

TECHNICAL MEMORANDUM

DATE: January 4, 2016
TO: Christopher Maurer
FROM: David Dinkuhn, P.E.
SUBJECT: Former Chevron Property Long Term Monitoring Event 6 (July 2015)
CC: Thomas Knuckey, P.E.
PROJECT NUMBER: 233-1896-107
PROJECT NAME: Former Chevron Property Remediation

FORMER CHEVRON PROPERTY LONG TERM GROUNDWATER MONITORING EVENT 6

This technical memorandum presents a summary of the results of the sixth long-term groundwater monitoring event at the Former Chevron Property located in Bremerton, Washington. Long-term monitoring is being performed under the site's Agreed Order Number DE-12TCPHQ-9509. Sampling was conducted in accordance with the site's Long Term Monitoring Plan (LTGMP; Parametrix 2013). Data from this long-term monitoring event is intended to be used to evaluate groundwater quality trends at the site and confirm the continued occurrence of natural attenuation.

EVENT 6 MONITORING RESULTS

Groundwater samples were collected on July 29th and 30th, 2015 using a peristaltic pump and low flow sampling techniques. Samples were collected from nine designated long-term monitoring wells including: MW-4R, -11, -13R, -20R, -21R, -22R, -25, -26R, and -27. Two monitoring wells, MW-9R and MW-10R, were inaccessible at the time of sampling due to ongoing park construction work at the site. A figure showing well locations (Figure 1) is attached.

Prior to sampling, all wells were purged until measured water quality parameters stabilized according to criteria specified in the LTGMP. Upon stabilization, groundwater samples were collected in appropriate containers. The final set of water quality parameter measurements is provided in Table 1. Wells MW-4R and MW-13R produced very little water and general chemistry, diesel, and lube oil samples were not collected. MW-22R also produced very little water but the full suite of analytical intended for that location was able to be collected. Field sampling forms related to the sample collection are attached.

Groundwater samples were submitted to Onsite Environmental of Redmond, Washington, for chemical analysis of gasoline, diesel, and lube oil along with benzene, toluene, ethyl benzene, and xylenes, and general chemistry parameters. A summary of analytical results is presented in Table 1. An analytical data review memorandum and laboratory report are also attached.

The depth to groundwater was measured in each well on July 29, 2015. Inferred groundwater surface elevation contours were developed from the measurements as shown on Figure 1.

DISCUSSION

Concentration trends versus time for benzene and gasoline are presented graphically in Figures 2 and 3. Wells MW-4R, MW-20R, and MW-21R contained benzene concentrations that exceeded the MTCA A cleanup level. Only well MW-21R exceeded the MTCA A cleanup level for gasoline. Overall concentration trends from historical sampling events through Event 6 appear to be leveling out from an initial downward trend observed during events 1 through 3.

Evidence that anaerobic respiration is continuing to occur in the impacted aquifer is demonstrated by elevated ferrous iron, dissolved manganese, and dissolved methane concentrations with associated highly negative oxidation reduction potential values as compared to concentrations in up-gradient well MW-11.

Diesel and lube oil concentrations were not detected above the MTCA A cleanup level at the site during Event 6.

As noted above, MW-9R and MW-10R were inaccessible at the time of sampling.

REFERENCES

Parametrix. 2013. Former Chevron Property Long-Term Groundwater Monitoring Plan. Prepared for Ecology on behalf of City of Bremerton. July 8.

ATTACHMENTS:

Figure 1 – Long Term Groundwater Monitoring Event 5 Sampling Results – January 2015

Figure 2 – Benzene Results

Figure 3 – Gasoline Results

Table 1 – Groundwater Results Summary

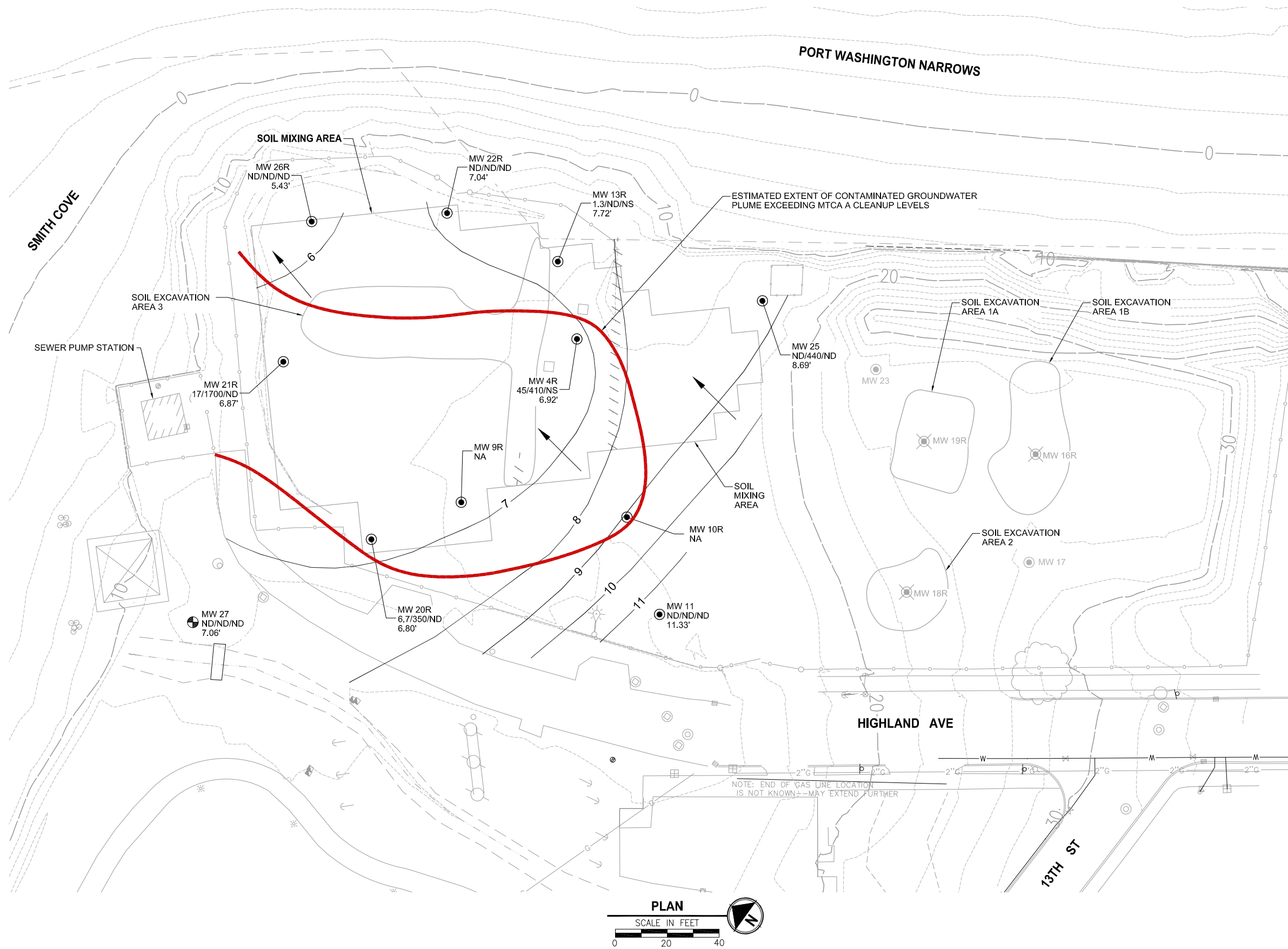
Monitoring Well Logs

Field Sampling Forms

Data Validation Technical Memorandum

Laboratory Report

FILE: BR1896107-F08
DATE: Aug 26, 2015 - 10:31am
PLOTTED BY: rickaron
IMAGES: XREFS: XB-BREM_WTRFRNT-BA-SV-061201 | XBR1896063P04T1301F-BA



- LEGEND**
- EXISTING CHAIN LINK FENCE
 - EXISTING MONITORING WELL
 - SOIL EXCAVATION AREA
 - MW 14 WELL REMOVED DURING INTERIM ACTION
 - MW 19R LONG TERM MONITORING WELL
 - 5.08' GROUNDWATER SURFACE ELEVATION
 - R INDICATES REPLACEMENT WELL
 - ESTIMATED CONTAMINATED GROUNDWATER PLUME EXCEEDING MTCA A CLEANUP LEVELS
 - GROUNDWATER FLOW DIRECTION
 - 6 GROUNDWATER SURFACE ELEVATION CONTOUR
 - 19/1,500/ND GW RESULTS FOR BENZENE GASOLINE/DIESEL RESULTS IN ug/L
 - ND NOT DETECTED
 - NS NOT SAMPLED DUE TO LOW WELL PRODUCTION
 - NA NOT ACCESSIBLE

- GENERAL NOTES:**
- CONTOUR DATUM NAVD 88
 - GROUNDWATER ELEVATION MEASUREMENTS COLLECTED 7/29/15

CLEANUP LEVELS	
MTCA A	ug/L
BENZENE	5
GASOLINE	800
DIESEL	500

REVISIONS			
NO.	DESCRIPTION	DATE	BY

0 1" 2"
TWO INCHES AT FULL SCALE IF NOT SCALE ACCORDINGLY
SCALE
HORIZ. 1"=20' VERT. N/A

FIELD BOOK	CITY OF BREMERTON DEPARTMENT OF PUBLIC WORKS & UTILITIES ENGINEERING DIVISION		
DRAWING NO.	DRAWN BY: JLP DATE 4/15	DESIGN BY: DLD WASH. P.E. # DATE 4/15	CHECKED BY: WASH. P.E. # DATE

FORMER CHEVRON PROPERTY LONG-TERM GROUNDWATER MONITORING EVENT 6 SAMPLING RESULTS - JULY 2015		FIG. NO. 1	PN: 233-1896-107	SHEET 1 OF 1
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Figure 2. Event 6 Benzene Results - Former Chevron Property

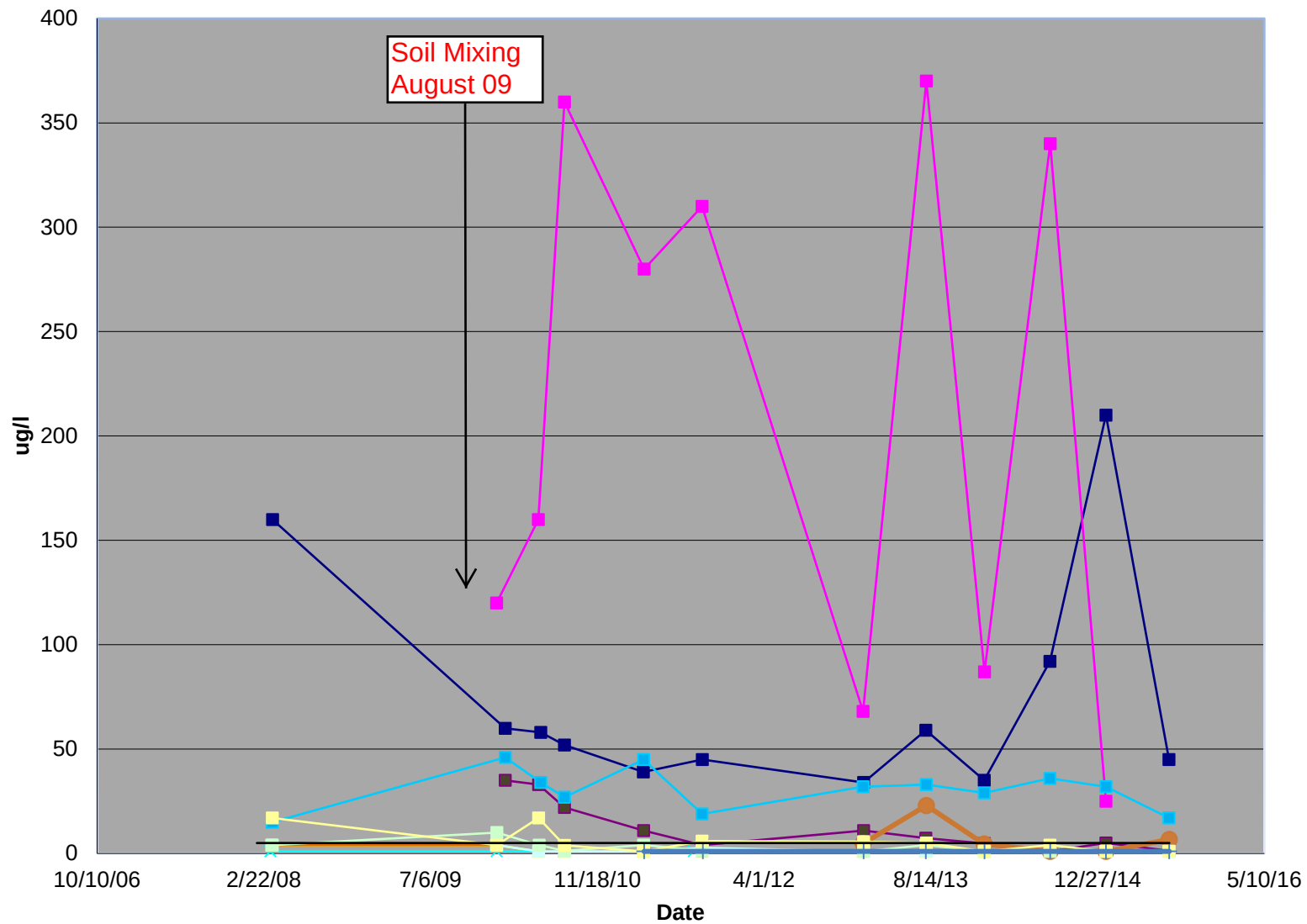


Figure 3. Event 6
Gasoline Results - Former Chevron Property

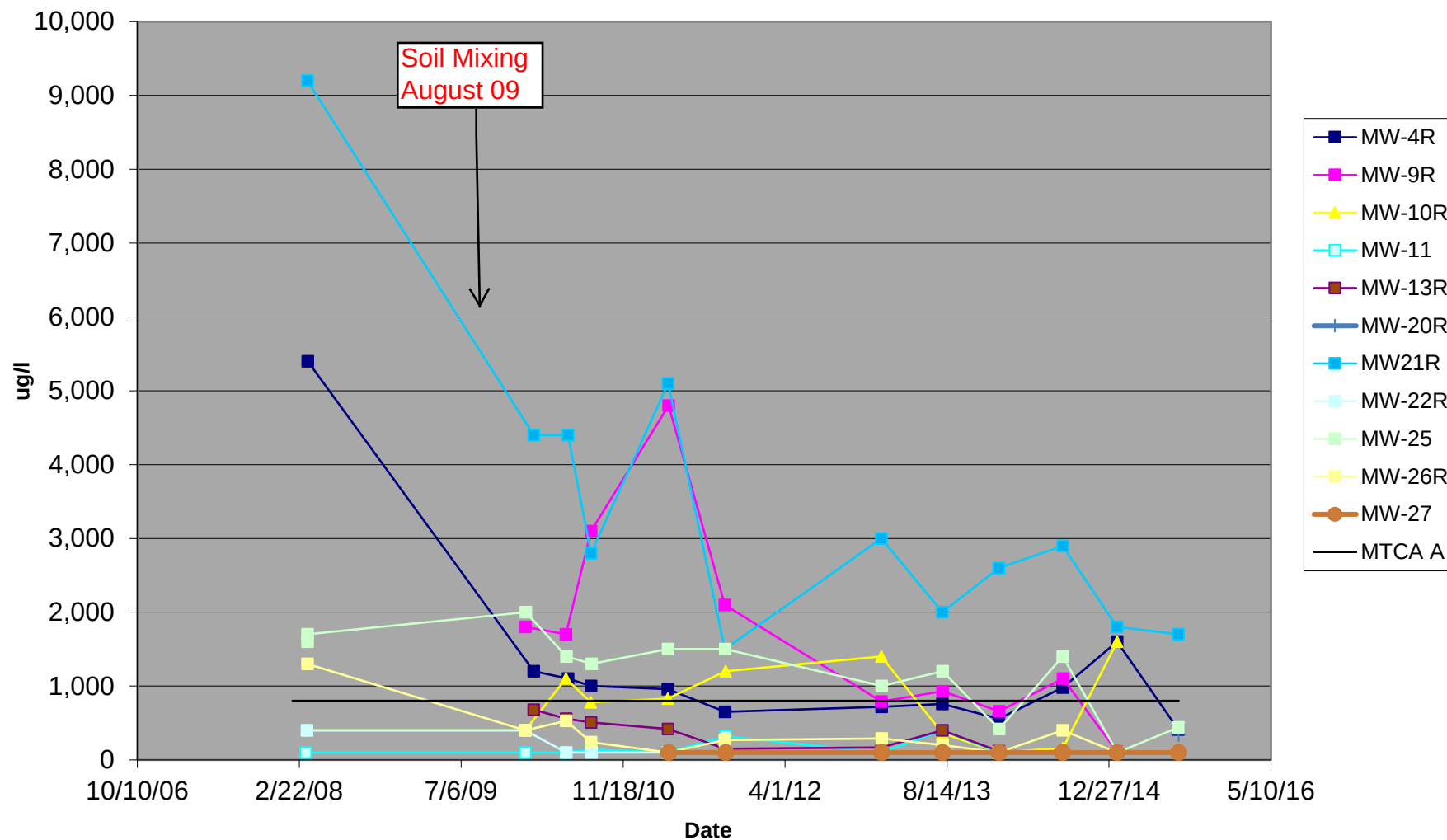


Table 1 Groundwater Results Summary, Long Term Monitoring Event 6 (July 2015)

