW	08/22/14	---	---	---	---	---	---	---	---	---	---	---	---	---	615	22.1	ND<1.00	ND<0.200	1.05	EDC=4.87	ND	---	---	---	---	---	---	---	---			
52114-MW-8:6W	05/21/14	---	---	---	---	---	---	---	---	---	---	---	---	ND<1.00	558	23.1	ND<1.00	ND<0.200	ND<1.00	ND	ND	---	---	---	---	---	---	---	---			
21414MW-8:GW	02/14/14	---	---	---	---	---	---	---	---	---	---	---	---	ND<1.00	878	32.0	ND<1.00	ND<0.200	1.97	EDC=7.19	ND	---	---	---	---	---	---	---	---			
Groundwater Grab Samples																																
3H2O-1	06/14/16	---	---	---	ND<100	ND<1	ND<1	ND<1	ND<3	190x	ND<250	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
P1-H2O	03/04/16	---	3	---	ND<100	---	---	---	---	300x	ND<250	---	---	ND<1	ND<1	ND<1	ND<1	ND<0.2	ND<1	ND	---	---	---	---	---	---	---	---	---			
P2-H2O	03/04/16	---	7	---	---	---	---	---	---	---	---	---	---	ND<1	ND<1	ND<1	ND<1	ND<0.2	ND<1	ND	---	---	---	---	---	---	---	---	---			
P3-H2O	03/04/16	---	7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
P4-H2O	03/04/16	---	7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
B8-H2O	01/03/08	---	7.00	---	ND<100	ND<1	ND<1	ND<1	ND<3	---	---	ND<54	ND<270	ND<1	ND<1	ND<1	ND<1	ND<0.2	ND<1	ND	ND	ND<0.1	---	---	---	---	---	---	---			
B8-H2O-f	01/03/08	---	6.50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	6.08	ND<1	1.23	ND<1	ND<0.2		
MTCA Method A Cleanup Levels for Ground Water					800/1,000 ¹	5	1,000	700	1,000	500	500	500	500	5	5	---	---	0.2	---	Analyte Specific	Analyte Specific	Analyte Specific	5	5	50	15	2	5	5	50	15	2
MTCA Method B Cleanup Levels for Ground Water²					---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---



USGS, 2014, Seattle South, Washington
7.5-Minute Quadrangle

Approximate Scale: 1"=1000'



Corporate Office
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Sea Mar Community Health Center
RGI Project Number
2016-023A

Property Vicinity Map

Figure 1
Date Drawn:
01/2017

Address: 9635 Des Moines Memorial Drive South, Seattle, Washington 98108

MW-5 (Decommissioned 6/2016)					
Date	Gas	BTEX	DSL	Oil	HVOCs
03/07/16	----	----	----	----	ND
05/22/14	----	----	----	----	ND
02/20/14	----	----	----	----	ND
05/16/13	----	----	----	----	ND
01/11/08	ND	ND	ND*	ND*	----

MW-9 (Remediated) (Decommissioned 6/2016)										
Date	Gas	DSL	Oil	HVOCs	Dissolved MTCA 5 Metals					
03/07/16	ND	730x	ND	ND	ND	ND	ND	ND	ND	ND

MW-13					
Date	HVOCs	Total Cd	Pb	Dissolved Cd	Pb
6/30/16	ND	----	----	ND	ND
5/6/16	ND	ND	5.32	ND	ND

SP-06-H2O (Test Probe)						
Date	Gas	B	T	E	X	
10/26/07	ND	ND	ND	ND	ND	4

MW-12					
Date	Gas	BTEX	DSL	Oil	
12/15/16	ND	ND	ND	ND	ND
09/12/16	ND	ND	ND	80x	ND
6/30/16	ND	ND	ND	220x	ND
05/06/16	ND	ND	ND	200x	ND

MW-6 (Decommissioned 6/2016)					
Date	Gas	BTEX	DSL	Oil	HVOCs
03/07/16	----	----	200x	ND	----
02/20/14	----	ND	----	----	ND
08/16/13	----	ND	----	----	ND
01/16/08	----	----	ND	ND	----
01/11/08	ND	ND	----	----	ND

SP-08-H2O (Test Probe)					
Date	Gas	BTEX	DSL*	Oil*	
10/26/07	ND	ND	ND	67	ND

MW-11							
Date	Gas	B	T	E	X	DSL	Oil
12/15/16	ND	ND	ND	ND	ND	140x	ND
09/12/16	ND	ND	ND	ND	ND	69x	ND
6/30/16	ND	ND	ND	ND	ND	190x	ND
05/06/16	ND	1.7	ND	ND	ND	200x	ND