Monitoring Well No.			MW-04R															MW-09R						
PARAMETERS	Units	Sample Date	3/19/08 ¹	1/21/10	6/1/10	6/1/10*	8/11/10	8/11/10*	4/5/11	4/5/11*	9/29/11	1/24/13	7/30/13	1/21/14	8/6/14	1/21/15	7/29/15	1/20/10	5/25/10	5/25/10*	8/11/10	4/7/11	9/28/11	1/23/13
MTCA A																								
VOLATILE ORGANICS (BTEx)																								
Benzene	ug/L	5	160	60 J	58	--	52	--	39	--	45	34	59	35	92	210	45	120 J	160	170	360	280	310	68
Toluene	ug/L	1,000	10 U	2.0 J	1.0 U	--	1.0 U	--	4.0 U	--	1.0 U	2.1 U	4.0 U	1.8 U	4.0 U	4.0 U	1.6	4 U	3.2	3.6	11	11	13	4
Ethylbenzene	ug/L	700	45	31 J	45	--	40	--	17	--	20	7.9	5.9	3.1	9.0	150	25	89 J	89	97	230	220	150	20
m,p-Xylene	ug/L	1,000	86	15 J	7.6	--	4.7	--	9.4	--	2.1	4.1	9.4	2.5	5.5	7.9	1.8	170 J	120	140	400	300	190	12
o-Xylene	ug/L	1,000	12	1.8 J	1.0 U	--	1.0 U	--	4.0	--	1.0 U	1.5	4.0 U	1.3 U	4.0 U	4.0 U	1.0 U	4 U	3.5	3.9	8.1	11	10	4
TOTAL PETROLEUM HYDROCARBONS																								
Gasoline	ug/L	800	5,400	1,200 J	1,100	--	1,000	--	960	--	650	720	760	560	980	1600	410	1,800 J	1,500	1,700	3,100	4,800	2,100	790
Diesel	mg/L	0.5	27	0.64 M	0.34 U	--	0.62 M	--	0.46	--	0.34 U	0.31 U	0.31 U	0.36 U	0.62	--	--	0.31 U	0.29 U	0.69	0.45 M	0.82	0.33 U	0.26 U
Lube Oil	mg/L	0.5	2.3	0.45 U	0.42 U	--	0.41 U	--	0.42 U	--	0.42 U	0.41 U	0.41 U	0.41 U	1.20	--	--	0.49 U	0.47 U	0.66	0.42 U	0.43 U	0.42 U	0.41 U
METALS																								
Total Lead	ug/L	15	--	8.2	--	--	--	--	--	--	--	--	--	--	--	--	--	80	36 J	74 J	21 J	170	--	1.00 U
Dissolved Lead	ug/L	15	--	1.0 U	--	--	--	--	--	--	--	--	--	--	--	--	--	13	12	14	17	3.0	--	1.00 U
Dissolved Iron	ug/L		--	4,200	--	--	--	--	--	--	--	--	--	--	--	--	--	34,000	--	--	--	--	--	--
Total Ferrous Iron	mg/L		--	--	7.36	--	9.75	--	5.4	--	--	7.35	9.70	9.64	11.50	--	--	--	46.2	42.1	29.2	49.4	--	34.20
Dissolved Manganese	ug/L		--	3,000	4,600	--	4,400	--	3,400	--	--	4,500	6,500	5,500	5,800	--	--	5,000	3,600	3,900	4,200	4,500	--	4,000
PAHs																								
Naphthalene	ug/L		--	1.4	--	--	--	--	1.0 U	1.0 U	--	--	--	--	--	--	--	6.4	--	--	--	--	--	--
2-Methylnaphthalene	ug/L		--	0.20	--	--	--	--	1.0 U	1.0 U	--	--	--	--	--	--	--	2.8	--	--	--	--	--	--
1-Methylnapthalene	ug/L		--	3.2	--	--	--	--	4.7	4.9	--	--	--	--	--	--	--	2.2	--	--	--	--	--	--
Acenaphthylene	ug/L		--	0.23	--	--	--	--	1.0 U	1.0 U	--	--	--	--	--	--	--	0.11 U	--	--	--	--	--	--
Acenaphthene	ug/L		--	1.9	--	--	--	--	3.3	3.4	--	--	--	--	--	--	--	0.18	--	--	--	--	--	--
Flourene	ug/L		--	1.8	--	--	--	--	2.3	2.3	--	--	--	--	--	--	--	0.14	--	--	--	--	--	--
Phenanthrene	ug/L		--	0.15	--	--	--	--	1.0 U	1.0 U	--	--	--	--	--	--	--	0.17	--	--	--	--	--	--
Anthracene	ug/L		--	0.44	--	--	--	--	1.0 U	1.0 U	--	--	--	--	--	--	--	0.11 U	--	--	--	--	--	--
Fluoranthene	ug/L		--	0.39	--	--	--	--	1.0 U	1.0 U	--	--	--	--	--	--	--	0.11 U	--	--	--	--	--	--
Pyrene	ug/L		--	0.26	--	--	--	--	1.0 U	1.0 U	--	--	--	--	--	--	--	0.11 U	--	--	--	--	--	--
Benzo(a)anthracene	ug/L		--	0.047	0.032	0.03	0.050 U	0.042	0.10 U	0.10 U	--	--	--	--	--	--	--	0.011 U	--	--	--	--	--	--
Chrysene	ug/L		--	0.033	0.010 U	0.010 U	0.050 U	0.023	0.10 U	0.10 U	--	--	--	--	--	--	--	0.011 U	--	--	--	--	--	--
Benzo(b)fluoranthene	ug/L		--	0.013	0.010 U	0.010 U	0.010 U	0.010 U	0.10 U	0.10 U	--	--	--	--	--	--	--	0.011 U	--	--	--	--	--	--
Benzo(k)fluoranthene	ug/L		--	0.028	0.010 U	0.010 U	0.010 U	0.010 U	0.10 U	0.10 U	--	--	--	--	--	--	--	0.011 U	--	--	--	--	--	--
Benzo(a)pyrene	ug/L	0.1	--	0.020	0.010 U	0.010 U	0.010 U	0.010 U	0.10 U	0.10 U	--	--	--	--	--	--	--	0.011 U	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	ug/L		--	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.10 U	0.10 U	--	--	--	--	--	--	--	0.011 U	--	--	--	--	--	--
Dibenz(a,h)anthracene	ug/L		--	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.10 U	0.10 U	--	--	--	--	--	--	--	0.011 U	--	--	--	--	--	--
Benzo[g,h,i]perylene	ug/L		--	0.010 U	--	--	--	--	0.10 U	0.10 U	--	--	--	--	--	--	--	0.011 U	--	--	--	--	--	--
GENERAL CHEMISTRY																								
Alkalinity	mg/L		--	190	1,900	--	2,100	--	2,300	--	--	7100	3300	3300	3300	--	--	700	720	730	800	730	--	450
Nitrate (as Nitrogen)	mg/L		--	0.050 U	0.050 U	--	0.050 U	--	0.050 U	--	--	0.05 U	0.05 U	0.04 U	0.05 U	--	--	0.050 U	0.050 U	0.050 U	0.14	0.050 U	--	0.076
Sulfate	mg/L		--	250	150	--	120	--	110	--	--	5 U	5 U	10 U	5 U	--	--	30	7.5	7.4	5.0 U	5.0 U	--	25.00 U
Chloride	mg/L		--	290	250	--	250	--	230	--	--	240	520	260	270	--	--	77	120	120	78	91	--	32
Dissolved Methane	ug/L		--	710	590	--	670	--	740	--	--	690	540	600	776	--	1200	2,100	8,600	7,800	6,600	9,900	--	11000
BOD5	mg/L		--	8.97	8.1	--	8.6	--	--	--	--	--	--	--	--	--	--	5.46	3.0	4.3	12.3	--	--	--
FIELD PARAMETERS																								
Turbidity	Neth. Turbidity Units		--	333	5.3	5.3	106	106	9.0	9.0	116.0	NM	0.6	1.1	6.6	--	--	146	57.9	57.9	>1000	>1000	106.0	NM
pH	--		--	6.63	6.90	6.90	7.01	7.01	7.09	7.09	7.11	7.07	7.24	6.96	6.56	--	--	6.36	6.77	6.77	6.94	6.78	7.05	6.87
Specific Conductance	Millisiemens/cm		--	3.50	3.42	3.42	32.6	32.6	35.1	35.1	5.48	5.41	5.43	5.73	5.68	--	--	1.52	1.42	1.42	2.65	1.81	1.91	1.47
Dissolved Oxygen	mg/L		--	4.91	4.55	4.55	0.0	0.0	4.02	4.02	0.06	0.00	1.01	0.43	3.56	--	--	9.65	0.96	0.96	0.0	0.40	6.68	3.92
Oxdat. Red. Potential	Millivolts		--	-136	-115	-115	-161	-161	-149	-149	-163	-247	-123	-140	-69.5	--	--	-124	-136.8	-136.8	-169	-134	-152	-211

Notes:

- 1 Sample collected from replaced well.
- * Duplicate sample.
- J = Reported concentration is an estimate.
- mg/L= Milligrams per liter.
- NM = Not measured due to equipment malfunction.
- µg/L = Micrograms per liter.
- U = Analyte not detected above practical quantitation limit given.
- U1 = The practical quantitation limit is elevated due to interferences present in the sample.
- Exceeds MTCA A cleanup level.

Table 1 Groundwater Results Summary, Long Term Monitoring Event 6 (July 2015)

Monitoring Well No.			MW-09R				MW-10R										MW-11						
PARAMETERS	Units	Sample Date	7/31/13	1/22/14	8/7/14	1/20/15	3/17/08 ¹	1/20/10	5/25/10	8/10/10	4/5/11	9/30/11	1/23/13	7/30/13	1/22/14	8/7/14	1/21/15	3/13/08	1/20/10	5/25/10	8/10/10	8/10/10*	4/5/11
MTCA A																							
VOLATILE ORGANICS (BTEX)																							
Benzene	ug/L	5	370	87	340	25	4.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1,000	7.4	3.4	6.50	1.00 U	4.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.2	1.7	1.7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	700	25	13	19.00	2.80	4.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m,p-Xylene	ug/L	1,000	6.9	6.4	8.20	1.70	6.8	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
o-Xylene	ug/L	1,000	2.5	2.4	4.00 U	1.00 U	4.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
TOTAL PETROLEUM HYDROCARBONS																							
Gasoline	ug/L	800	930	660	1,100	110	400 U	400 U	1,100	780	830	1200	1400	360	100 U	160	1600	100 U	100 U	100 U	140	130	100 U
Diesel	mg/L	0.5	0.54 U	0.30 U	0.26 U	0.67	160	0.27 U	0.61 U	0.42 U	0.45 U	0.81 U	0.76 U	--	0.26 U	0.32	0.76 U	0.27	0.17 U	0.26 U	0.25 U	0.25 U	0.26 U
Lube Oil	mg/L	0.5	0.54	0.54 U	0.41 U	0.44	8.8 U	0.44 U	0.42 U	0.45 U	0.43 U	0.43 U	0.41 U	--	0.41 U	0.58	0.41 U	0.40 U	0.27 U	0.42 U	0.41 U	0.41 U	0.42 U
METALS																							
Total Lead	ug/L	15	3.90	--	--	1.1 U	--	3.8	--	--	--	--	--	--	--	--	--	--	4.7	--	--	--	--
Dissolved Lead	ug/L	15	1.10 U	--	--	1 U	--	2.2	--	--	--	--	--	--	--	--	--	--	1.4	--	--	--	--
Dissolved Iron	ug/L		--	--	--	--	--	6,400	--	--	--	--	--	--	--	--	--	--	270	--	--	--	--
Total Ferrous Iron	mg/L		36.20	--	--	39.5	--	--	25.2	34.4	12.4	--	40.80	--	2.14	30.4	21.6	--	--	19.0	30.4	30.0	2.66
Dissolved Manganese	ug/L		4,500	--	--	4400	--	1,100	1,400	2,000	1,500	--	3,700	--	2000	3400	1800	--	300	1,400	2,600	2,600	400
PAHs																							
Naphthalene	ug/L		--	--	--	--	--	0.14	--	--	--	--	--	--	--	--	--	--	0.13 U	--	--	--	--
2-Methylnaphthalene	ug/L		--	--	--	--	--	0.12 U	--	--	--	--	--	--	--	--	--	--	0.13 U	--	--	--	--
1-Methylnappthalene	ug/L		--	--	--	--	--	21	--	--	--	--	--	--	--	--	--	--	0.13 U	--	--	--	--
Acenaphthylene	ug/L		--	--	--	--	--	0.12 U	--	--	--	--	--	--	--	--	--	--	0.13 U	--	--	--	--
Acenaphthene	ug/L		--	--	--	--	--	0.23	--	--	--	--	--	--	--	--	--	--	0.13 U	--	--	--	--
Flourene	ug/L		--	--	--	--	--	0.32	--	--	--	--	--	--	--	--	--	--	0.13 U	--	--	--	--
Phenanthrene	ug/L		--	--	--	--	--	0.12 U	--	--	--	--	--	--	--	--	--	--	0.13 U	--	--	--	--
Anthracene	ug/L		--	--	--	--	--	0.12 U	--	--	--	--	--	--	--	--	--	--	0.13 U	--	--	--	--
Fluoranthene	ug/L		--	--	--	--	--	0.12 U	--	--	--	--	--	--	--	--	--	--	0.13 U	--	--	--	--
Pyrene	ug/L		--	--	--	--	--	0.12 U	--	--	--	--	--	--	--	--	--	--	0.13 U	--	--	--	--
Benzo(a)anthracene	ug/L		--	--	--	--	--	0.014	--	--	--	--	--	--	--	--	--	--	0.013 U	--	--	--	--
Chrysene	ug/L		--	--	--	--	--	0.012 U	--	--	--	--	--	--	--	--	--	--	0.013 U	--	--	--	--
Benzo(b)fluoranthene	ug/L		--	--	--	--	--	0.012 U	--	--	--	--	--	--	--	--	--	--	0.013 U	--	--	--	--
Benzo(k)fluoranthene	ug/L		--	--	--	--	--	0.012 U	--	--	--	--	--	--	--	--	--	--	0.013 U	--	--	--	--
Benzo(a)pyrene	ug/L	0.1	--	--	--	--	--	0.012 U	--	--	--	--	--	--	--	--	--	--	0.013 U	--	--	--	--
Indeno(1,2,3-cd)pyrene	ug/L		--	--	--	--	--	0.012 U	--	--	--	--	--	--	--	--	--	--	0.013 U	--	--	--	--
Dibenz(a,h)anthracene	ug/L		--	--	--	--	--	0.012 U	--	--	--	--	--	--	--	--	--	--	0.013 U	--	--	--	--
Benzo[g,h,i]perylene	ug/L		--	--	--	--	--	0.012 U	--	--	--	--	--	--	--	--	--	--	0.013 U	--	--	--	--
GENERAL CHEMISTRY																							
Alkalinity	mg/L		85	740	--	--	220	190	200	210	230	--	250	--	280	290	--	170	52	210	120	110	70
Nitrate (as Nitrogen)	mg/L		0.05 U	0.05 U	--	0.087	0.050 U	0.77	0.094	0.050 U	0.050 U	--	0.05 U	--	0.58	0.50 U	0.24	0.050 U	0.050 U	0.070	0.086	0.1	0.050 U
Sulfate	mg/L		5.00 U	5.00 U	--	10 U	5.0 U	10	10 U	5.0 U	5.0 U	--	25.00 U	--	43	5.00 U	10 U	5.0 U	8.8	10 U	25 U	25 U	5.0 U
Chloride	mg/L		35	31	--	32	2.5	10	10	14	6.8	--	14.00	--	16	7.8	8.8	5.2	3.1	7.9	8.8	9.4	6.0
Dissolved Methane	ug/L		7100	11000	--	7200	--	170	510	260	590	--	2900	--	37	279	420	--	15	1,200	870	730	310
BOD5	mg/L		--	--	--	--	--	3.06	2.0	12 U	--	--	--	--	--	--	--	--	3.36	3.1	12 U	12 U	--
FIELD PARAMETERS																							
Turbidity	Neth. Turbidity Units		60.0	5.1	--	6.20	208	54.7	3.0	235	2.7	6.5	NM	NM	0.1	3.8	5.9	12.6	165	1.5	32.9	32.9	3.4
pH	--		7.18	6.57	--	8.65	6.38	6.00	6.32	6.05	6.50	6.52	6.58	NM	6.4	6.3	NM	6.20	5.27	6.20	6.27	6.27	6.17
Specific Conductance	Millisiemens/cm		1.77	1.30	--	1.30	53.4	35.9	51.2	90	90	81.2	0.8	NM	0.68	0.605	0.44	63.5	10.3	32.0	90	90	64.3
Dissolved Oxygen	mg/L		0.97	1.73	--	1.40	0.0	5.38	6.31	2.38	2.20	6.16	0.20	NM	0.72	1.9	0.34	0.0	5.87	0.90	0.0	0.0	2.67
Oxdat. Red. Potential	Millivolts		-139	-83	--	-132.00	-35	-64	-19.0	-79	-110	-96	-194	NM	-58.2	-32.6	-168.7	62	169	-49.3	-110	-110	-31

Notes:

- 1 Sample collected from replaced well.
- * Duplicate sample.
- J = Reported concentration is an estimate.
- mg/L= Milligrams per liter.
- NM = Not measured due to equipment malfunction.
- µg/L = Micrograms per liter.
- U = Analyte not detected above practical quantitation limit given.
- U1 = The practical quantitation limit is elevated due to interferences present in the sample.
- Exceeds MTCA A cleanup level.