SP-07-H2O (Remediated) (Test Probe)							
Date	Gas	B	T	E	X	DSL*	Oil*
10/26/07	1,200	17	6	6	30	740	ND

SP-09-H2O					
Date	Gas	BTEX	DSL*	Oil*	HVOCs
10/26/07	ND	ND	76	ND	ND

SP-10-H2O (Test Probe)				
Date	Gas	DSL*	Oil*	
10/26/07	ND	150	ND	

MW-7 (Remediated) (Decommissioned 6/2016)													
Date	Gas	B	T	E	X	DSL	Oil	HVOCs	Total MTCA 5 Metals				
03/07/16	2,500	11	ND	3.6	3.8	1,500x	ND	ND	As	Cd	Cr	Pb	Hg
02/20/14	----	----	----	----	----	----	ND	ND	----	----	----	----	----
08/16/13	----	----	----	----	----	----	ND	ND	----	----	----	----	----
01/25/08	4,000	43	20	34	27	----	----	----	----	----	----	----	----
01/16/08	5,500	61	29	46	45	----	----	----	10.8	ND	2.12	2.83	ND
01/11/08	----	----	----	----	----	----	----	890x*	ND*	----	----	----	----

B8-H2O (Test Probe)										
Date	Gas	BTEX	DSL*	Oil*	HVOCs	Total MTCA 5 Metals				
01/03/08	ND	ND	ND	ND	ND	6.08	ND	1.23	ND	ND

MW-14	
Date	HVOCs
12/15/16	ND
9/12/16	ND
6/30/16	ND
5/6/16	ND

MW-15	
Date	HVOCs
12/15/16	ND
9/12/16	ND
6/30/16	ND
5/6/16	ND

MW-3		
Date	DSL	Oil
09/12/16	ND	ND
01/11/08	ND*	ND*

MW-10 (Decommissioned 6/2016)		
Date	DSL	Oil
03/07/16	56x	ND

MW-2		
Date	DSL	Oil
12/15/16	210x	ND
09/12/16	200x	ND
06/30/16	290x	ND
03/07/16	340x	ND
01/11/08	ND*	ND*

MW-16		
Date	DSL	Oil
9/12/16	110x	ND
07/14/16	150x	ND

MW-1 (Damaged During Construction)		
Date	DSL	Oil
03/07/16	ND	ND
01/11/08	ND*	ND*

SP-01-H2O (Remediated)		
Date	DSL	Oil
10/26/07	1,500,000	37,000

P2-H2O (Decommissioned)	
Date	HVOCs
03/04/16	ND

MW-17								
Date	Gas	BTEX	DSL	Oil	Naph	TCE	Cis-1,2-DCE	1,1-DCE
12/15/16	----	----	ND	ND	ND	ND	ND	ND
09/12/16	----	----	76x	310	----	ND	ND	ND
07/14/16	ND	ND	230x	ND	----	ND	ND	ND

P1-H2O (Test Probe)					
Date	Gas	DSL	Oil	HVOCs	
03/04/16	ND	300x	ND	ND	ND

SP-04-H2O (Remediated) (Test Probe)											
Date	Gas	B	T	E	X	DSL*	Oil*	TCE	VC	cis-1,2-DCE	Other HVOCs
10/26/07	370	ND	ND	3	15	3,700	2,900	1.9	3.8	18	ND

MW-4 (Damaged During Construction)									
Date	Gas	BTEX	DSL	Oil	TCE	VC	cis-1,2-DCE	Other VOCs	Total Metals
06/30/16	----	----	ND	ND	3.9	4.9	16	ND	----
03/07/16	----	----	52x	ND	ND	4.6	7.4	----	----
08/21/14	----	----	----	----	7.02	6.43	31.9	ND	----
05/22/14	----	----	----	----	5.35	7.26	16.8	ND	----
02/14/14	----	----	----	----	5.31	ND	15.3	ND	----
08/16/13	----	----	----	----	9.05	14.6	38	ND	----
01/16/08	----	----	----	----	140	9.8	63	EDC=1.0 EC=7.3	As=2.88 Cr=2.44
01/11/08	ND	ND	ND*	ND*	150ve	12	70	1,1-DCA=1.6	Pb=8.98