Table 1 Groundwater Results Summary, Long Term Monitoring Event 6 (July 2015)

Monitoring Well No.			MW-11									MW-13R											
PARAMETERS	Units	Sample Date	4/5/11*	9/30/11	1/23/13	1/23/2013*	7/30/13	1/22/14	8/7/14	1/21/15	7/30/15	2/15/10	5/26/10	8/11/10	4/6/11	9/29/11	1/24/13	7/30/13	7/30/13	1/21/14	8/6/14	1/21/15	7/29/15
MTCA A																							
VOLATILE ORGANICS (BTEX)																							
Benzene	ug/L	5	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	35 J	33	22	11	4	11	11	7.4	4.8	1 U	5	1.3
Toluene	ug/L	1,000	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	1.3	1.0 U	1.0 U	1.0 U	1 U	1 U	4 U	1 U	1 U	1 U	1 U
Ethylbenzene	ug/L	700	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	13 J	15	10	2.6	1.0 U	2	2	8.8	1	1	1 U	1 U
m,p-Xylene	ug/L	1,000	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	1.4	1.7	1.0 U	1.0 U	1 U	1 U	4 U	1 U	1 U	1 U	1 U
o-Xylene	ug/L	1,000	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1 U	1 U	4 U	1 U	1 U	1 U	1 U
TOTAL PETROLEUM HYDROCARBONS																							
Gasoline	ug/L	800	100 U	320	100 U	100 U	400 U	100 U	100 U	100 U	100 U	680 J	560	510	420	150	170	170	400 U	120 U	100 U	100 U	100 U
Diesel	mg/L	0.5	0.26 U	0.37	0.26 U	0.26 U	0.27 U	0.26 U	0.26 U	0.26 U	0.26 U	0.49 U1	0.43	0.39 U	0.41	0.26 U	0.26 U	0.26 U	0.35	0.27 U	0.27 U	--	--
Lube Oil	mg/L	0.5	0.42 U	0.42 U	0.41 U	0.41 U	0.44 U	0.41 U	0.41 U	0.41 U	0.42 U	0.70 J	0.45 U	0.43 U	0.42 U	0.42 U	0.42 U	0.42 U	0.64	0.43 U	0.43 U	--	--
METALS																							
Total Lead	ug/L	15	--	--	--	--	--	--	--	--	--	5.2	--	--	--	--	--	--	--	--	--	--	--
Dissolved Lead	ug/L	15	--	--	--	--	--	--	--	--	--	1.1	--	--	--	--	--	--	--	--	--	--	--
Dissolved Iron	ug/L		--	--	--	--	--	--	--	--	--	3,600	--	--	--	--	--	--	--	--	--	--	--
Total Ferrous Iron	mg/L		2.74	--	0.67	0.88	35.90	6.88	36.80	0.35	1.16	--	15.2	9.31	7.94	--	4.51	4.51	--	0.286	--	--	--
Dissolved Manganese	ug/L		400	--	370	350	3800	1100	3700	230	320	1,500	1,300	2,000	1,800	--	1,700	1,700	--	--	--	--	--
PAHs																							
Naphthalene	ug/L		--	--	--	--	--	--	--	--	--	15	--	--	0.35	--	--	--	--	--	--	--	--
2-Methylnaphthalene	ug/L		--	--	--	--	--	--	--	--	--	1.1	--	--	0.10 U	--	--	--	--	--	--	--	--
1-Methylnapththalene	ug/L		--	--	--	--	--	--	--	--	--	4.7	--	--	0.38	--	--	--	--	--	--	--	--
Acenaphthylene	ug/L		--	--	--	--	--	--	--	--	--	1.1	--	--	0.40	--	--	--	--	--	--	--	--
Acenaphthene	ug/L		--	--	--	--	--	--	--	--	--	48	--	--	22	--	--	--	--	--	--	82	--
Flourene	ug/L		--	--	--	--	--	--	--	--	--	21	--	--	7.6	--	--	--	--	--	--	--	--
Phenanthrene	ug/L		--	--	--	--	--	--	--	--	--	3.2	--	--	0.70	--	--	--	--	--	--	--	--
Anthracene	ug/L		--	--	--	--	--	--	--	--	--	1.9	--	--	1.2	--	--	--	--	--	--	--	--
Fluoranthene	ug/L		--	--	--	--	--	--	--	--	--	1.5	--	--	1.2	--	--	--	--	--	--	--	--
Pyrene	ug/L		--	--	--	--	--	--	--	--	--	0.91	--	--	0.58	--	--	--	--	--	--	--	--
Benzo(a)anthracene	ug/L		--	--	--	--	--	--	--	--	--	0.15	0.057	0.061	0.058	--	--	--	--	--	--	--	--
Chrysene	ug/L		--	--	--	--	--	--	--	--	--	0.15	0.040	0.050 U	0.044	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	ug/L		--	--	--	--	--	--	--	--	--	0.093	0.010 U	0.010 U	0.018	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	ug/L		--	--	--	--	--	--	--	--	--	0.083	0.010 U	0.010 U	0.014	--	--	--	--	--	--	--	--
Benzo(a)pyrene	ug/L	0.1	--	--	--	--	--	--	--	--	--	0.092	0.010 U	0.010 U	0.017	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	ug/L		--	--	--	--	--	--	--	--	--	0.041	0.010 U	0.010 U	0.010 U	--	--	--	--	--	--	--	--
Dibenz(a,h)anthracene	ug/L		--	--	--	--	--	--	--	--	--	0.013	0.010 U	0.010 U	0.010 U	--	--	--	--	--	--	--	--
Benzo[g,h,i]perylene	ug/L		--	--	--	--	--	--	--	--	--	0.053	--	--	0.010 U	--	--	--	--	--	--	--	--
GENERAL CHEMISTRY																							
Alkalinity	mg/L		66	--	130	180	160	190	280	--	170	1,300	1,400	1,600	1,500	--	1900	1900	--	--	--	--	--
Nitrate (as Nitrogen)	mg/L		0.050 U	--	2.40	1.60	0.05 U	30.00	0.05	2.5	4.5	0.050 U	0.050 U	0.050 U	0.050 U	--	0.05 U	0.05 U	--	--	--	--	--
Sulfate	mg/L		5.0 U	--	56	47	5 U	45	5 U	24	24	460	460	560	280	--	160.00	160.00	--	--	--	--	--
Chloride	mg/L		5.5	--	2.7	3.6	9.7	25.0	10.0	4.2	6.7	710	670	750	420	--	400.00	400.00	--	--	--	--	--
Dissolved Methane	ug/L		340	220	53	68	390	190	805	220	220	280	580	680	290	--	10	10	--	220	--	82	44
BOD5	mg/L		--	--	--	--	--	--	--	--	--	4.47	2.2	5.1	--	--	--	--	--	--	--	--	--
FIELD PARAMETERS																							
Turbidity	Neth. Turbidity Units		3.4	21.1	NM	--	5.80	13.20	14.40	11.00	1.13	366	275.3	106	>1000	170.0	NM	NM	11.2	10.4	--	35.20	--
pH	--		6.17	6.41	6.19	--	6.72	6.15	6.07	8.30	7.17	6.96	6.81	6.89	6.99	7.42	7.20	7.20	7.31	7.01	--	NM	--
Specific Conductance	Millisiemens/cm		64.3	89.0	0.4	--	0.61	0.78	0.65	0.35	0.38	57.3	4.53	55.2	438	5.99	4.85	4.85	5.82	5.24	--	3.19	--
Dissolved Oxygen	mg/L		2.67	0.00	0.91	--	0.59	0.71	0.27	0.46	0.55	7.56	3.07	0.0	4.82	7.70	7.68	7.68	5.34	3.29	--	2.56	--
Oxdat. Red. Potential	Millivolts		-31	-106	-221	--	-98	36.4	-27	61	46	-13	-96.3	-146	-103	-133	151	151	151	80	--	-40.70	--

Notes:

- 1 Sample collected from replaced well.
- * Duplicate sample.
- J = Reported concentration is an estimate.
- mg/L= Milligrams per liter.
- NM = Not measured due to equipment malfunction.
- µg/L = Micrograms per liter.
- U = Analyte not detected above practical quantitation limit given.
- U1 = The practical quantitation limit is elevated due to interferences present in the sample.
- Exceeds MTCA A cleanup level.

Table 1 Groundwater Results Summary, Long Term Monitoring Event 6 (July 2015)

Monitoring Well No.			MW-20R							MW-21R												
PARAMETERS	Units	Sample Date	1/23/13	7/31/13	1/21/14*	1/21/14	8/7/14	1/20/15	7/30/15	3/18/08 ¹	2/15/10	6/1/10	8/11/10	4/6/11	4/6/11*	9/28/11	1/23/13	7/31/13	7/31/13*	1/21/14	8/6/14	8/6/2014*
MTCA A																						
VOLATILE ORGANICS (BTEX)																						
Benzene	ug/L	5	4.8	23	4.3	4.5	1.0 U	1.0 U	6.7	15	46 J	34	27	45	--	19	32	39	33	29	33	36
Toluene	ug/L	1,000	1 U	4 U	1 U	1 U	1 U	1 U	1 U	91	5.0 J	2.9	1.7	6.7	--	1.0 U	4.5	7.3	6.7	9.1	11.0	11.0
Ethylbenzene	ug/L	700	3	40	4.9	5	1 U	1 U	16	620	230 J	240	120	340	--	34	160	98	82	95	58	58
m,p-Xylene	ug/L	1,000	1 U	4 U	1 U	1 U	1 U	1 U	1 U	910	190 J	210	100	290	--	21	85	59	48	80	51	50
o-Xylene	ug/L	1,000	1 U	4 U	1 U	1 U	1 U	1 U	1 U	110	8.9 J	2.3	1.9	4.0 U	--	1.0 U	2.3	4.0 U	4.0 U	4.1	5.2	5.2
TOTAL PETROLEUM HYDROCARBONS																						
Gasoline	ug/L	800	260	790	280	290	100 U	100 U	350	9,200	4,400 J	4,400	2,800	5,100	--	1500	3000	2300	2000	2600	2700	2900
Diesel	mg/L	0.5	0.26 U	0.27 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	1.7	0.89 U1	0.79 U	0.87	0.68 U	--	0.42 U	0.47 U	0.59 U	0.65 U	0.77 U	0.67 U	0.76 U
Lube Oil	mg/L	0.5	0.42 U	0.43 U	0.41 U	0.41 U	0.42 U	0.42 U	0.41 U	0.40 U	0.46 U	0.42 U	0.41 U	0.42 U	--	0.42 U	0.41 U	0.43 U	0.42 U	0.41 U	0.43 U	0.42 U
METALS																						
Total Lead	ug/L	15	--	--	--	--	--	--	--	10	15	2.8 J	10 J	1.1	1.1 U	--	--	--	--	--	--	--
Dissolved Lead	ug/L	15	--	--	--	--	--	--	--	8.9	2.3	1.4	1.4	1.0 U	1.0 U	--	--	--	--	--	--	--
Dissolved Iron	ug/L		--	--	--	--	--	--	--	--	18,000	--	--	--	--	--	--	--	--	--	--	--
Total Ferrous Iron	mg/L		26.2	29.2	0.088	0.078	33.2	2.4	31.2	--	--	16.2	17.9	10.1	--	--	6.45	7.10	--	7.42	8.18	7.62
Dissolved Manganese	ug/L		1,900	2,600	390	390	2,500	740	1,900	--	4,100	4,500	3,500	4,200	--	--	2,800	3,400	--	3300	3700	3700
PAHs																						
Naphthalene	ug/L		--	--	--	--	--	--	--	18	18	--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	ug/L		--	--	--	--	--	--	--	32	7.3	--	--	--	--	--	--	--	--	--	--	--
1-Methylnapthalene	ug/L		--	--	--	--	--	--	--	20	18	--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	ug/L		--	--	--	--	--	--	--	0.099	1.1 U	--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	ug/L		--	--	--	--	--	--	--	1.1	1.3	--	--	--	--	--	--	--	--	--	--	--
Flourene	ug/L		--	--	--	--	--	--	--	0.96	0.61	--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	ug/L		--	--	--	--	--	--	--	0.65	0.44	--	--	--	--	--	--	--	--	--	--	--
Anthracene	ug/L		--	--	--	--	--	--	--	0.095 U	0.26	--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	ug/L		--	--	--	--	--	--	--	0.11	0.12	--	--	--	--	--	--	--	--	--	--	--
Pyrene	ug/L		--	--	--	--	--	--	--	0.095 U	0.11 U	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	ug/L		--	--	--	--	--	--	--	0.012	0.011 U	--	--	--	--	--	--	--	--	--	--	--
Chrysene	ug/L		--	--	--	--	--	--	--	0.011	0.011 U	--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	ug/L		--	--	--	--	--	--	--	0.010	0.011 U	--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	ug/L		--	--	--	--	--	--	--	0.011	0.011 U	--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	ug/L	0.1	--	--	--	--	--	--	--	0.012	0.011 U	--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	ug/L		--	--	--	--	--	--	--	0.0099	0.011 U	--	--	--	--	--	--	--	--	--	--	--
Dibenz(a,h)anthracene	ug/L		--	--	--	--	--	--	--	0.0095 U	0.011 U	--	--	--	--	--	--	--	--	--	--	--
Benzo[g,h,i]perylene	ug/L		--	--	--	--	--	--	--	0.013	0.011 U	--	--	--	--	--	--	--	--	--	--	--
GENERAL CHEMISTRY																						
Alkalinity	mg/L		220	270	250	270	300	--	350	150	140	1,400	1,500	2,000	2000	--	1700	1800	--	2000	1800	1900
Nitrate (as Nitrogen)	mg/L		0.05 U	0.05 U	6.40	6.30	0.05 U	3.2	0.06	0.050 U	0.050 U	0.050 U	0.057	0.27	--	--	0.05 U	0.05 U	--	0.062	0.05 U	0.05 U
Sulfate	mg/L		25 U	10 U	43	38	19	14	25 U	5.0 U	230	170	120	110	--	--	5.0 U	5.0 U	--	5.0 U	5.0 U	5.0 U
Chloride	mg/L		24	28	43	42	25	9.1	15	28	140	120	110	100	--	--	74	120	--	100	150	140
Dissolved Methane	ug/L		540	2,000	930	840	1,650	250	2,200	--	5,700	4,200	4,800	3,200	--	--	1300	2200	--	4200	5130	6190
BOD5	mg/L		--	--	--	--	--	--	--	--	17	8.4	16.2	--	--	--	--	--	--	--	--	--
FIELD PARAMETERS																						
Turbidity	Neth. Turbidity Units		NM	0	--	0.1	6.1	8.5	10.2	168	303	8.9	384	52.2	52.2	646.0	NM	NM	5.6	5.7	6.3	--
pH	--		6.67	6.62	--	5.98	6.11	8.16	7.83	6.39	6.56	6.83	7.00	7.06	7.06	7.06	7.08	7.08	7.20	6.84	6.83	--
Specific Conductance	Millisiemens/cm		0.64	0.70	--	0.724	0.72	0.46	0.64	44.4	33.3	2.50	4.47	430	430	3.33	3.22	3.22	3.09	3.60	3.27	--
Dissolved Oxygen	mg/L		0.00	3.79	--	0.56	0.25	1.48	0.44	0.0	0.00	4.92	0.0	1.80	1.80	0.00	0.70	0.70	0.71	0.36	4.72	--
Oxdat. Red. Potential	Millivolts		-243	-79	--	166	-30.1	72	-57.4	15	-107	-140.0	-162	-160	-160	-195	-244	-244	-117	-32	-16	--

Notes:

- 1 Sample collected from replaced well.
- * Duplicate sample.
- J = Reported concentration is an estimate.
- mg/L= Milligrams per liter.
- NM = Not measured due to equipment malfunction.
- µg/L = Micrograms per liter.
- U = Analyte not detected above practical quantitation limit given.
- U1 = The practical quantitation limit is elevated due to interferences present in the sample.
- Exceeds MTCA A cleanup level.

Table 1 Groundwater Results Summary, Long Term Monitoring Event 6 (July 2015)

Monitoring Well No.			MW-21R				MW-22R											MW-25						
PARAMETERS	Units	Sample Date	1/21/15	7/29/15	7/29/15 *	3/17/08 ¹	1/20/10	5/26/10	8/12/10	4/6/11	9/29/11	1/24/13	7/31/13	1/21/14	8/6/14	1/21/15	7/29/15	3/18/08	3/18/08	1/21/10	5/27/10	8/12/10	4/6/11	9/29/11
MTCA A																								
VOLATILE ORGANICS (BTEX)																								
Benzene	ug/L	5	32	16	17	4.0 U	4.0 U	1.0 U	1.0 U	1.0 U	2.7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	4.0	10 J	4.0 U	1.3	4.0 U	1.4
Toluene	ug/L	1,000	10.0	7.1	7.2	4.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	4.0	7.2 J	4.0 U	2.1	4.0 U	2.5
Ethylbenzene	ug/L	700	49	26	26	4.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	56	56	74 J	4.0 U	6.1	5.3	11
m,p-Xylene	ug/L	1,000	41	24	24	4.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.2	4.1	140 J	4.0 U	5.0 U	8.4	1.2
o-Xylene	ug/L	1,000	4.0 U	2.0	1.9	4.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	4.0	200 U1	4.0 U	1.0 U	4.0 U	1.0 U
TOTAL PETROLEUM HYDROCARBONS																								
Gasoline	ug/L	800	1800	1600	1700	400 U	400 U	100 U	100 U	100 U	120	100 U	100 U	100 U	100 U	100 U	100 U	1,600	1,700	2,000 U	1,400	1,300	1,500	1500
Diesel	mg/L	0.5	0.61 U	0.45 U	0.45 U	0.26 U	0.26 U	0.27 U	0.25 U	0.27 U	0.26 U	0.26 U	0.27 U	0.26 U	0.26 U	0.26 U	0.26 U	1.2	1	0.49	0.92	2	7.0	1.3
Lube Oil	mg/L	0.5	0.42 U	0.41 U	0.41 U	0.41 U	0.41 U	0.43 U	0.41 U	0.43 U	0.41 U	0.41 U	0.44 U	0.41 U	0.42 U	0.41 U	0.41 U	0.48 U	0.46 U	0.42 U	0.42 U	0.41 U	0.42 U	0.41 U
METALS																								
Total Lead	ug/L	15	--	--	--	1.1 U	1.3	--	--	--	--	--	--	--	--	--	--	1.2	1.3	1.1 U	--	--	--	--
Dissolved Lead	ug/L	15	--	--	--	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--	1.0 U	1.0 U	1.0 U	--	--	--	--
Dissolved Iron	ug/L		--	--	--	--	220	--	--	--	--	--	--	--	--	--	--	--	--	2,000	--	--	--	--
Total Ferrous Iron	mg/L		8.42	9.66	10.3	--	--	0.295	1.29	0.043	--	0.06	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	--	--	--	0.352	3.78	1.39	--
Dissolved Manganese	ug/L		2600	2300	2400	--	1,400	890	3,200	840	--	700	770	400	510	160	360	--	--	120	220	130	170	--
PAHs																								
Naphthalene	ug/L		--	--	--	0.098 U	0.10 U	--	--	--	--	--	--	--	--	--	--	1.2	1.4	0.27	--	--	--	--
2-Methylnaphthalene	ug/L		--	--	--	0.098 U	0.10 U	--	--	--	--	--	--	--	--	--	--	0.11 U	0.11 U	0.10 U	--	--	--	--
1-Methylnapthalene	ug/L		--	--	--	0.098 U	0.10 U	--	--	--	--	--	--	--	--	--	--	22	25	0.67	--	--	--	--
Acenaphthylene	ug/L		--	--	--	0.098 U	0.10 U	--	--	--	--	--	--	--	--	--	--	0.17	0.17	0.10 U	--	--	--	--
Acenaphthene	ug/L		--	--	--	0.52	0.10 U	--	--	--	--	--	--	--	--	--	--	0.98	0.96	0.15	--	--	--	--
Flourene	ug/L		--	--	--	0.098 U	0.10 U	--	--	--	--	--	--	--	--	--	--	1.6	1.7	0.18	--	--	--	--
Phenanthrene	ug/L		--	--	--	0.098 U	0.10 U	--	--	--	--	--	--	--	--	--	--	0.11 U	0.11 U	0.10 U	--	--	--	--
Anthracene	ug/L		--	--	--	0.098 U	0.10 U	--	--	--	--	--	--	--	--	--	--	0.11 U	0.11 U	0.10 U	--	--	--	--
Fluoranthene	ug/L		--	--	--	0.098 U	0.10 U	--	--	--	--	--	--	--	--	--	--	0.11 U	0.11 U	0.10 U	--	--	--	--
Pyrene	ug/L		--	--	--	0.098 U	0.10 U	--	--	--	--	--	--	--	--	--	--	0.11 U	0.11 U	0.10 U	--	--	--	--
Benzo(a)anthracene	ug/L		--	--	--	0.0098 U	0.010 U	--	--	--	--	--	--	--	--	--	--	0.011 U	0.011 U	0.010 U	--	--	--	--
Chrysene	ug/L		--	--	--	0.0098 U	0.010 U	--	--	--	--	--	--	--	--	--	--	0.011 U	0.011 U	0.010 U	--	--	--	--
Benzo(b)fluoranthene	ug/L		--	--	--	0.0098 U	0.010 U	--	--	--	--	--	--	--	--	--	--	0.011 U	0.011 U	0.010 U	--	--	--	--
Benzo(k)fluoranthene	ug/L		--	--	--	0.0098 U	0.010 U	--	--	--	--	--	--	--	--	--	--	0.011 U	0.011 U	0.010 U	--	--	--	--
Benzo(a)pyrene	ug/L	0.1	--	--	--	0.0098 U	0.010 U	--	--	--	--	--	--	--	--	--	--	0.011 U	0.011 U	0.010 U	--	--	--	--
Indeno(1,2,3-cd)pyrene	ug/L		--	--	--	0.0098 U	0.010 U	--	--	--	--	--	--	--	--	--	--	0.011 U	0.011 U	0.010 U	--	--	--	--
Dibenz(a,h)anthracene	ug/L		--	--	--	0.0098 U	0.010 U	--	--	--	--	--	--	--	--	--	--	0.011 U	0.011 U	0.010 U	--	--	--	--
Benzo[g,h,i]perylene	ug/L		--	--	--	0.0098 U	0.010 U	--	--	--	--	--	--	--	--	--	--	0.011 U	0.11 U	0.010 U	--	--	--	--
GENERAL CHEMISTRY																								
Alkalinity	mg/L		--	1600	1600	340	160	320	240	310	--	250	200	280	280	--	300	420	410	140	190	260	200	--
Nitrate (as Nitrogen)	mg/L		0.05 U	0.05 U	0.05 U	0.050 U	0.50	0.050 U	0.17	0.41	--	0.31 U	0.22	0.50	0.50	0.72	0.56	0.052	0.050 U	3.4	0.73	0.050 U	1.4	--
Sulfate	mg/L		5.0 U	5.0 U	5.0 U	22	1,200	75	200	39	--	34	510	240	120	690	75	36	36	13	8.0	26	5.0 U	--
Chloride	mg/L		130	110	97	370	9,100	390	1,600	97	--	90	4100	1300	560	5000	310	980	910	38	31	610	24	--
Dissolved Methane	ug/L		4100	4400	2700	--	6.3	21	10	6.8	--	1.90	3.30	5.40	0.70 U	0.97	3.0	--	--	220	190	330	190	--
BOD5	mg/L		--	--	--	--	2.00 U	1.0 U	1.2 U	--	--	--	--	--	--	--	--	--	--	2.00 U	1.9	4.3	--	--
FIELD PARAMETERS																								
Turbidity	Neth. Turbidity Units		0.60	6.26	6.26	212	56.3	4.1	132	0.8	112.0	NM	0.0	0.2	0.5	1.4	--	120	120	164	4.8	32.6	65.5	60.0
pH	--		8.87	7.99	7.99	6.62	6.32	6.82	6.69	7.03	7.65	7.08	6.97	6.98	6.33	8.63	--	6.31	6.31	5.81	6.28	6.96	6.20	6.21
Specific Conductance	Millisiemens/cm		2.86	2.85	2.85	19.6	17.9	1.37	NM	128	6.04	0.85	11.00	5.13	2.34	18.49	--	19.8	19.8	31.8	28.90	5.13	90.00	51.60
Dissolved Oxygen	mg/L		0.35	5.02	5.02	0.0	7.55	4.90	0.01	1.75	8.48	8.69	7.10	0.97	4.76	4.46	--	0.0	0.0	4.96	1.10	0.0	0.57	0.00
Oxdat. Red. Potential	Millivolts		-182.7	-142.0	-142.0	148	54	62.0	-36	32	-139	-161	35	41.3	83	70	--	-56	-56	-14	85.6	-120	-30	-99

Notes:
1 Sample collected from replaced well.
* Duplicate sample.
J = Reported concentration is an estimate.
mg/L= Milligrams per liter.
NM = Not measured due to equipment malfunction.
µg/L = Micrograms per liter.
U = Analyte not detected above practical quantitation limit given.
U1 = The practical quantitation limit is elevated due to interferences present in the sample.
Exceeds MTCA A cleanup level.

Table 1 Groundwater Results Summary, Long Term Monitoring Event 6 (July 2015)

Monitoring Well No.			MW-25						MW-26R											
PARAMETERS	Units	Sample Date	1/24/13	7/30/13	1/22/14	8/7/14	1/21/15	7/29/15	3/18/08 ¹	1/20/10	5/26/10	8/11/10	4/6/11	9/28/11	1/24/13	7/31/13	1/21/14	8/6/14	1/21/15	7/29/15
MTCA A																				
VOLATILE ORGANICS (BTEX)																				
Benzene	ug/L	5	1.0	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	17	4.0 U	17	3.9	1.0 U	6.0	5.7	5.0	1.0 U	4.2 U	1.0 U	1.0 U
Toluene	ug/L	1,000	1.2	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	4.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	4.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	700	2	5	1.0 U	1.0 U	1.0 U	1.3	4.0 U	4.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	4.0 U	1.0 U	1.0 U
m,p-Xylene	ug/L	1,000	3.4	9.0	1.0 U	1.0 U	1.0 U	5.0 U	4.0 U	4.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.1	4.0	1.0 U	4.0 U	1.0 U	1.0 U
o-Xylene	ug/L	1,000	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	4.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U	4.0 U	1.0 U	1.0 U
TOTAL PETROLEUM HYDROCARBONS																				
Gasoline	ug/L	800	1000	1200	420	1400	100	440	1,300	400 U	530	240	100 U	270	290	400 U	100 U	400 U	100 U	100 U
Diesel	mg/L	0.5	0.7 U	2.0	0.7	4.9	0.26 U	0.36 U	1.3	0.27 U	0.26 U	0.31 U	0.27 U	0.26 U	0.26 U	0.26 U	0.25 U	0.26 U	0.25 U	0.26 U
Lube Oil	mg/L	0.5	0.44 U	0.48	0.41	0.41 U	0.42 U	0.42 U	0.40 U	0.43 U	0.41 U	0.40 U	0.43 U	0.41 U	0.41 U	0.41 U	0.40 U	0.41 U	0.41 U	0.41 U
METALS																				
Total Lead	ug/L	15	--	--	--	--	--	--	3.3	1.1 U	--	--	--	--	--	--	--	--	--	--
Dissolved Lead	ug/L	15	--	--	--	--	--	--	1.0 U	1.0 U	--	--	--	--	--	--	--	--	--	--
Dissolved Iron	ug/L		--	--	--	--	--	--	--	56 U	--	--	--	--	--	--	--	--	--	--
Total Ferrous Iron	mg/L		5.71	108	0.088	13.1	0.509	16.0	--	--	0.758	0.8	0.059	--	0.395	0.706	0.196	0.385	0.04 U	0.542
Dissolved Manganese	ug/L		670	2700	250	96	20	520	--	11 U	66	560	10 U	--	4,000	260	77	150	10 U	89
PAHs																				
Naphthalene	ug/L		--	--	--	--	--	--	0.80	0.10 U	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	ug/L		--	--	--	--	--	--	0.10 U	0.10 U	--	--	--	--	--	--	--	--	--	--
1-Methylnapththalene	ug/L		--	--	--	--	--	--	69	0.10 U	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	ug/L		--	--	--	--	--	--	0.45	0.15 U	--	--	--	--	--	--	--	--	--	--
Acenaphthene	ug/L		--	--	--	--	--	--	23	0.17 U	--	--	--	--	--	--	--	--	--	--
Flourene	ug/L		--	--	--	--	--	--	4.8	0.10 U	--	--	--	--	--	--	--	--	--	--
Phenanthrene	ug/L		--	--	--	--	--	--	10	0.10 U	--	--	--	--	--	--	--	--	--	--
Anthracene	ug/L		--	--	--	--	--	--	2.4	0.17 U	--	--	--	--	--	--	--	--	--	--
Fluoranthene	ug/L		--	--	--	--	--	--	0.88	0.10 U	--	--	--	--	--	--	--	--	--	--
Pyrene	ug/L		--	--	--	--	--	--	1.2	0.10 U	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	ug/L		--	--	--	--	--	--	0.10	0.016 U	--	--	--	--	--	--	--	--	--	--
Chrysene	ug/L		--	--	--	--	--	--	0.098	0.010 U	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	ug/L		--	--	--	--	--	--	0.022	0.010 U	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	ug/L		--	--	--	--	--	--	0.027	0.010 U	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	ug/L	0.1	--	--	--	--	--	--	0.051	0.010 U	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	ug/L		--	--	--	--	--	--	0.017	0.010 U	--	--	--	--	--	--	--	--	--	--
Dibenz(a,h)anthracene	ug/L		--	--	--	--	--	--	0.010 U	0.010 U	--	--	--	--	--	--	--	--	--	--
Benzo[g,h,i]perylene	ug/L		--	--	--	--	--	--	0.020	0.010 U	--	--	--	--	--	--	--	--	--	--
GENERAL CHEMISTRY																				
Alkalinity	mg/L		400	130	150	340	--	200	190	180	270	210	300	--	330	200	160	320	--	300
Nitrate (as Nitrogen)	mg/L		0.05 U	0.05 U	7.60	0.07	1.2	0.07	0.050 U	1.0	0.16	0.050 U	0.050 U	--	0.05 U	0.05 U	0.41	0.05 U	0.32	0.05 U
Sulfate	mg/L		18	1100	140	40	11	48	1,400	1,200	1,400	2,200	1,300	--	1100	1100	2400	1600	1500	1300
Chloride	mg/L		120	8000	1300	530	3.3	780	9,400	9,100	10,000	20,000	8,400	--	7200	14000	11000	9400	24000	7800
Dissolved Methane	ug/L		110	57	3.2	63	16	500	--	3.0	68	5.0	29	--	270	16	1.0	12.1	0.5 U	18
BOD5	mg/L		--	--	--	--	--	--	--	2.00 U	1.7	1.5	--	--	--	--	--	--	--	--
FIELD PARAMETERS																				
Turbidity	Neth. Turbidity Units		NM	49.0	8.1	6.7	14.9	14.9	85.7	70.2	3.8	38.0	0.1	82.3	NM	0.0	4.9	16.0	0.4	8.3
pH	--		6.54	6.30	5.80	6.35	8.45	8.45	6.24	6.19	6.31	6.53	6.88	6.52	6.72	6.68	6.51	6.52	8.03	8.31
Specific Conductance	Millisiemens/cm		1.07	23.40	4.77	2.41	0.26	0.26	3.25	16.6	22.42	--	--	--	5.70	38.00	38.30	25.82	30.16	23.47
Dissolved Oxygen	mg/L		0.07	0.50	0.80	0.32	2.06	2.06	0.0	6.75	5.52	0.01	0.36	0.00	0.21	2.11	2.60	4.95	5.97	1.87
Oxdat. Red. Potential	Millivolts		-287	-32	179	-76.6	76.1	76.1	48	58	-64.5	-98	-84	-275	-321	-88	-156.5	-192	89.2	-240.6

Notes:

- 1 Sample collected from replaced well.
- * Duplicate sample.
- J = Reported concentration is an estimate.
- mg/L= Milligrams per liter.
- NM = Not measured due to equipment malfunction.
- µg/L = Micrograms per liter.
- U = Analyte not detected above practical quantitation limit given.
- U1 = The practical quantitation limit is elevated due to interferences present in the sample.
- Exceeds MTCA A cleanup level.

Table 1 Groundwater Results Summary, Long Term Monitoring Event 6 (July 2015)

Monitoring Well No.			MW-27								
PARAMETERS	Units	Sample Date	4/7/11	9/30/11	1/24/13	7/30/13	1/22/14	8/7/14	1/20/15	1/20/15 *	7/30/15
MTCA A											
VOLATILE ORGANICS (BTEX)											
Benzene	ug/L	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m,p-Xylene	ug/L	1,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
o-Xylene	ug/L	1,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
TOTAL PETROLEUM HYDROCARBONS											
Gasoline	ug/L	800	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Diesel	mg/L	0.5	0.26 U	0.26 U	0.26 U	0.27 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Lube Oil	mg/L	0.5	0.41 U	0.42 U	0.42 U	0.43 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U
METALS											
Total Lead	ug/L	15	--	--	--	--	--	--	--	--	--
Dissolved Lead	ug/L	15	--	--	--	--	--	--	--	--	--
Dissolved Iron	ug/L		--	--	--	--	--	--	--	--	--
Total Ferrous Iron	mg/L		27.6	--	34.9	42.6	32.4	49.4	33.1	32.9	49.0
Dissolved Manganese	ug/L		3,900	--	4,300	6,500	5,400	6,800	4100	4000	5200
PAHs											
Naphthalene	ug/L		--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	ug/L		--	--	--	--	--	--	--	--	--
1-Methylnapthalene	ug/L		--	--	--	--	--	--	--	--	--
Acenaphthylene	ug/L		--	--	--	--	--	--	--	--	--
Acenaphthene	ug/L		--	--	--	--	--	--	--	--	--
Flourene	ug/L		--	--	--	--	--	--	--	--	--
Phenanthrene	ug/L		--	--	--	--	--	--	--	--	--
Anthracene	ug/L		--	--	--	--	--	--	--	--	--
Fluoranthene	ug/L		--	--	--	--	--	--	--	--	--
Pyrene	ug/L		--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	ug/L		--	--	--	--	--	--	--	--	--
Chrysene	ug/L		--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	ug/L		--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	ug/L		--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	ug/L	0.1	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	ug/L		--	--	--	--	--	--	--	--	--
Dibenz(a,h)anthracene	ug/L		--	--	--	--	--	--	--	--	--
Benzo[g,h,i]perylene	ug/L		--	--	--	--	--	--	--	--	--
GENERAL CHEMISTRY											
Alkalinity	mg/L		310	--	270	310	360	370	--	--	490
Nitrate (as Nitrogen)	mg/L		0.050 U	--	0.05 U	0.05 U	0.05 U	0.05 U	0.12 U	0.12 U	0.07
Sulfate	mg/L		25 U	--	25 U	10 U	25 U	5 U	25 U	25 U	25 U
Chloride	mg/L		9.8	--	10	20	34	12	14	13	19
Dissolved Methane	ug/L		8,600	--	6900	5200	5900	10900	14000	9900	5000
BOD5	mg/L		--	--	--	--	--	--	--	--	--
FIELD PARAMETERS											
Turbidity	Neth. Turbidity Units		49.2	>1000	NM	NM	9.2	35.80	15.30	15.30	1.11
pH	--		6.58	6.53	6.61	6.60	6.50	5.97	7.76	7.76	7.88
Specific Conductance	Millisiemens/cm		92	1.18	5.76	0.82	0.77	0.80	0.57	0.57	0.57
Dissolved Oxygen	mg/L		0.27	0.00	0.10	5.20	0.53	0.22	0.23	0.23	0.51
Oxdat. Red. Potential	Millivolts		-88	-111	-210	-99	-60.3	-38.8	-80.3	-80.3	-41.7

Notes:

1 Sample collected from replaced well.

* Duplicate sample.

J = Reported concentration is an estimate.

mg/L= Milligrams per liter.

NM = Not measured due to equipment malfunction.

µg/L = Micrograms per liter.

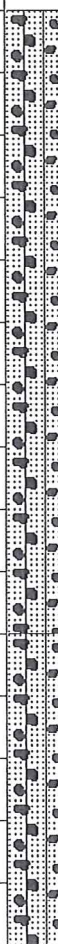
U = Analyte not detected above practical quantitation limit given.

U1 = The practical quantitation limit is elevated due to interferences present in the sample.

Exceeds MTCA A cleanup level.

Parametrix

Boring Log

Boring ID: MW-4R			Drilling Company:		Sheet 1 of 1	
Project Name: Chevron Interim Action			Drilling Method: Direct Push		Starting Date: 12/14/09	
Project #: 255-1896-063 / 04-1304			Logged by: Lily Vagelatos		Ending Date: 12/14/09	
Location: Bremerton, WA			Checked by: Ingmar Saul, L.G.		Boring Depth: 15 ft	
					Depth to Water: 5 ft	
Depth (ft)	Lithologic Symbol	Description/Classification of Materials	Sample		Boring Diagram	Depth (ft)
			Sample ID	Recovery		
0		Ground Surface				0
		MIXED TREATMENT ZONE Sandy silt with gravel, tan brown, very moist.		50"		5
5						55"
10		Silty sand and gravel, tan brown, saturated, starting at approximately 10 ft bgs.		40"		15
15		Bottom of boring at 15 feet bgs.				20

Ground Water at 5' bgs



Parametrix

Boring Log

Boring ID: MW-9R

Drilling Company:

Project Name: Chevron Interim Action

Drilling Method: Direct Push

Project #: 255-1896-063 / 04-1304

Logged by: Lily Vagelatos

Location: Bremerton, WA

Checked by: Ingmar Saul, L.G.

Sheet 1 of 1

Starting Date: 12/15/09

Ending Date: 12/15/09

Boring Depth: 15 ft

Depth to Water: 9 ft

Depth (ft)	Lithologic Symbol	Description/Classification of Materials	Sample		Boring Diagram	Depth (ft)
			Sample ID	Recovery		
0		Ground Surface				0
		TOP SOIL with VEGETATION Silty sand				
		MIXED TREATMENT ZONE Sandy silt with gravel, tan brown, very moist.		30"		
5				45"		5
10		Silty sand and gravel, tan brown, saturated, starting at approximately 10 ft bgs.	CHEV-SO-MW9R-0090	24"		10
15		Bottom of boring at 15 feet bgs.				15
20						20

Ground Water at 9' bgs



Bentonite Seal from 0 to 5'
0.75" Diameter Casing; 0 to 5'

Well Screen Sand Pack from 5' to 15'
0.75" Diameter Prepacked Well Screen; 5' to 15'

Parametrix

Boring Log

Boring ID: MW-10R

Drilling Company:

Project Name: Chevron Interim Action

Drilling Method: Direct Push

Project #: 255-1896-063 / 04-1304

Logged by: Lily Vagelatos

Location: Bremerton, WA

Checked by: Ingmar Saul, L.G.