BK-MW8 (On Adjoining Property)						
Date	Depth	PCE	TCE	cis-1,2-DCE	VC	Other HVOCs
09/30/16	4.13'	ND	62	8.3	ND	ND
08/22/14	----	ND	615	22.1	ND	EDC=4.87 1,1-DCE=1.05
05/21/14	----	ND	558	23.1	ND	ND
02/14/14	----	ND	878	32.0	ND	EDC=7.19 1,1-DCE=1.97

BK-MW7 (On Adjoining Property)						
Date	Depth	PCE	TCE	cis-1,2-DCE	VC	Other HVOCs
09/30/16	8.31'	ND	300	50	3.3	EDC=5.6
08/22/14	----	ND	ND	30.0	8.19	EDC=1.76
05/21/14	----	ND	ND	143	34.5	EDC=2.79
02/14/14	----	ND	1.94	297	95.8	EDC=15.7

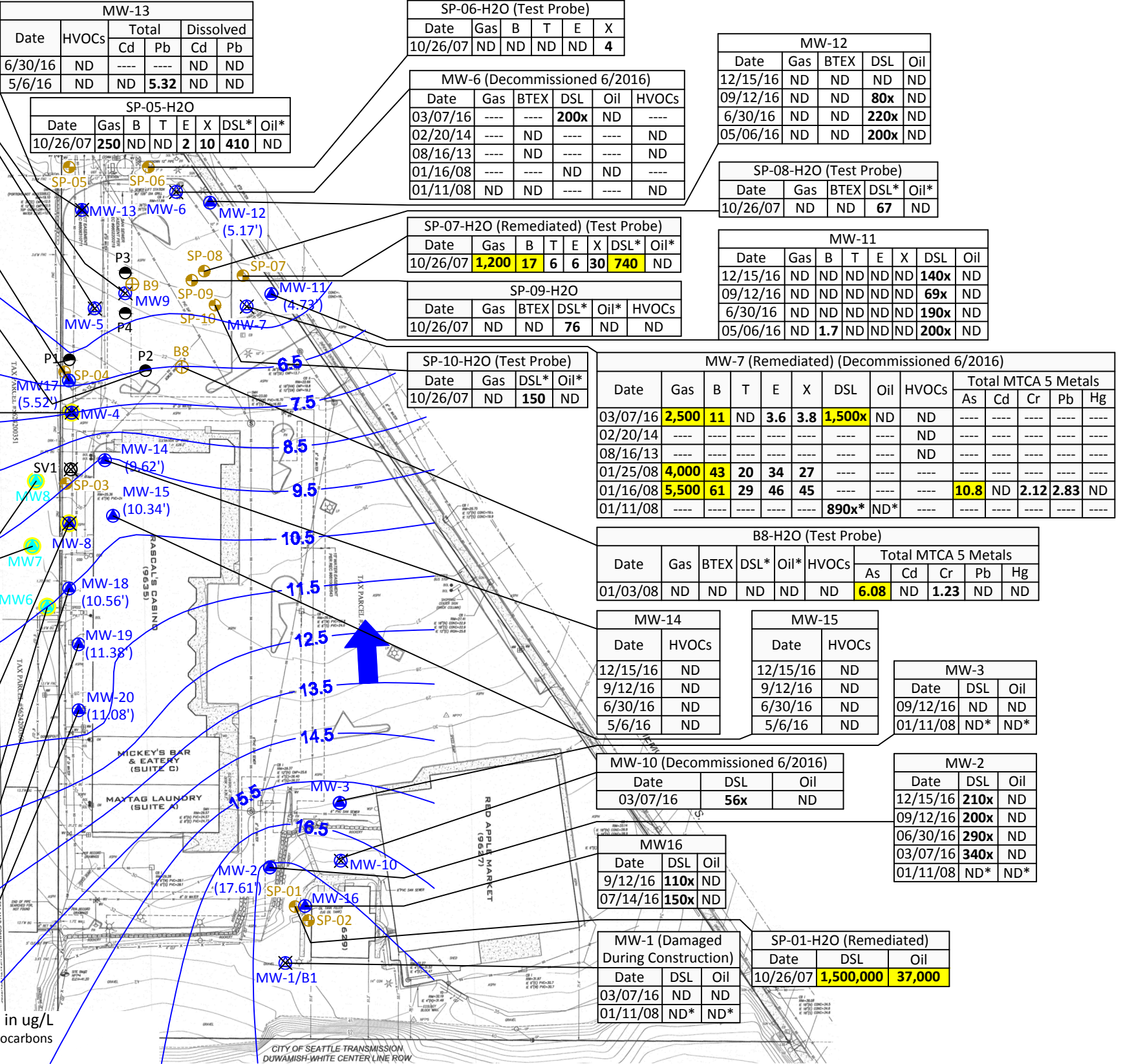
BK-MW6 (On Adjoining Property)						
Date	Depth	PCE	TCE	cis-1,2-DCE	VC	1,1-DCE
09/30/16	6.46'	ND	16	ND	ND	ND
08/22/14	----	ND	88.6	2.99	ND	ND
05/21/14	----	ND	18.9	ND	ND	ND
02/20/14	----	ND	85	2.17	ND	ND