Sheet 1 of 1

Starting Date: 12/29/09

Ending Date: 12/29/09

Boring Depth: 15 ft

Depth to Water: 7 ft

Depth (ft)	Lithologic Symbol	Description/Classification of Materials	Sample		Boring Diagram	Depth (ft)
			Sample ID	Recovery		
0		Ground Surface				0
		TILL and FILL MATERIAL Silty sand and gravel, brown tan.		12"		
5		Damp, starting at approximately 5 ft bgs.				5
		Saturated starting at approximately 7 ft bgs.	CHEV-SO-MW10R-0070	20"		
10				20"		10
15		Bottom of boring at 15 feet bgs.				15
20						20

Ground Water at 7' bgs

Bentonite Seal from 0 to 5'
0.75" Diameter Casing; 0 to 5'

Well Screen Sand Pack from 5' to 15'
0.75" Diameter Prepacked Well Screen; 5' to 15'

MONITOR WELL NO. M 11

WELL SCHEMATIC

Casing Elevation: 100.03
Casing Stickup: -0.3

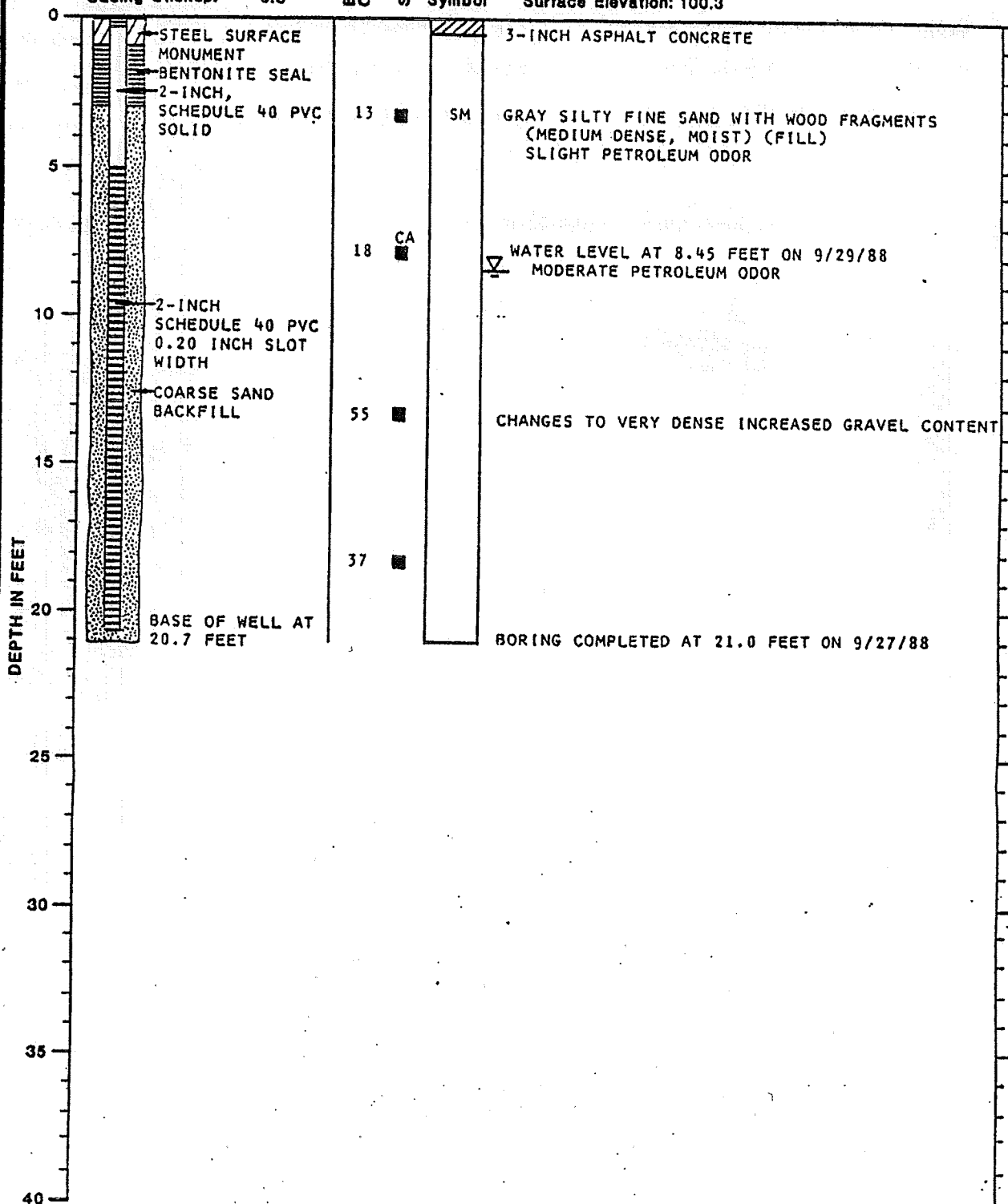
Blow-
Count

Samples

Group
Symbol

DESCRIPTION

Surface Elevation: 100.3



Note: See Figure A-2 for Explanation of Symbols

Geo  Engineers

LOG OF MONITOR WELL

FIGURE A-13

0372-34-4 KRF:DWA:GD 10/12/88

Parametrix

Boring Log

Boring ID: MW-13R

Drilling Company:

Project Name: Chevron Interim Action

Drilling Method: Direct Push

Project #: 255-1896-063 / 04-1304

Logged by: Lily Vagelatos

Location: Bremerton, WA

Checked by: Ingmar Saul, L.G.

Sheet 1 of 1

Starting Date: 12/14/09

Ending Date: 12/14/09

Boring Depth: 15 ft

Depth to Water: 7 ft

Depth (ft)	Lithologic Symbol	Description/Classification of Materials	Sample		Boring Diagram	Depth (ft)
			Sample ID	Recovery		
0		Ground Surface				0
		MIXED TREATMENT ZONE Sandy silt with gravel, tan brown, very moist.		45"		
5				50"		5
10		Silty sand and gravel, tan brown, saturated, at approximately 10 ft bgs.		30"		10
15		Bottom of boring at 15 feet bgs.				15
20						20

Ground Water at 7' bgs

Bentonite Seal from 0 to 5'
0.75" Diameter Casing; 0 to 5'

Well Screen Sand Pack from 5' to 15'
0.75" Diameter Prepacked Well Screen; 5' to 15'

Boring ID: MW-20R

Drilling Method: HSA

Sheet 1 of 1

Project Name: Chevron LTM

Sample Method: Sprit Spoon

Drilling Date: 1/10/13

Project #: 233-1896-107

Logged by: Lara Linde, L.G.

Boring Depth: 15 ft

Location: Bremerton, WA

Checked by: Ingmar Saul, L.G.

Depth to Water: 4.99 ft

Ecology Tag #: BHK 398

Elevation (ft)	Lithologic Symbol	U.S.C.S.	Description/Classification of Materials; Soil: Group name, group symbol, color, plasticity, grain size, moisture, density, misc.	PID (PPM)	Recovery (in)	Well Diagram	Depth (ft)
0.0			Ground Surface				0
	SM		SAND (SM) Brown-gray, nonplastic, medium to fine, moist, loose, trace of fine rounded gravel, no petroleum odor.		36"/60"		
-8.0			Increasing silt content starting at approx. 8 ft bgs.		30"/60"		
-9.0			Strong petroleum odor starting at approx. 9 ft bgs.				
-9.5							
	SP		SAND (SP) Gray, low plasticity, fine to medium grained, wet, loose, some fine rounded gravel, strong petroleum odor.		36"/60"		10
-14.0							
-15.0	ML		SILT (ML) Brown-gray, high plasticity, moist, soft, some fine rounded gravel, slight petroleum odor.				15
			Bottom of boring at 15 feet bgs.				

Parametrix

Boring Log

Boring ID: MW-21R Project Name: Chevron Interim Action Project #: 255-1896-063 / 04-1304 Location: Bremerton, WA		Drilling Company: Drilling Method: Direct Push Logged by: Lily Vagelatos Checked by: Ingmar Saul, L.G.		Sheet 1 of 1 Starting Date: 12/15/09 Ending Date: 12/15/09 Boring Depth: 15 ft Depth to Water: 7 ft		
Depth (ft)	Lithologic Symbol	Description/Classification of Materials	Sample		Boring Diagram	Depth (ft)
			Sample ID	Recovery		
0		Ground Surface				0
		MIXED TREATMENT ZONE Sandy silt with gravel, tan brown, very moist.		50"		5
5				50"		10
10		Silty sand and gravel, tan brown, saturated, starting at approximately 10 ft bgs.	CHEV-SO-MW21R-0100	40"		15
15		Bottom of boring at 15 feet bgs.				20

Parametrix

Boring Log

Boring ID: MW-22R		Drilling Company:		Sheet 1 of 1	
Project Name: Chevron Interim Action		Drilling Method: Direct Push		Starting Date: 12/14/09	
Project #: 255-1896-063 / 04-1304		Logged by: Lily Vagelatos		Ending Date: 12/14/09	
Location: Bremerton, WA		Checked by: Ingmar Saul, L.G.		Boring Depth: 15 ft	
				Depth to Water: 10 ft	

Depth (ft)	Lithologic Symbol	Description/Classification of Materials	Sample		Boring Diagram	Depth (ft)
			Sample ID	Recovery		
0		Ground Surface				0
		MIXED TREATMENT ZONE Sandy silt with gravel, tan brown, very moist.		50"		
5				55"		5
10		Silty sand and gravel, tan brown, saturated, starting at approximately 10 ft bgs.	CHEV-SO-MW22R-0100	45"		10
15		Bottom of boring at 15 feet bgs.				15
20						20

Boring ID: MW-25

Drilling Company: ESN

Sheet 1 of 1

Project Name: Chevron Prop RI/FS

Drilling Method: Auger

Drilling Date: 3/7/08

Project #: 255-1896-063

Logged by: David Dinkuhn, P.E.

Boring Depth: 20 ft

Location: SEE MAP

Checked by: David Dinkuhn, P.E.

Depth to Water: 9.5 ft

Depth (ft)	Sample Type	Lithologic Symbol	Description/Classification of Materials	Sample			Well Point Diagram	Depth (ft)
				PID Reading	Sample ID	Recovery (ft)		
0			Ground Surface				The diagram shows a vertical well casing. At the top is a concrete monument. Below it is a bentonite annular seal from 1 to 3 feet below ground. The casing continues down. A 10/20 Colorado sand filter pack is placed from 3 to 20 feet below ground. A 2-inch 0.010 slot PVC screen is installed from 5 to 20 feet below ground. The casing is 2-inch PVC from 0 to 5 feet below ground. A flush mount is also indicated.	0
			Silty Sandy Gravel Gray brown, damp, No petroleum hydrocarbon odor (FILL)			4		
				0		3		
5						3		
				0		3		
10			Silty Gravelly Sand Gray, wet, moderate petroleum hydrocarbon odor (FILL)	1400	CHEV-SO-MW25-0100	3		
			Silty Gravelly Sand Wet, No petroleum hydrocarbon odor (OUTWASH)			3		
15				4		3		
						1		
20			Bottom of boring at 20 feet bgs.					

Parametrix

Boring Log

Boring ID: MW-26R

Drilling Company:

Project Name: Chevron Interim Action

Drilling Method: Direct Push

Project #: 255-1896-063 / 04-1304

Logged by: Lily Vagelatos

Location: Bremerton, WA

Checked by: Ingmar Saul, L.G.

Sheet 1 of 1

Starting Date: 12/14/09

Ending Date: 12/14/09

Boring Depth: 15 ft

Depth to Water: 9.5 ft

Depth (ft)	Lithologic Symbol	Description/Classification of Materials	Sample		Boring Diagram	Depth (ft)
			Sample ID	Recovery		
0		Ground Surface				0
		MIXED TREATMENT ZONE Sandy silt with gravel, tan brown, very moist.		50"		
5				45"		5
10		Silty sand and gravel, tan brown, saturated, untreated fill in saturation zone, starting at approximately 10 ft bgs.	CHEV-SO-MW26R-0095	40"		10
15		Bottom of boring at 15 feet bgs.				15
20						20

Ground Water at 9.5' bgs

Bentonite Seal from 0 to 5'
0.75" Diameter Casing; 0 to 5'

Well Screen Sand Pack from 5' to 15'
0.75" Diameter Prepacked Well Screen; 5' to 15'

Boring ID: MW-27

Drilling Method: Probe/HSA Combo

Project Name: Former Chevron Prop. Remediation

Sample Method: Split Spoon

Project #: 233-1896-098 / 01-03

Logged by: Lara Linde

Location: 1310 Highland Drive, Bremerton

Checked by: Ingmar Saul, R.G.

Sheet 1 of 1

Drilling Date: 3/11/11

Boring Depth: 16 ft

Depth to Water: 6 ft

Ecology Tag #: BCN 891

Elevation (ft)	Lithologic Symbol	U.S.C.S.	Description/Classification of Materials; Soil: Group name, group symbol, color, plasticity, grain size, moisture, density, misc.	PID (PPM)	Recovery (in)	Well Diagram	Depth (ft)
12.0			Ground Surface				0
11.5	GW		RIP RAP Coarse gravel to cobbles (beach reinforcement)				
9.0	SP		SAND Brown, fine to medium grained, dry, loose, occassional fine gravel, no odor.	0	36/48		
6.0			Red, moist, iron staining starting at approximately 3 ft bgs.				
3.5			Moist to wet, few fine gravels, no odor, starting at approximately 6 ft bgs.	0	18/48		5
	SM		SAND Brown to gray, fine to medium grained, wet, loose, organic odor, no sheen.	0	40/48		10
-4.0			Gray, fine grained, wet to saturated, 5% shell fragments, moderate petroleum odor at approximately 16 ft bgs.	0	42/48		15
			Bottom of boring at 16 feet bgs.				

Holden

6/10/15

0615 on site Area B

0630 All HANDS

0645 PACKING CLOAC/CANAL
MANAGEMENT

Tues wed Thurs

3 9

26 130

21 110

everything else 00

Scale: 1 square =

7/29/15 Chevron Lower Valley - Brentford

0915 MW-25 DTW 7.95'

0925 MW-15R DTW 7.62'

0928 MW-4R DTW 10.35'

~~0935 MW-22R DTW 7.64' 7.65'~~

0935 MW-22R DTW 7.64'

0940 MW-26R DTW 9.55'

0945 MW-21R DTW 7.84'

0950 MW-27 DTW 6.91'

0955 MW-20R DTW 7.88'

0958 ~~MW-10R~~ DTW 4.80'

MW-11

1050 Sampled MW-25

1131 Purged MW-04R dry - will
allow for recovery

1152 Purged MW-13R dry - will
allow for recovery

1230 Purged MW-26R dry - decent
recovery - will sample all analyses
(1240 sample time)

1345 Sampled MW-04R - Gw/BTEX/methane

1400 Sampled MW-13R - Gw/BTEX/methane

1425 Sampled MW-26R

1610 Sampled MW-21R - Field DURING
@ 1620

1700 LEAVING SITE

Scale: 1 square =

Well #: MW-4R

Sample #: Dev-GW-04R-120

Page 1 of 1

Groundwater Sampling Field Data Sheet No. 2

Well #: MW-11Sample #: Cher-GW-11-160

Project Number: <u>2331896007</u>		Date: <u>7/30/15</u>	
Project Name: <u>Former Chevron Property</u>		Location: <u>Chevron Lower yard</u>	
Project Address: <u>1310 Highland Ave, Bremerton</u>		Sampled By: <u>ARMORY</u>	
Client Name: <u>City of Bremerton</u>		Purged By: <u>ARMORY</u>	

Casing Diameter: <u>2" X</u> <u>4" _____</u> <u>6" _____</u> Other <u>_____</u>
Depth to Water (feet): <u>4.75</u> Purge Volume Measurement Method: <u>Cred Cyl</u>
Depth of Well (feet): <u>19.0</u> Date Purged: <u>7/30/15</u>
Reference Point (surveyor's notch, etc.): <u>TOC</u> Purge Time (from/to): <u>1059-1120</u>
Date/Time Sampled: <u>7/30/15 1130</u> Purge Rate: <u>~150 ml/min</u>

Purge Volume Calculation: $(\pi^2 h)(7.48 \text{ gal/ft}^3)(\# \text{ Casing volumes})$
Purge Volume (gallons) for: 2" = $(0.16)(h)(\#Cv)$; 4" = $(0.653)(h)(\#Cv)$; 6" = $(1.48)(h)(\#Cv)$
Calculated Purge Volume (gallons): Actual Purge Volume (gallons): 1.0

TIME (2400 hr)	WATER LEVEL (feet)	pH (units)	COND (μ S/cm)	DO (mg/L)	TEMP °C	Turb SAT %	REDOX (mv)
<u>1108</u>	<u>5.14</u>	<u>7.23</u>	<u>386</u>	<u>0.74</u>	<u>16.52</u>	<u>5.10</u>	<u>50.9</u>
<u>1112</u>	<u>5.25</u>	<u>7.21</u>	<u>379</u>	<u>0.61</u>	<u>16.46</u>	<u>2.32</u>	<u>49.5</u>
<u>1116</u>	<u>5.36</u>	<u>7.20</u>	<u>380</u>	<u>0.55</u>	<u>16.54</u>	<u>3.16</u>	<u>47.6</u>
<u>1120</u>	<u>5.47</u>	<u>7.17</u>	<u>378</u>	<u>0.55</u>	<u>16.69</u>	<u>1.13</u>	<u>45.8</u>

Purge Equipment: <u>Peristaltic</u>	Sampling Equipment: <u>Peristaltic</u>
Laboratory: <u>On Site</u>	Date Sent to Lab: <u>7/30/15</u>
Chain-of-Custody (yes/no): <u>Yes</u>	Field QC Sample Number: <u> </u>
Shipment Method: <u>Covered</u>	Split With (names[s]/organization): <u> </u>

Well Integrity: <u>OK</u>
Remarks: <u> </u>
Signature: <u>NTZ</u>

Well #: MW-13R

Sample #: Onev-GW-13R-120

Page 1 of 1

Well #: MW-20R
Sample #: Chw-CW-20R-120

→ 250 ml/min
@ 10 V

Sample #: Cher-GW-21R-110

7/29/15
1620

Well #: MW-22R

Sample #: Chw-GW-ZZR-120

Page 1 of 1

Groundwater Sampling Field Data Sheet No. 2

Well #: MW-25Sample #: Chw-GW-25-120

Project Number: <u>2331896107</u>	Date: <u>7/29/15</u>
Project Name: <u>Former Chevron</u>	Location: <u>Chevron Lower Yuma</u>
Project Address: <u>1310 Highland Ave, Brea</u>	Sampled By: <u>ARMAY</u>
Client Name: <u>City of Brea</u>	Purged By: <u>ARMAY</u>

Casing Diameter: 2" <u>X</u> 4" _____ 6" _____ Other _____
Depth to Water (feet): <u>8.05</u> Purge Volume Measurement Method: <u>Grnd Grl.</u>
Depth of Well (feet): <u>18.90</u> Date Purged: <u>7/29/15</u>
Reference Point (surveyor's notch, etc.): <u>TOC</u> Purge Time (from/to): <u>1017 - 1048</u>
Date/Time Sampled: <u>7/29/15 1050</u>

Purge Volume Calculation: $(\pi^2h)(7.48 \text{ gal/ft}^3)(\# \text{ Casing volumes})$
Purge Volume (gallons) for: 2" = $(0.16)(h)(\#Cv)$; 4" = $(0.653)(h)(\#Cv)$; 6" = $(1.48)(h)(\#Cv)$
Calculated Purge Volume (gallons): _____ Actual Purge Volume (gallons): 2.0

TIME (2400 hr)	WATER LEVEL (feet)	pH (units)	COND ($\mu\text{S}/\text{cm}$)	DO (mg/L)	TEMP °C	TURB SAF%	REDOX (mv)
1017	8.58	7.73	2146	0.93	14.36	20.5	-106.5
1021	8.72	7.70	2066	0.95	14.44	12.3	-75.2
1025	8.91	7.72	1990	0.99	14.49	15.2	-66.7
1029	9.07	7.93	2006	1.17	14.88	16.7	-148.7
1033	9.20	7.99	2245	0.92	14.83	10.1	-165.9
1037	9.29	8.04	2480	0.83	14.85	9.85	-174.4
1041	9.34	8.09	2516	0.67	14.81	8.66	-176.5
1045	9.39	8.12	2577	0.63	14.62	8.20	-179.7
1045	9.45	8.15	2586	0.61	14.80	9.67	-181.2

Purge Equipment: <u>Peristaltic</u>	Sampling Equipment: <u>Peristaltic</u>
Laboratory: <u>On Site</u>	Date Sent to Lab: <u>7/30/15</u>
Chain-of-Custody (yes/no): <u>Yes</u>	Field QC Sample Number: <u> </u>
Shipment Method: <u>Common</u>	Split With (names[s]/organization): <u> </u>

Well Integrity: <u>Good</u>
Remarks: <u>Slight Green / Hydrocarbon odor</u>
Signature: <u>[Signature]</u>

Groundwater Sampling Field Data Sheet No. 2

Well #: MW-26RSample #: Char-GW-26R-130

Project Number: 2331896107 Date: 7/29/15
 Project Name: Former Char. Prop. Location: Char. Lower Yd.
 Project Address: 1310 Highland, Brem. Sampled By: ARMOY
 Client Name: City of Brem. Purged By: ARMOY

Casing Diameter: 2" 4" 6" Other 2 3/4

Depth to Water (feet): 10.52 Purge Volume Measurement Method: Grad. cyl.

Depth of Well (feet): 15.55 Date Purged: 7/29/15

Reference Point (surveyor's notch, etc.): Purge Time (from/to): 1402-1422

Date/Time Sampled: 7/29/15 1425 Purge Rate: ~250 ml/min

Purge Volume Calculation: $(\pi r^2 h)(7.48 \text{ gal/ft}^3)(\# \text{ Casing volumes})$

Purge Volume (gallons) for: 2" = $(0.16)(h)(\#Cv)$; 4" = $(0.653)(h)(\#Cv)$; 6" = $(1.48)(h)(\#Cv)$

Calculated Purge Volume (gallons): Actual Purge Volume (gallons): 1.5

TIME (2400 hr)	WATER LEVEL (feet)	pH (units)	COND (μ S/cm)	DO (mg/L)	TEMP °C	SAL %	REDOX (mv)
1406	~	8.05	22709	—	16.50	—	-167.5
1410	—	8.13	23741	2.22	16.05	20.5	-254.3
1414	—	8.35	23770	1.93	15.81	19.6	-250.9
1418	—	8.32	23425	1.89	15.58	12.2	-272.8
1422	—	8.31	23471	1.87	15.50	8.3	-240.6

Purge Equipment: Peristaltic Sampling Equipment: Peristaltic

Laboratory: Onsite Date Sent to Lab: 7/30/15

Chain-of-Custody (yes/no): Yes Field QC Sample Number: —

Shipment Method: Carrier Split With (names[s]/organization): —

Well Integrity: OK

Remarks:

Signature: [Signature]

Well #: MW-27

Sample #: Chw-GK-27-130

Page 1 of 1

TECHNICAL MEMORANDUM

DATE: August 31, 2015
TO: David Dinkuhn
FROM: Lisa Gilbert
SUBJECT: Quality Assurance/Quality Control Review for Event 6
CC:
PROJECT NUMBER: 233-1896-107
PROJECT NAME: Former Chevron Property Remediation Performance Monitoring July 2015

Introduction

This technical memorandum summarizes the results of an internal quality assurance/quality control (QA/QC) review of analytical results for groundwater samples collected on July 29 and 30, 2015. Ten groundwater samples, including one field duplicate (CHEV-GW-MW21R-1110), were submitted to OnSite Environmental, Inc. (Redmond, WA) for analysis (Batch 1507-247). Ferrous iron analyses were subcontracted to Analytical Resources, Inc. (AKB8).

All samples were analyzed for gasoline/BTEX, diesel/lube oil, dissolved methane, dissolved manganese, nitrate, sulfate, alkalinity, chloride and total ferrous iron, with the following exceptions:

- CHEV-GW-MW13R-0120 and CHEV-GW-MW04R-0120 were analyzed for gasoline/BTEX and dissolved methane only.

Final laboratory data were submitted to Parametrix via a Tier II-type data report and EIM EDDs (OnSite Laboratory Reference Number 1507-247). All data and analytical QC elements were reviewed against laboratory and method QC criteria, and qualifiers were applied where judged appropriate.

DATA REVIEW SUMMARY

All samples collected were prepared and analyzed using standard methods. All analyses requested on the COC were conducted. No laboratory method or trip blank contamination was reported.

On-Site Environmental, Inc. noted the following:

- Gasoline range hydrocarbon results were qualified with “U1” for sample CHEV-GW-MW25-0120 indicating an elevated practical quantitation limit due to interferences present in the sample.
- Diesel range hydrocarbon results were qualified with “U1” for samples CHEV-GW-MW25-0120, CHEV-GW-MW21R-0110, and CHEV-GW-MW21R-1110 indicating an elevated practical quantitation limit due to interferences present in the sample.
- Diesel range hydrocarbon results for CHEV-GW-MW25-0120, CHEV-GW-MW21R-0110, and CHEV-GW-MW21R-1110 were qualified with “M1” indicating that hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

- All diesel and lube oil range hydrocarbon sample extracts were qualified "X1" indicating the sample extract was treated with sulfuric acid/silica gel cleanup procedure.

ARI, Inc. noted the following:

- All samples except CHEV-MW21R-1110 had a small amount of headspace.
- Samples CHEV-MW-22R-0120, CHEV-MW-25-0120, and CHEV-MW-26R-0130 were analyzed beyond the recommended holding time of 24 hours.

A comparison of results between the sample and duplicate results were within acceptable ranges of precision, with the following exception:

- Methane results for CHEV-GW-MW21R-0110 and duplicate -1110 had a RPD of 47.9 percent. These results will be qualified "J" as estimated.

CONCLUSION

Appropriate standard methods were used. No laboratory method blank contamination was observed. Analytical accuracy and precision were determined to be generally acceptable based on this review.

- All data reported should be considered valid as qualified and acceptable for further use.
- The methane results for samples CHEV-GW-MW21R-0110 and -1110 will be qualified "J" as estimated due to variability observed between the sample and duplicate.
- The total ferrous iron results for samples CHEV-MW-22R-0120, CHEV-MW-25-0120, and CHEV-MW-26R-0130 will be qualified "J" as estimated due to analysis beyond the recommended holding time.



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

August 11, 2015

David Dinkuhn
Parametrix, Inc.
4660 Kitsap Way, Suite A
Bremerton, WA 98312

Re: Analytical Data for Project 2233 1896-007
Laboratory Reference No. 1507-247

Dear David:

Enclosed are the analytical results and associated quality control data for samples submitted on July 31, 2015.

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

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

Sincerely,

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

David Baumeister
Project Manager

Enclosures

Date of Report: August 11, 2015
Samples Submitted: July 31, 2015
Laboratory Reference: 1507-247
Project: 2233 1896-007

Case Narrative

Samples were collected on July 29 and 30, 2015 and received by the laboratory on July 31, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

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

Date of Report: August 11, 2015
 Samples Submitted: July 31, 2015
 Laboratory Reference: 1507-247
 Project: 2233 1896-007

NWTPH-Gx/BTEX

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	CHEV-GW-25-120					
Laboratory ID:	07-247-01					
Benzene	ND	1.0	EPA 8021B	8-5-15	8-5-15	U1
Toluene	ND	1.0	EPA 8021B	8-5-15	8-5-15	
Ethyl Benzene	1.3	1.0	EPA 8021B	8-5-15	8-5-15	
m,p-Xylene	ND	5.0	EPA 8021B	8-5-15	8-5-15	
o-Xylene	ND	1.0	EPA 8021B	8-5-15	8-5-15	
Gasoline	440	100	NWTPH-Gx	8-5-15	8-5-15	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	94	71-113				
Client ID:	CHEV-GW-4R-120					
Laboratory ID:	07-247-02					
Benzene	45	1.0	EPA 8021B	8-6-15	8-6-15	
Toluene	1.6	1.0	EPA 8021B	8-6-15	8-6-15	
Ethyl Benzene	25	1.0	EPA 8021B	8-6-15	8-6-15	
m,p-Xylene	1.8	1.0	EPA 8021B	8-6-15	8-6-15	
o-Xylene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
Gasoline	410	100	NWTPH-Gx	8-6-15	8-6-15	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	94	71-113				
Client ID:	CHEV-GW-13R-120					
Laboratory ID:	07-247-03					
Benzene	1.3	1.0	EPA 8021B	8-6-15	8-6-15	
Toluene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
Ethyl Benzene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
m,p-Xylene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
o-Xylene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
Gasoline	ND	100	NWTPH-Gx	8-6-15	8-6-15	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	88	71-113				

Date of Report: August 11, 2015
 Samples Submitted: July 31, 2015
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 Project: 2233 1896-007

NWTPH-Gx/BTEX

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	CHEV-GW-22R-120					
Laboratory ID:	07-247-04					
Benzene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
Toluene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
Ethyl Benzene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
m,p-Xylene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
o-Xylene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
Gasoline	ND	100	NWTPH-Gx	8-6-15	8-6-15	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	93	71-113				
Client ID:	CHEV-GW-26-130					
Laboratory ID:	07-247-05					
Benzene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
Toluene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
Ethyl Benzene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
m,p-Xylene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
o-Xylene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
Gasoline	ND	100	NWTPH-Gx	8-6-15	8-6-15	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	87	71-113				
Client ID:	CHEV-GW-21R-110					
Laboratory ID:	07-247-06					
Benzene	16	1.0	EPA 8021B	8-6-15	8-6-15	
Toluene	7.1	1.0	EPA 8021B	8-6-15	8-6-15	
Ethyl Benzene	26	1.0	EPA 8021B	8-6-15	8-6-15	
m,p-Xylene	24	1.0	EPA 8021B	8-6-15	8-6-15	
o-Xylene	2.0	1.0	EPA 8021B	8-6-15	8-6-15	
Gasoline	1600	100	NWTPH-Gx	8-6-15	8-6-15	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	94	71-113				

Date of Report: August 11, 2015
 Samples Submitted: July 31, 2015
 Laboratory Reference: 1507-247
 Project: 2233 1896-007

NWTPH-Gx/BTEX

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: CHEV-GW-21R-1110						
Laboratory ID: 07-247-07						
Benzene	17	1.0	EPA 8021B	8-6-15	8-6-15	
Toluene	7.2	1.0	EPA 8021B	8-6-15	8-6-15	
Ethyl Benzene	26	1.0	EPA 8021B	8-6-15	8-6-15	
m,p-Xylene	24	1.0	EPA 8021B	8-6-15	8-6-15	
o-Xylene	1.9	1.0	EPA 8021B	8-6-15	8-6-15	
Gasoline	1700	100	NWTPH-Gx	8-6-15	8-6-15	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	84	71-113				
Client ID: CHEV-GW-11-160						
Laboratory ID: 07-247-08						
Benzene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
Toluene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
Ethyl Benzene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
m,p-Xylene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
o-Xylene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
Gasoline	ND	100	NWTPH-Gx	8-6-15	8-6-15	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	89	71-113				
Client ID: CHEV-GW-20R-120						
Laboratory ID: 07-247-09						
Benzene	6.7	1.0	EPA 8021B	8-5-15	8-5-15	
Toluene	ND	1.0	EPA 8021B	8-5-15	8-5-15	
Ethyl Benzene	16	1.0	EPA 8021B	8-5-15	8-5-15	
m,p-Xylene	ND	1.0	EPA 8021B	8-5-15	8-5-15	
o-Xylene	ND	1.0	EPA 8021B	8-5-15	8-5-15	
Gasoline	350	100	NWTPH-Gx	8-5-15	8-5-15	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	97	71-113				

Date of Report: August 11, 2015
 Samples Submitted: July 31, 2015
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 Project: 2233 1896-007

NWTPH-Gx/BTEX

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	CHEV-GW-27-120					
Laboratory ID:	07-247-10					
Benzene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
Toluene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
Ethyl Benzene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
m,p-Xylene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
o-Xylene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
Gasoline	ND	100	NWTPH-Gx	8-6-15	8-6-15	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	<i>89</i>	<i>71-113</i>				

Date of Report: August 11, 2015
 Samples Submitted: July 31, 2015
 Laboratory Reference: 1507-247
 Project: 2233 1896-007

**NWTPH-Gx/BTEX
 METHOD BLANK QUALITY CONTROL**

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0805W1					
Benzene	ND	1.0	EPA 8021B	8-5-15	8-5-15	
Toluene	ND	1.0	EPA 8021B	8-5-15	8-5-15	
Ethyl Benzene	ND	1.0	EPA 8021B	8-5-15	8-5-15	
m,p-Xylene	ND	1.0	EPA 8021B	8-5-15	8-5-15	
o-Xylene	ND	1.0	EPA 8021B	8-5-15	8-5-15	
Gasoline	ND	100	NWTPH-Gx	8-5-15	8-5-15	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	86	71-113				
Laboratory ID:	MB0806W1					
Benzene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
Toluene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
Ethyl Benzene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
m,p-Xylene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
o-Xylene	ND	1.0	EPA 8021B	8-6-15	8-6-15	
Gasoline	ND	100	NWTPH-Gx	8-6-15	8-6-15	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	93	71-113				

Date of Report: August 11, 2015
 Samples Submitted: July 31, 2015
 Laboratory Reference: 1507-247
 Project: 2233 1896-007

**NWTPH-Gx/BTEX
 QUALITY CONTROL**

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	08-016-01							
	ORIG	DUP						
Benzene	ND	ND	NA	NA	NA	NA	NA	30
Toluene	ND	ND	NA	NA	NA	NA	NA	30
Ethyl Benzene	ND	ND	NA	NA	NA	NA	NA	30
m,p-Xylene	ND	ND	NA	NA	NA	NA	NA	30
o-Xylene	ND	ND	NA	NA	NA	NA	NA	30
Gasoline	ND	ND	NA	NA	NA	NA	NA	30
<i>Surrogate:</i>								
Fluorobenzene				99	97	71-113		
DUPLICATE								
Laboratory ID:	07-247-04							
	ORIG	DUP						
Benzene	ND	ND	NA	NA	NA	NA	NA	30
Toluene	ND	ND	NA	NA	NA	NA	NA	30
Ethyl Benzene	ND	ND	NA	NA	NA	NA	NA	30
m,p-Xylene	ND	ND	NA	NA	NA	NA	NA	30
o-Xylene	ND	ND	NA	NA	NA	NA	NA	30
Gasoline	ND	ND	NA	NA	NA	NA	NA	30
<i>Surrogate:</i>								
Fluorobenzene				93	92	71-113		
MATRIX SPIKES								
Laboratory ID:	08-016-01							
	MS	MSD	MS	MSD	MS	MSD		
Benzene	53.7	52.0	50.0	50.0	ND	107	104	82-120
Toluene	53.0	51.4	50.0	50.0	ND	106	103	83-120
Ethyl Benzene	52.5	50.9	50.0	50.0	ND	105	102	83-120
m,p-Xylene	52.6	50.9	50.0	50.0	ND	105	102	81-123
o-Xylene	51.7	50.1	50.0	50.0	ND	103	100	80-120
<i>Surrogate:</i>								
Fluorobenzene					93	91	71-113	

Date of Report: August 11, 2015
 Samples Submitted: July 31, 2015
 Laboratory Reference: 1507-247
 Project: 2233 1896-007

NWTPH-Dx

Matrix: Water
 Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID: CHEV-GW-25-120						
Laboratory ID: 07-247-01						
Diesel Range Organics	ND	0.36	NWTPH-Dx	8-5-15	8-5-15	U1,X1,M1
Lube Oil Range Organics	ND	0.42	NWTPH-Dx	8-5-15	8-5-15	X1
Surrogate:	Percent Recovery	Control Limits				
<i>o</i> -Terphenyl	110	50-150				

Client ID: CHEV-GW-22R-120						
Laboratory ID: 07-247-04						
Diesel Range Organics	ND	0.26	NWTPH-Dx	8-5-15	8-5-15	X1
Lube Oil Range Organics	ND	0.41	NWTPH-Dx	8-5-15	8-5-15	X1
Surrogate:	Percent Recovery	Control Limits				
<i>o</i> -Terphenyl	106	50-150				