MW-8 (Well Destroyed)					
Date	DSL	Oil	TCE	Cis-1,2-DCE	1,1-DCA
06/30/16	100x	ND	33	7.0	1.7
03/07/16	80x	ND	20	5.5	1.9

MW-18								
Date	Gas	BTEX	DSL	Oil	PCE	TCE	Cis-1,2-DCE	1,1-DCE
12/15/16	----	----	ND	ND	1.5	ND	ND	ND
9/12/16	----	----	ND	ND	2.1	ND	ND	ND
7/14/16	ND	ND	63x	ND	130	15	1.9	

MW-19					
Date	DSL	Oil	TCE	Cis-1,2-DCE	1,1-DCA
12/15/16	ND	ND	ND	ND	2.2
9/12/16	81x	ND	ND	ND	1.6

MW-20			
Date	DSL	Oil	HVOCs
12/15/16	ND	ND	ND
9/12/16	ND	ND	ND



- ⊗ = Decommissioned well and/or damaged during construction
- ⊗ = Soil vapor sample location by RGI in 2016 (damaged during construction)
- = Monitoring well by RGI [MW1 to MW7 in 2008, MW8 to MW20 in 2016]
- = Monitoring well by others [BKMW6 to BKMW8, off-site]
- ⊙ = Test probe by RGI in 2016 [P1 to P4]
- ⊙ = Test probe by RGI in 2008 [B1 to B9]
- ⊙ = Test probe by RGI in 2007 [SP-01 to SP-10]
- ⊗ = Stormwater catch basin
- = Retaining wall
- = Site boundary

= Groundwater Analytical Laboratory Result in ug/L
 Gas/DSL/Oil = Gasoline/diesel/oil total petroleum hydrocarbons
 BTEX = Benzene, toluene, ethylbenzene, xylenes
 (H)VOCs = (Halogenated) Volatile organic compounds
 As = Arsenic, Cd = Cadmium, Cr = Chromium Pb = Lead, Hg = Mercury
 Naph = Naphthalenes
 PCE/TCE/VC/cis-1,2-DCE = tetrachloroethene, trichloroethene, vinyl chloride, cis-1,2-dichloroethene
 EDC = 1,2-dichloroethane, 1,1-DCA = 1,1-dichloroethane, EC = Chloroethane
 ND = Not detected above laboratory detection limits
 ---- = Not analyzed
 Bold and yellow highlighted results exceed MTCA Cleanup Level.
 *With silica gel cleanup

—21— = Groundwater contours generated using Surfer Software. Contours based on December 15, 2016 measurements.
 ← = Groundwater flow direction based on December 15, 2016 measurements.

Approximate Scale: 1"=80'
 0 40 80 160

RILEYGROUP
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Sea Mar Community Health Center
 RGI Project Number: 2016-023A
 Address: 9635 Des Moines Memorial Drive South, Seattle, Washington 98108

Figure 2
 Summary of Monitoring Well and Test Probe Groundwater Data
 Date Drawn: 01/2017

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
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www.friedmanandbruya.com

December 22, 2016

Anna Jordan, Project Manager
The Riley Group, Inc.
17522 Bothell Way NE
Bothell, WA 98011

Dear Ms Jordan:

Included are the results from the testing of material submitted on December 15, 2016 from the 2016-023A, F&BI 612242 project. There are 17 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 have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
TRG1222R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on December 15, 2016 by Friedman & Bruya, Inc. from the The Riley Group 2016-023A, F&BI 612242 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>The Riley Group</u>
612242 -01	MW-2
612242 -02	MW-11
612242 -03	MW-12
612242 -04	MW-14
612242 -05	MW-15
612242 -06	MW-17
612242 -07	MW-18
612242 -08	MW-19
612242 -09	MW-20