Client ID: CHEV-GW-26-130						
Laboratory ID: 07-247-05						
Diesel Range Organics	ND	0.26	NWTPH-Dx	8-5-15	8-5-15	X1
Lube Oil Range Organics	ND	0.41	NWTPH-Dx	8-5-15	8-5-15	X1
Surrogate:	Percent Recovery	Control Limits				
<i>o</i> -Terphenyl	111	50-150				

Client ID: CHEV-GW-21R-110						
Laboratory ID: 07-247-06						
Diesel Range Organics	ND	0.45	NWTPH-Dx	8-5-15	8-5-15	U1,X1,M1
Lube Oil Range Organics	ND	0.41	NWTPH-Dx	8-5-15	8-5-15	X1
Surrogate:	Percent Recovery	Control Limits				
<i>o</i> -Terphenyl	103	50-150				

Client ID: CHEV-GW-21R-1110						
Laboratory ID: 07-247-07						
Diesel Range Organics	ND	0.46	NWTPH-Dx	8-5-15	8-5-15	U1,X1,M1
Lube Oil Range Organics	ND	0.41	NWTPH-Dx	8-5-15	8-5-15	X1
Surrogate:	Percent Recovery	Control Limits				
<i>o</i> -Terphenyl	108	50-150				

Client ID: CHEV-GW-11-160						
Laboratory ID: 07-247-08						
Diesel Range Organics	ND	0.26	NWTPH-Dx	8-5-15	8-5-15	X1
Lube Oil Range Organics	ND	0.42	NWTPH-Dx	8-5-15	8-5-15	X1
Surrogate:	Percent Recovery	Control Limits				
<i>o</i> -Terphenyl	108	50-150				

Date of Report: August 11, 2015
 Samples Submitted: July 31, 2015
 Laboratory Reference: 1507-247
 Project: 2233 1896-007

NWTPH-Dx

Matrix: Water
 Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	CHEV-GW-20R-120					
Laboratory ID:	07-247-09					
Diesel Range Organics	ND	0.26	NWTPH-Dx	8-5-15	8-5-15	X1
Lube Oil Range Organics	ND	0.41	NWTPH-Dx	8-5-15	8-5-15	X1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	115	50-150				
Client ID:	CHEV-GW-27-120					
Laboratory ID:	07-247-10					
Diesel Range Organics	ND	0.26	NWTPH-Dx	8-5-15	8-5-15	X1
Lube Oil Range Organics	ND	0.41	NWTPH-Dx	8-5-15	8-5-15	X1
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	118	50-150				

Date of Report: August 11, 2015
 Samples Submitted: July 31, 2015
 Laboratory Reference: 1507-247
 Project: 2233 1896-007

**NWTPH-Dx
QUALITY CONTROL**

Matrix: Water
 Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0805W1					
Diesel Range Organics	ND	0.25	NWTPH-Dx	8-5-15	8-5-15	X1
Lube Oil Range Organics	ND	0.40	NWTPH-Dx	8-5-15	8-5-15	X1
Surrogate:	Percent Recovery	Control Limits				
<i>o</i> -Terphenyl	93	50-150				

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	07-247-10							
	ORIG	DUP						
Diesel Range	ND	ND	NA	NA	NA	NA	NA	X1
Lube Oil Range	ND	ND	NA	NA	NA	NA	NA	X1
Surrogate:								
<i>o</i> -Terphenyl				118	105	50-150		

Date of Report: August 11, 2015
 Samples Submitted: July 31, 2015
 Laboratory Reference: 1507-247
 Project: 2233 1896-007

**DISSOLVED METHANE
RSK 175**

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	CHEV-GW-25-120					
Laboratory ID:	07-247-01					
Methane	500	50	RSK 175	8-7-15	8-7-15	

Client ID:	CHEV-GW-4R-120					
Laboratory ID:	07-247-02					
Methane	1200	250	RSK 175	8-7-15	8-7-15	

Client ID:	CHEV-GW-13R-120					
Laboratory ID:	07-247-03					
Methane	44	2.5	RSK 175	8-7-15	8-7-15	

Client ID:	CHEV-GW-22R-120					
Laboratory ID:	07-247-04					
Methane	3.0	0.50	RSK 175	8-7-15	8-7-15	

Client ID:	CHEV-GW-26-130					
Laboratory ID:	07-247-05					
Methane	18	1.0	RSK 175	8-7-15	8-7-15	

Client ID:	CHEV-GW-21R-110					
Laboratory ID:	07-247-06					
Methane	4400	250	RSK 175	8-7-15	8-7-15	

Client ID:	CHEV-GW-21R-1110					
Laboratory ID:	07-247-07					
Methane	2700	250	RSK 175	8-7-15	8-7-15	

Client ID:	CHEV-GW-11-160					
Laboratory ID:	07-247-08					
Methane	220	10	RSK 175	8-7-15	8-7-15	

Date of Report: August 11, 2015
Samples Submitted: July 31, 2015
Laboratory Reference: 1507-247
Project: 2233 1896-007

**DISSOLVED METHANE
RSK 175**

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	CHEV-GW-20R-120					
Laboratory ID:	07-247-09					
Methane	2200	250	RSK 175	8-7-15	8-7-15	

Client ID:	CHEV-GW-27-120					
Laboratory ID:	07-247-10					
Methane	5000	500	RSK 175	8-7-15	8-7-15	

Date of Report: August 11, 2015
 Samples Submitted: July 31, 2015
 Laboratory Reference: 1507-247
 Project: 2233 1896-007

**DISSOLVED METHANE
 RSK 175
 QUALITY CONTROL**

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0807W1					
Methane	ND	0.50	RSK 175	8-7-15	8-7-15	

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB0807W1										
	SB	SBD	SB	SBD		SB	SBD				
Methane	4.24	4.12	4.42	4.42	N/A	96	93	75-125	3	25	

Date of Report: August 11, 2015
 Samples Submitted: July 31, 2015
 Laboratory Reference: 1507-247
 Project: 2233 1896-007

**DISSOLVED MANGANESE
EPA 6010C**

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID: 07-247-01						
Client ID: CHEV-GW-25-120						
Manganese	520	11	6010C		8-3-15	
Lab ID: 07-247-04						
Client ID: CHEV-GW-22R-120						
Manganese	360	11	6010C		8-3-15	
Lab ID: 07-247-05						
Client ID: CHEV-GW-26-130						
Manganese	89	11	6010C		8-3-15	
Lab ID: 07-247-06						
Client ID: CHEV-GW-21R-110						
Manganese	2300	11	6010C		8-3-15	
Lab ID: 07-247-07						
Client ID: CHEV-GW-21R-1110						
Manganese	2400	11	6010C		8-3-15	
Lab ID: 07-247-08						
Client ID: CHEV-GW-11-160						
Manganese	320	11	6010C		8-3-15	

Date of Report: August 11, 2015
 Samples Submitted: July 31, 2015
 Laboratory Reference: 1507-247
 Project: 2233 1896-007

**DISSOLVED MANGANESE
 EPA 6010C**

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	07-247-09					
Client ID:	CHEV-GW-20R-120					
Manganese	1900	11	6010C		8-3-15	
Lab ID:	07-247-10					
Client ID:	CHEV-GW-27-120					
Manganese	5200	11	6010C		8-3-15	

Date of Report: August 11, 2015
Samples Submitted: July 31, 2015
Laboratory Reference: 1507-247
Project: 2233 1896-007

**DISSOLVED MANGANESE
EPA 6010C
METHOD BLANK QUALITY CONTROL**

Date Analyzed: 8-3-15

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0803D1

Analyte	Method	Result	PQL
Manganese	6010C	ND	11

Date of Report: August 11, 2015
Samples Submitted: July 31, 2015
Laboratory Reference: 1507-247
Project: 2233 1896-007

**DISSOLVED MANGANESE
EPA 6010C
DUPLICATE QUALITY CONTROL**

Date Analyzed: 8-3-15

Matrix: Water
Units: ug/L (ppb)

Lab ID: 07-244-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Manganese	ND	ND	NA	11	

Date of Report: August 11, 2015
Samples Submitted: July 31, 2015
Laboratory Reference: 1507-247
Project: 2233 1896-007

**DISSOLVED MANGANESE
EPA 6010C
MS/MSD QUALITY CONTROL**

Date Analyzed: 8-3-15

Matrix: Water
Units: ug/L (ppb)

Lab ID: 07-244-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Manganese	1110	1160	104	1080	97	7	

Date of Report: August 11, 2015
 Samples Submitted: July 31, 2015
 Laboratory Reference: 1507-247
 Project: 2233 1896-007

NITRATE (as Nitrogen)
EPA 353.2

Matrix: Water
 Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	CHEV-GW-25-120					
Laboratory ID:	07-247-01					
Nitrate	0.067	0.050	EPA 353.2	8-4-15	8-4-15	

Client ID:	CHEV-GW-22R-120					
Laboratory ID:	07-247-04					
Nitrate	0.56	0.050	EPA 353.2	8-4-15	8-4-15	

Client ID:	CHEV-GW-26-130					
Laboratory ID:	07-247-05					
Nitrate	ND	0.050	EPA 353.2	8-4-15	8-4-15	

Client ID:	CHEV-GW-21R-110					
Laboratory ID:	07-247-06					
Nitrate	ND	0.050	EPA 353.2	7-31-15	8-4-15	

Client ID:	CHEV-GW-21R-1110					
Laboratory ID:	07-247-07					
Nitrate	ND	0.050	EPA 353.2	7-31-15	8-4-15	

Client ID:	CHEV-GW-11-160					
Laboratory ID:	07-247-08					
Nitrate	4.5	0.10	EPA 353.2	7-31-15	8-4-15	

Client ID:	CHEV-GW-20R-120					
Laboratory ID:	07-247-09					
Nitrate	0.063	0.050	EPA 353.2	7-31-15	8-4-15	

Client ID:	CHEV-GW-27-120					
Laboratory ID:	07-247-10					
Nitrate	0.070	0.050	EPA 353.2	7-31-15	8-4-15	

Date of Report: August 11, 2015
 Samples Submitted: July 31, 2015
 Laboratory Reference: 1507-247
 Project: 2233 1896-007

NITRATE (as Nitrogen)
EPA 353.2
QUALITY CONTROL

Matrix: Water
 Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0804W1					
Nitrate	ND	0.050	EPA 353.2	8-4-15	8-4-15	

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	07-244-02							
	ORIG	DUP						
Nitrate	0.0543	0.0524	NA	NA	NA	NA	4	13

MATRIX SPIKE								
Laboratory ID:	07-244-02							
	MS	MS		MS				
Nitrate	2.16	2.00	0.0543	105	90-123	NA	NA	

SPIKE BLANK								
Laboratory ID:	SB0804W1							
	SB	SB		SB				
Nitrate	2.14	2.00	NA	107	88-121	NA	NA	

Date of Report: August 11, 2015
 Samples Submitted: July 31, 2015
 Laboratory Reference: 1507-247
 Project: 2233 1896-007

SULFATE
ASTM D516-07

Matrix: Water
 Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	CHEV-GW-25-120					
Laboratory ID:	07-247-01					
Sulfate	48	25	ASTM D516-07	7-31-15	7-31-15	

Client ID:	CHEV-GW-22R-120					
Laboratory ID:	07-247-04					
Sulfate	75	25	ASTM D516-07	7-31-15	7-31-15	

Client ID:	CHEV-GW-26-130					
Laboratory ID:	07-247-05					
Sulfate	1300	500	ASTM D516-07	7-31-15	7-31-15	

Client ID:	CHEV-GW-21R-110					
Laboratory ID:	07-247-06					
Sulfate	ND	5.0	ASTM D516-07	7-31-15	7-31-15	

Client ID:	CHEV-GW-21R-1110					
Laboratory ID:	07-247-07					
Sulfate	ND	5.0	ASTM D516-07	7-31-15	7-31-15	

Client ID:	CHEV-GW-11-160					
Laboratory ID:	07-247-08					
Sulfate	24	10	ASTM D516-07	7-31-15	7-31-15	

Client ID:	CHEV-GW-20R-120					
Laboratory ID:	07-247-09					
Sulfate	ND	25	ASTM D516-07	7-31-15	7-31-15	

Client ID:	CHEV-GW-27-120					
Laboratory ID:	07-247-10					
Sulfate	ND	25	ASTM D516-07	7-31-15	7-31-15	

Date of Report: August 11, 2015
 Samples Submitted: July 31, 2015
 Laboratory Reference: 1507-247
 Project: 2233 1896-007

**SULFATE
 ASTM D516-07
 QUALITY CONTROL**

Matrix: Water
 Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0731W1					
Sulfate	ND	5.0	ASTM D516-07	7-31-15	7-31-15	

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	07-244-01							
	ORIG	DUP						
Sulfate	110	104	NA	NA	NA	NA	6	10

MATRIX SPIKE								
Laboratory ID:	07-244-01							
	MS	MS		MS				
Sulfate	201	100.0	110	91	82-121	NA	NA	

SPIKE BLANK								
Laboratory ID:	SB0731W1							
	SB	SB		SB				
Sulfate	10.4	10.0	NA	104	90-114	NA	NA	

Date of Report: August 11, 2015
 Samples Submitted: July 31, 2015
 Laboratory Reference: 1507-247
 Project: 2233 1896-007

**TOTAL ALKALINITY
 SM 2320B**

Matrix: Water
 Units: mg CaCO₃/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	CHEV-GW-25-120					
Laboratory ID:	07-247-01					
Total Alkalinity	200	2.0	SM 2320B	8-3-15	8-3-15	
Client ID:	CHEV-GW-22R-120					
Laboratory ID:	07-247-04					
Total Alkalinity	300	2.0	SM 2320B	8-3-15	8-3-15	
Client ID:	CHEV-GW-26-130					
Laboratory ID:	07-247-05					
Total Alkalinity	300	2.0	SM 2320B	8-3-15	8-3-15	
Client ID:	CHEV-GW-21R-110					
Laboratory ID:	07-247-06					
Total Alkalinity	1600	2.0	SM 2320B	8-3-15	8-3-15	
Client ID:	CHEV-GW-21R-1110					
Laboratory ID:	07-247-07					
Total Alkalinity	1600	2.0	SM 2320B	8-3-15	8-3-15	
Client ID:	CHEV-GW-11-160					
Laboratory ID:	07-247-08					
Total Alkalinity	170	2.0	SM 2320B	8-3-15	8-3-15	
Client ID:	CHEV-GW-20R-120					
Laboratory ID:	07-247-09					
Total Alkalinity	350	2.0	SM 2320B	8-3-15	8-3-15	
Client ID:	CHEV-GW-27-120					
Laboratory ID:	07-247-10					
Total Alkalinity	490	2.0	SM 2320B	8-3-15	8-3-15	

Date of Report: August 11, 2015
 Samples Submitted: July 31, 2015
 Laboratory Reference: 1507-247
 Project: 2233 1896-007

**TOTAL ALKALINITY
 SM 2320B
 QUALITY CONTROL**

Matrix: Water
 Units: mg CaCO₃/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0803W1					
Total Alkalinity	ND	2.0	SM 2320B	8-3-15	8-3-15	

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	07-247-01							
	ORIG	DUP						
Total Alkalinity	204	198	NA	NA	NA	NA	3	10

SPIKE BLANK								
Laboratory ID:	SB0803W1							
	SB	SB		SB				
Total Alkalinity	104	100	NA	104	88-114	NA	NA	

Date of Report: August 11, 2015
 Samples Submitted: July 31, 2015
 Laboratory Reference: 1507-247
 Project: 2233 1896-007

CHLORIDE
SM 4500-Cl E

Matrix: Water
 Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	CHEV-GW-25-120					
Laboratory ID:	07-247-01					
Chloride	780	20	SM 4500-Cl E	8-5-15	8-5-15	

Client ID:	CHEV-GW-22R-120					
Laboratory ID:	07-247-04					
Chloride	310	20	SM 4500-Cl E	8-5-15	8-5-15	

Client ID:	CHEV-GW-26-130					
Laboratory ID:	07-247-05					
Chloride	7800	200	SM 4500-Cl E	8-5-15	8-5-15	

Client ID:	CHEV-GW-21R-110					
Laboratory ID:	07-247-06					
Chloride	110	4.0	SM 4500-Cl E	7-31-15	8-5-15	

Client ID:	CHEV-GW-21R-1110					
Laboratory ID:	07-247-07					
Chloride	97	4.0	SM 4500-Cl E	7-31-15	8-5-15	

Client ID:	CHEV-GW-11-160					
Laboratory ID:	07-247-08					
Chloride	6.7	2.0	SM 4500-Cl E	7-31-15	8-5-15	

Client ID:	CHEV-GW-20R-120					
Laboratory ID:	07-247-09					
Chloride	15	2.0	SM 4500-Cl E	7-31-15	8-5-15	

Client ID:	CHEV-GW-27-120					
Laboratory ID:	07-247-10					
Chloride	19	2.0	SM 4500-Cl E	7-31-15	8-5-15	

Date of Report: August 11, 2015
 Samples Submitted: July 31, 2015
 Laboratory Reference: 1507-247
 Project: 2233 1896-007

**CHLORIDE
 SM 4500-Cl E
 QUALITY CONTROL**

Matrix: Water

Units: mg/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0805W1					
Chloride	ND	2.0	SM 4500-Cl E	8-5-15	8-5-15	

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	07-247-04							
	ORIG	DUP						
Chloride	307	311	NA	NA	NA	NA	1	12

MATRIX SPIKE

Laboratory ID:	07-247-04							
	MS	MS		MS				
Chloride	813	500.0	307	101	92-122	NA	NA	

SPIKE BLANK

Laboratory ID:	SB0805W1							
	SB	SB		SB				
Chloride	52.7	50.0	NA	105	92-120	NA	NA	



Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B - The analyte indicated was also found in the blank sample.
- C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
- E - The value reported exceeds the quantitation range and is an estimate.
- F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
- H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
- I - Compound recovery is outside of the control limits.
- J - The value reported was below the practical quantitation limit. The value is an estimate.
- K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
- L - The RPD is outside of the control limits.
- M - Hydrocarbons in the gasoline range are impacting the diesel range result.
- M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
- N - Hydrocarbons in the lube oil range are impacting the diesel range result.
- N1 - Hydrocarbons in diesel range are impacting lube oil range results.
- O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
- P - The RPD of the detected concentrations between the two columns is greater than 40.
- Q - Surrogate recovery is outside of the control limits.
- S - Surrogate recovery data is not available due to the necessary dilution of the sample.
- T - The sample chromatogram is not similar to a typical _____.
- U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- U1 - The practical quantitation limit is elevated due to interferences present in the sample.
- V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
- W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
- X - Sample extract treated with a mercury cleanup procedure.
- X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.
- Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
- Z -
- ND - Not Detected at PQL
- PQL - Practical Quantitation Limit
- RPD - Relative Percent Difference



Analytical Resources, Incorporated
Analytical Chemists and Consultants

7 August 2015

David Baumeister
OnSite Environmental, Inc.
14648 NE 95th
Redmond, WA 98052

RE: Client Project: City of Bremerton
ARI Job No: AKB8

Dear David:

Please find enclosed the chain-of-custody (COC) record and the final results for the samples from the project referenced above. Analytical Resources, Inc. (ARI) accepted eight water samples on July 30, 2015. The samples were analyzed for ferrous iron as requested.