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/22/16
Date Received: 12/15/16
Project: 2016-023A, F&BI 612242
Date Extracted: 12/19/16
Date Analyzed: 12/19/16

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

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 52-124)
MW-11 612242-02	<1	<1	<1	<3	<100	94
MW-12 612242-03	<1	<1	<1	<3	<100	94
Method Blank 06-2602 MB	<1	<1	<1	<3	<100	92

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/22/16
 Date Received: 12/15/16
 Project: 2016-023A, F&BI 612242
 Date Extracted: 12/16/16
 Date Analyzed: 12/16/16

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
 FOR TOTAL PETROLEUM HYDROCARBONS AS
 DIESEL AND MOTOR OIL
 USING METHOD NWTPH-Dx**
 Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> (% Recovery) (Limit 51-134)
MW-2 612242-01	210 x	<250	84
MW-11 612242-02	140 x	<250	81
MW-12 612242-03 1/1.6	<80	<400	73
MW-17 612242-06	<50	<250	93
MW-18 612242-07	<50	<250	86
MW-19 612242-08	<50	<250	85
MW-20 612242-09	<50	<250	83
Method Blank 06-2620 MB	<50	<250	93

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	MW-17	Client:	The Riley Group
Date Received:	12/15/16	Project:	2016-023A, F&BI 612242
Date Extracted:	12/19/16	Lab ID:	612242-06 1/2
Date Analyzed:	12/19/16	Data File:	121915.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	96	31	160
Benzo(a)anthracene-d12	84	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.06
2-Methylnaphthalene	<0.06
1-Methylnaphthalene	<0.06

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	The Riley Group
Date Received:	Not Applicable	Project:	2016-023A, F&BI 612242
Date Extracted:	12/19/16	Lab ID:	06-2598 mb
Date Analyzed:	12/19/16	Data File:	121905.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	95	31	160
Benzo(a)anthracene-d12	97	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.03
2-Methylnaphthalene	<0.03
1-Methylnaphthalene	<0.03

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-14	Client:	The Riley Group
Date Received:	12/15/16	Project:	2016-023A, F&BI 612242
Date Extracted:	12/16/16	Lab ID:	612242-04
Date Analyzed:	12/16/16	Data File:	121614.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	85	117
Toluene-d8	102	91	108
4-Bromofluorobenzene	99	76	126

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-15	Client:	The Riley Group
Date Received:	12/15/16	Project:	2016-023A, F&BI 612242
Date Extracted:	12/16/16	Lab ID:	612242-05
Date Analyzed:	12/16/16	Data File:	121615.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	85	117
Toluene-d8	102	91	108
4-Bromofluorobenzene	97	76	126

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-17	Client:	The Riley Group
Date Received:	12/15/16	Project:	2016-023A, F&BI 612242
Date Extracted:	12/16/16	Lab ID:	612242-06
Date Analyzed:	12/16/16	Data File:	121616.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	85	117
Toluene-d8	101	91	108
4-Bromofluorobenzene	98	76	126

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-18	Client:	The Riley Group
Date Received:	12/15/16	Project:	2016-023A, F&BI 612242
Date Extracted:	12/16/16	Lab ID:	612242-07
Date Analyzed:	12/16/16	Data File:	121617.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	85	117
Toluene-d8	103	91	108
4-Bromofluorobenzene	101	76	126

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	1.5
Tetrachloroethene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-19	Client:	The Riley Group
Date Received:	12/15/16	Project:	2016-023A, F&BI 612242
Date Extracted:	12/16/16	Lab ID:	612242-08
Date Analyzed:	12/16/16	Data File:	121618.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	85	117
Toluene-d8	101	91	108
4-Bromofluorobenzene	100	76	126

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	2.2
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-20	Client:	The Riley Group
Date Received:	12/15/16	Project:	2016-023A, F&BI 612242
Date Extracted:	12/16/16	Lab ID:	612242-09
Date Analyzed:	12/16/16	Data File:	121619.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	85	117
Toluene-d8	102	91	108
4-Bromofluorobenzene	99	76	126

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	The Riley Group
Date Received:	Not Applicable	Project:	2016-023A, F&BI 612242
Date Extracted:	12/16/16	Lab ID:	06-2585 mb
Date Analyzed:	12/16/16	Data File:	121607.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	85	117
Toluene-d8	101	91	108
4-Bromofluorobenzene	99	76	126