It was noted prior to analysis that the holding had expired for several of the samples and the bottles for all samples except CHEV-GW-21R-1110 contained headspace.

These analyses proceeded without incident of note.

An electronic copy of these reports will remain on file at ARI. Should you have any questions, please contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

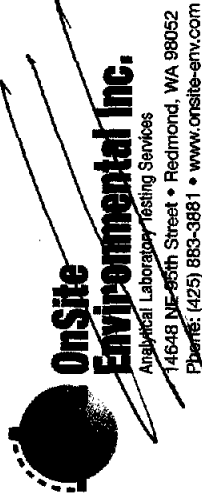

Mark D. Harris

Project Manager
206/695-6210
markh@arilabs.com

Enclosures

cc: file AKB8

MDH/mdh



OnSite Environmental Inc.
Analytical Laboratory/Testing Services
14648 NE 85th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

TO ARI

Chain of Custody

ACRS

Company: PARAMETRIX		Project Number: 2331896007		Project Name: City of Bremerton - Former Chevron Ref.		Project Manager: David Dinkova		Sampled by: Adam Ramey	
Laboratory Number:		Number of Containers		Time Sampled		Time Received		Time Delivered	
(Check One)		Date Sampled		Date Received		Date Delivered		Date Delivered	
☐ Same Day ☐ 1 Day		7/29/15 1050 W		7/29/15 1050 W		7/29/15 1050 W		7/29/15 1050 W	
☐ 2 Days ☐ 3 Days		7/30/15 1345 W		7/30/15 1345 W		7/30/15 1345 W		7/30/15 1345 W	
☐ Standard (7 Days) (TPH analysis 5 Days)		7/30/15 1400 W		7/30/15 1400 W		7/30/15 1400 W		7/30/15 1400 W	
☐ (other)		7/30/15 1240 W		7/30/15 1240 W		7/30/15 1240 W		7/30/15 1240 W	
		7/30/15 1425 W		7/30/15 1425 W		7/30/15 1425 W		7/30/15 1425 W	
		7/30/15 1610 W		7/30/15 1610 W		7/30/15 1610 W		7/30/15 1610 W	
		7/30/15 1620 W		7/30/15 1620 W		7/30/15 1620 W		7/30/15 1620 W	
		7/30/15 1730 W		7/30/15 1730 W		7/30/15 1730 W		7/30/15 1730 W	
		7/30/15 1030 W		7/30/15 1030 W		7/30/15 1030 W		7/30/15 1030 W	
		7/30/15 0920 W		7/30/15 0920 W		7/30/15 0920 W		7/30/15 0920 W	
Relinquished	7/30/15 1330	PARAMETRIX	7/30/15 1330	7/30/15 1330	7/30/15 1330	7/30/15 1330	7/30/15 1330	7/30/15 1330	7/30/15 1330
Received	7/30/15 2:41 PM	THUNDERDOG	7/30/15 2:41 PM	7/30/15 2:41 PM	7/30/15 2:41 PM	7/30/15 2:41 PM	7/30/15 2:41 PM	7/30/15 2:41 PM	7/30/15 2:41 PM
Relinquished	7/30/15 5:52	THUNDERDOG	7/30/15 5:52	7/30/15 5:52	7/30/15 5:52	7/30/15 5:52	7/30/15 5:52	7/30/15 5:52	7/30/15 5:52
Received	7/30/15 1552	APR-1	7/30/15 1552	7/30/15 1552	7/30/15 1552	7/30/15 1552	7/30/15 1552	7/30/15 1552	7/30/15 1552
Relinquished									
Received									
Relinquished									
Received									

Chromatograms with final report

Chromatograms with final report



Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Asite

Project Name: City of Bremerton

COC No(s): NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: NA

Assigned ARI Job No: AKBE

Tracking No: NA

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

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 9.2

Time: 1552

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID# 2002515

Cooler Accepted by: CA Date: 7/30/15 Time: 1552

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? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: NA

Was sufficient ice used (if appropriate)? NA YES NO

Were all bottles sealed in individual plastic bags? YES NO

Did all bottles arrive in good condition (unbroken)? YES NO

Were all bottle labels complete and legible? YES NO

Did the number of containers listed on COC match with the number of containers received? 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 sheet, excluding VOCs)... NA YES NO

Were all VOC vials free of air bubbles? NA YES NO

Was sufficient amount of sample sent in each bottle? YES NO

Date VOC Trip Blank was made at ARI: NA

Was Sample Split by ARI: NA YES Date/Time: Equipment: Split by:

Samples Logged by: AN Date: 7/30/15 Time: 1606

** Notify Project Manager of discrepancies or concerns **

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

Only Ferrous Iron bottles received.

By: AN Date: 7/30/15



Small → "sm" (< 2 mm)

Peabubbles → "pb" (2 to < 4 mm)

Large → "lg" (4 to < 6 mm)

Headspace → "hs" (> 6 mm)



ARI Job No: AKB8

PC: Mark

VTSR: 07/30/15

Inquiry Number: NONE

Analysis Requested: 07/31/15

Contact: Gilbert, Lisa

Client: Parametrix, Inc.

Logged by: AV

Sample Set Used: Yes-481

Validatable Package: No

Deliverables:

Project #: 2331896007

Project: City of Bremerton-Former Chevron

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	TPHD <2	Fe2+ <2	DMET DOC FLT FLT	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
15-13806 AKB8A	CHEV-GW-25-120														*					
15-13807 AKB8B	CHEV-GW-22R-120																			
15-13808 AKB8C	CHEV-GW-26R-130																			
15-13809 AKB8D	CHEV-GW-21R-110																			
15-13810 AKB8E	CHEV-GW-21R-1110																			
15-13811 AKB8F	CHEV-GW-11-160																			
15-13812 AKB8G	CHEV-GW-20R-120																			
15-13813 AKB8H	CHEV-GW-27-120																			

* lab to determine preservation.

AKB8 : 00007

AKB8 : 00007

Sample ID Cross Reference Report



ARI Job No: AKB8
Client: OnSite Environmental, Inc.
Project Event: 2331896007
Project Name: City of Bremerton-Former Chevron

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. CHEV-GW-25-120	AKB8A	15-13806	Water	07/29/15 10:50	07/30/15 15:52
2. CHEV-GW-22R-120	AKB8B	15-13807	Water	07/29/15 12:40	07/30/15 15:52
3. CHEV-GW-26R-130	AKB8C	15-13808	Water	07/29/15 14:25	07/30/15 15:52
4. CHEV-GW-21R-110	AKB8D	15-13809	Water	07/29/15 16:10	07/30/15 15:52
5. CHEV-GW-21R-1110	AKB8E	15-13810	Water	07/29/15 16:20	07/30/15 15:52
6. CHEV-GW-11-160	AKB8F	15-13811	Water	07/30/15 11:30	07/30/15 15:52
7. CHEV-GW-20R-120	AKB8G	15-13812	Water	07/30/15 10:30	07/30/15 15:52
8. CHEV-GW-27-120	AKB8H	15-13813	Water	07/30/15 09:20	07/30/15 15:52



Data Reporting Qualifiers

Effective 12/31/13

Inorganic Data

- U** Indicates that the target analyte was not detected at the reported concentration
- *** Duplicate RPD is not within established control limits
- B** Reported value is less than the CRDL but $\geq$ the Reporting Limit
- N** Matrix Spike recovery not within established control limits
- NA** Not Applicable, analyte not spiked
- H** The natural concentration of the spiked element is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
- L** Analyte concentration is ≤ 5 times the Reporting Limit and the replicate control limit defaults to ± 1 RL instead of the normal 20% RPD

Organic Data

- U** Indicates that the target analyte was not detected at the reported concentration
- *** Flagged value is not within established control limits
- B** Analyte detected in an associated Method Blank at a concentration greater than one-half of ARI's Reporting Limit or 5% of the regulatory limit or 5% of the analyte concentration in the sample.
- J** Estimated concentration when the value is less than ARI's established reporting limits
- D** The spiked compound was not detected due to sample extract dilution
- E** Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.



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- Q Indicates a detected analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20%Drift or minimum RRF).
- S Indicates an analyte response that has saturated the detector. The calculated concentration is not valid; a dilution is required to obtain valid quantification of the analyte
- NA The flagged analyte was not analyzed for
- NR Spiked compound recovery is not reported due to chromatographic interference
- NS The flagged analyte was not spiked into the sample
- M Estimated value for an analyte detected and confirmed by an analyst but with low spectral match parameters. This flag is used only for GC-MS analyses
- N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification"
- Y The analyte is not detected at or above the reported concentration. The reporting limit is raised due to chromatographic interference. The Y flag is equivalent to the U flag with a raised reporting limit.
- EMPC Estimated Maximum Possible Concentration (EMPC) defined in EPA Statement of Work DLM02.2 as a value "calculated for 2,3,7,8-substituted isomers for which the quantitation and /or confirmation ion(s) has signal to noise in excess of 2.5, but does not meet identification criteria" (Dioxin/Furan analysis only)
- C The analyte was positively identified on only one of two chromatographic columns. Chromatographic interference prevented a positive identification on the second column
- P The analyte was detected on both chromatographic columns but the quantified values differ by $\geq 40\%$ RPD with no obvious chromatographic interference
- X Analyte signal includes interference from polychlorinated diphenyl ethers. (Dioxin/Furan analysis only)
- Z Analyte signal includes interference from the sample matrix or perfluorokerosene ions. (Dioxin/Furan analysis only)



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Geotechnical Data

- A The total of all fines fractions. This flag is used to report total fines when only sieve analysis is requested and balances total grain size with sample weight.
- F Samples were frozen prior to particle size determination
- SM Sample matrix was not appropriate for the requested analysis. This normally refers to samples contaminated with an organic product that interferes with the sieving process and/or moisture content, porosity and saturation calculations
- SS Sample did not contain the proportion of "fines" required to perform the pipette portion of the grain size analysis
- W Weight of sample in some pipette aliquots was below the level required for accurate weighting

SAMPLE RESULTS-CONVENTIONALS
AKB8-OnSite Environmental, Inc.



Matrix: Water
Data Release Authorized: *RD*
Reported: 08/06/15

Project: City of Bremerton-Former Che
Event: 2331896007
Date Sampled: 07/29/15
Date Received: 07/30/15

Client ID: CHEV-GW-25-120
ARI ID: 15-13806 AKB8A

Analyte	Date Batch	Method	Units	RL	Sample
Ferrous Iron	07/30/15 073015#1	SM3500 FeD	mg/L	0.400	16.0

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AKB8-OnSite Environmental, Inc.



Matrix: Water
Data Release Authorized: *ha*
Reported: 08/06/15

Project: City of Bremerton-Former Che
Event: 2331896007
Date Sampled: 07/29/15
Date Received: 07/30/15

Client ID: CHEV-GW-22R-120
ARI ID: 15-13807 AKB8B

Analyte	Date Batch	Method	Units	RL	Sample
Ferrous Iron	07/30/15 073015#1	SM3500 FeD	mg/L	0.040	< 0.040 U

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AKB8-OnSite Environmental, Inc.



Matrix: Water
Data Release Authorized: *RA*
Reported: 08/06/15

Project: City of Bremerton-Former Che
Event: 2331896007
Date Sampled: 07/29/15
Date Received: 07/30/15

Client ID: CHEV-GW-26R-130
ARI ID: 15-13808 AKB8C

Analyte	Date Batch	Method	Units	RL	Sample
Ferrous Iron	07/30/15 073015#1	SM3500 FeD	mg/L	0.040	0.542

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AKB8-OnSite Environmental, Inc.



Matrix: Water
Data Release Authorized: *RD*
Reported: 08/06/15

Project: City of Bremerton-Former Che
Event: 2331896007
Date Sampled: 07/29/15
Date Received: 07/30/15

Client ID: CHEV-GW-21R-110
ARI ID: 15-13809 AKB8D

Analyte	Date Batch	Method	Units	RL	Sample
Ferrous Iron	07/30/15 073015#1	SM3500 FeD	mg/L	0.800	9.66

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AKB8-OnSite Environmental, Inc.



Matrix: Water
Data Release Authorized: *RD*
Reported: 08/06/15

Project: City of Bremerton-Former Che
Event: 2331896007
Date Sampled: 07/29/15
Date Received: 07/30/15

Client ID: CHEV-GW-21R-1110
ARI ID: 15-13810 AKB8E

Analyte	Date Batch	Method	Units	RL	Sample
Ferrous Iron	07/30/15 073015#1	SM3500 FeD	mg/L	0.800	10.3

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AKB8-OnSite Environmental, Inc.



Matrix: Water
Data Release Authorized: *ld*
Reported: 08/06/15

Project: City of Bremerton-Former Che
Event: 2331896007
Date Sampled: 07/30/15
Date Received: 07/30/15

Client ID: CHEV-GW-11-160
ARI ID: 15-13811 AKB8F

Analyte	Date Batch	Method	Units	RL	Sample
Ferrous Iron	07/30/15 073015#1	SM3500 FeD	mg/L	0.040	1.16

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AKB8-OnSite Environmental, Inc.



Matrix: Water
Data Release Authorized: *RD*
Reported: 08/06/15

Project: City of Bremerton-Former Che
Event: 2331896007
Date Sampled: 07/30/15
Date Received: 07/30/15

Client ID: CHEV-GW-20R-120
ARI ID: 15-13812 AKB8G

Analyte	Date Batch	Method	Units	RL	Sample
Ferrous Iron	07/30/15 073015#1	SM3500 FeD	mg/L	0.800	31.2

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
AKB8-OnSite Environmental, Inc.



Matrix: Water
Data Release Authorized: *RN*
Reported: 08/06/15

Project: City of Bremerton-Former Che
Event: 2331896007
Date Sampled: 07/30/15
Date Received: 07/30/15

Client ID: CHEV-GW-27-120
ARI ID: 15-13813 AKB8H

Analyte	Date Batch	Method	Units	RL	Sample
Ferrous Iron	07/30/15 073015#1	SM3500 FeD	mg/L	2.00	49.0

RL Analytical reporting limit
U Undetected at reported detection limit

METHOD BLANK RESULTS-CONVENTIONALS
AKB8-OnSite Environmental, Inc.



Matrix: Water
Data Release Authorized: *RD*
Reported: 08/06/15

Project: City of Bremerton-Former Che
Event: 2331896007
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank	ID
Ferrous Iron	SM3500 FeD	07/30/15	mg/L	< 0.040 U	

LAB CONTROL RESULTS-CONVENTIONALS
AKB8-OnSite Environmental, Inc.



Matrix: Water
Data Release Authorized: *RA*
Reported: 08/06/15

Project: City of Bremerton-Former Che
Event: 2331896007
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Ferrous Iron SM3500 FeD	ICVL	07/30/15	mg/L	0.495	0.500	99.0%

REPLICATE RESULTS-CONVENTIONALS
AKB8-OnSite Environmental, Inc.



Matrix: Water
Data Release Authorized: *RP*
Reported: 08/06/15

Project: City of Bremerton-Former Che
Event: 2331896007
Date Sampled: 07/29/15
Date Received: 07/30/15

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: AKB8A Client ID: CHEV-GW-25-120						
Ferrous Iron	SM3500 FeD	07/30/15	mg/L	16.0	15.9	0.6%

MS/MSD RESULTS-CONVENTIONALS
AKB8-OnSite Environmental, Inc.



Matrix: Water
Data Release Authorized: *RD*
Reported: 08/06/15

Project: City of Bremerton-Former Che
Event: 2331896007
Date Sampled: 07/29/15
Date Received: 07/30/15

Analyte	Method	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: AKB8A Client ID: CHEV-GW-25-120							
Ferrous Iron	SM3500 FeD	07/30/15	mg/L	16.0	34.0	20.0	90.0%



Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.on-site-env.com

Chain of Custody

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CIVIL OFFICIALS INC.																											
Analytical Laboratory Testing Services 14648 NE 95th Street • Redmond, WA 98052 Phone: (425) 883-3881 • www.onsite-env.com																											
Company: PARAMETRIX			Turnaround Request (in working days)																								
Project Number: 2331896007			(Check One) ☐ Same Day ☐ 1 Day ☐ 2 Days ☐ 3 Days																								
Project Name: Cit of Burien - Former Chevron Ref.			☒ Standard (7 Days) (TPH analysis 5 Days)																								
Project Manager: David Dinkens																											
Sampled by: Adam Ramsey			☐ (other)																								
Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers																						
1	Chev-GW-25-120	7/29/15	1050	W	12	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	Dissolved Methane	Dissolved Manganese	Total Perchloric Iron	Nitrate / Sulfate / Alkalinity / Chloride	% Moisture	
2	Chev-GW-04K-120		1345	W	6	X	X		X													X	X	X	X	X	
3	Chev-GW-18R-120		1400	W	6	X	X															X					
4	Chev-GW-22R-120		1240	W	12	X	X		X													X	X	X	X	X	
5	Chev-GW-26R-130		1425	W	12	X	X		X													X	X	X	X	X	
6	Chev-GW-21R-110		1510	W	12	X	X		X													X	X	X	X	X	
7	Chev-GW-21R-110		1620	W	12	X	X		X													X	X	X	X	X	
8	Chev-GW-11-160	7/30/15	1130	W	12	X	X		X													X	X	X	X	X	
9	Chev-GW-20R-120		1030	W	12	X	X		X													X	X	X	X	X	
10	Chev-GW-27-120		0920	W	12	X	X		X													X	X	X	X	X	
Relinquished		Signature	Company	Date	Time	Comments/Special Instructions																					
Received			PARAMETRIX	7/30/15	1330	Silica Gel Cleanup on ALL DX Analyses																					
Relinquished			THUNDER DOG	7/30/15	2:41pm																						
Received			THUNDER DOG	7/30/15	1646																						
Relinquished			ORE	7/30/15	1646																						
Received																											
Relinquished																											
Received																											
Relinquished																											
Reviewed/Date			Reviewed/Date			Chromatograms with final report ☐																					