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/22/16

Date Received: 12/15/16

Project: 2016-023A, F&BI 612242

**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: 612242-02 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (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	115	65-118
Toluene	ug/L (ppb)	50	114	72-122
Ethylbenzene	ug/L (ppb)	50	117	73-126
Xylenes	ug/L (ppb)	150	113	74-118
Gasoline	ug/L (ppb)	1,000	102	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/22/16

Date Received: 12/15/16

Project: 2016-023A, F&BI 612242

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS
DIESEL EXTENDED USING METHOD NWTPH-Dx**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	125	104	58-134	18

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/22/16

Date Received: 12/15/16

Project: 2016-023A, F&BI 612242

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR PAHS BY EPA METHOD 8270D SIM**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	1	91	85	67-116	7
2-Methylnaphthalene	ug/L (ppb)	1	92	87	63-122	6
1-Methylnaphthalene	ug/L (ppb)	1	91	87	65-122	4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/22/16

Date Received: 12/15/16

Project: 2016-023A, F&BI 612242

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR VOLATILES BY EPA METHOD 8260C**

Laboratory Code: 612250-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	Acceptance
				Recovery MS	Criteria
Vinyl chloride	ug/L (ppb)	50	<0.2	111	61-139
Chloroethane	ug/L (ppb)	50	<1	110	55-149
1,1-Dichloroethene	ug/L (ppb)	50	<1	101	71-123
Methylene chloride	ug/L (ppb)	50	<5	106	61-126
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	109	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<1	109	79-113
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	108	63-126
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	102	70-119
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	110	75-121
Trichloroethene	ug/L (ppb)	50	<1	105	75-109
Tetrachloroethene	ug/L (ppb)	50	<1	100	72-113

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent	Percent	Acceptance Criteria	RPD (Limit 20)
			Recovery LCS	Recovery LCSD		
Vinyl chloride	ug/L (ppb)	50	112	113	70-119	1
Chloroethane	ug/L (ppb)	50	111	111	66-149	0
1,1-Dichloroethene	ug/L (ppb)	50	102	101	75-119	1
Methylene chloride	ug/L (ppb)	50	104	103	63-132	1
trans-1,2-Dichloroethene	ug/L (ppb)	50	109	109	76-118	0
1,1-Dichloroethane	ug/L (ppb)	50	109	109	80-116	0
cis-1,2-Dichloroethene	ug/L (ppb)	50	109	108	80-112	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	99	98	79-109	1
1,1,1-Trichloroethane	ug/L (ppb)	50	111	108	80-116	3
Trichloroethene	ug/L (ppb)	50	102	102	77-108	0
Tetrachloroethene	ug/L (ppb)	50	101	103	78-109	2

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.

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 the analyte were outside of acceptance criteria. The value reported is an estimate.

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

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

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

j - The analyte concentration is reported below the lowest calibration standard. 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 laboratory control sample(s) percent recovery and/or RPD were 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 analyte 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 with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

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

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

612242

SAMPLE CHAIN OF CUSTODY

ME 12/15/16 (NP) Page # 1 of 103 vwy/

Report To Anna Jordan
 Company RGI
 Address 17522 Bothell Way NE
 City, State, ZIP Bothell, WA 98011
 Phone 425 415-0551 Email ajordan@riley-group.com

SAMPLERS (signature) <i>Amelia Oates</i>		TURNAROUND TIME <input type="checkbox"/> Standard Turnaround <input type="checkbox"/> RUSH Rush charges authorized by: _____	
PROJECT NAME <u>2016-023A</u>		PO #	
REMARKS		INVOICE TO	
SAMPLE DISPOSAL <input type="checkbox"/> Dispose after 30 days <input type="checkbox"/> Archive Samples <input type="checkbox"/> Other _____			

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED										Notes		
						TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	HVOCs	Naphthalenes				
MW-2	01	12/15/16	1110	Water	1		X											
MW-11	02 A-D		1605		4		X	X	X									
MW-12	03 A-D		1615		4		X	X	X									
MW-14	04 A-D		1405		4								X					
MW-15	05 A-D		1340		4								X					
MW-17	06 A-F		1500		6		X						X	X				
MW-18	07 A-E		1300		5		X						X					
MW-19	08		1230		5		X						X					
MW-20	09		1155		5		X						X					

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <i>Amelia Oates</i>	AMELIA OATES	12/15/16 RGI	12/15/16	1745
Received by: <i>Jon Shimazu</i>	Jon Shimazu	12/15/16 FBI	12/15/16	17:50
Relinquished by:				
Received by:			Samples received at <u>2</u> °C	