



Mr. Roger Nye
Washington State Department of Ecology
3190 160th Ave SE
Bellevue, Washington 98008-5452

Subject: **First Semi-annual 2015 Groundwater Monitoring and Sampling Report
Former Standard Oil Service Station, Chevron Site No. 209335**
1225 North 45th Street
Seattle, Washington

Dear Mr. Nye:

Leidos Engineering, LLC (Leidos), on behalf of Chevron Environmental Management Company (CEMC), prepared this letter summarizing the first semi-annual 2015 groundwater monitoring and sampling event at former Standard Oil Service Station, Chevron Site No. 209335 (the site) located in Seattle, Washington (Figure 1).

FIELD ACTIVITIES

Gettler-Ryan, Inc. (Gettler-Ryan) conducted the groundwater monitoring and sampling field event on March 11, 2015. Gettler-Ryan collected depth-to-groundwater measurements and checked for the presence of separate-phase hydrocarbons (SPH) in monitoring wells MW-6, MW-7, MW-8, MW-9, and MW-10. SPH were not observed in any of the monitoring wells. Groundwater flow was to the southwest at a gradient of approximately 0.01 feet per foot. A potentiometric map is provided as Figure 2.

Groundwater samples were collected from all monitoring wells and submitted under chain of custody (COC) procedures to Eurofins Lancaster Laboratories, Inc. in Lancaster, Pennsylvania for the following analyses:

- Total petroleum hydrocarbons (TPH) as gasoline-range organics by Northwest Method NWTPH-Gx;
- TPH as diesel-range organics and TPH as heavy oil-range organics by Northwest Method NWTPH-Dx extended with silica-gel cleanup;
- Benzene, toluene, ethylbenzene, and total xylenes by United States Environmental Protection Agency (USEPA) Method 8021B; and
- Total lead by USEPA Method 6020.

Field data sheets and COC documentation are provided in the Gettler-Ryan groundwater monitoring and sampling data package (Attachment A).

RESULTS

Groundwater elevations and flow direction during this event are consistent with historical data. Historical groundwater elevation data, SPH thickness data, and laboratory analytical results are summarized in Table 1. The laboratory analysis report is provided as Attachment B and hydrographs are included in Attachment C.

The results of the first semi-annual 2015 sampling event indicate that petroleum-hydrocarbon constituent concentrations have been below Model Toxics Control Act Method A cleanup levels for at least four consecutive quarters in monitoring wells MW-6, MW-8, MW-9, and MW-10.

This event was a eighth quarterly monitoring and sampling event completed following the surfactant treatment activities conducted on March 18, 2013. SPH were not detected in monitoring well MW-7 for the second time since the post-surfactant extraction groundwater sample was collected on March 22, 2013.

If you have any questions or comments, please contact Ruth Otteman at (425) 482-3328 or via email at ottemanr@leidos.com.

Sincerely,

Leidos Engineering, LLC

Ruth Ott

Ruth Otteman, LG
Project Manager



RUTH A. OTTEMAN

Kozlowska

Kinga Kozlowska
Environmental Scientist

Enclosures:

Figure 1 – Vicinity Map

Figure 2 – Potentiometric Map

Table 1 – Groundwater Monitoring Data and Analytical Results

Attachment A – Groundwater Monitoring and Sampling Data Package

Attachment B – Laboratory Analysis Report

Attachment C – Hydrographs

cc: Mr. Mark Horne – Chevron Environmental Management Company
6101 Bollinger Canyon Road, San Ramon, CA 94583

Ms. Veronica Redstone – Bellwether
1651 Bellevue Avenue, Seattle, WA 98122-2014
Project File

REPORT LIMITATIONS

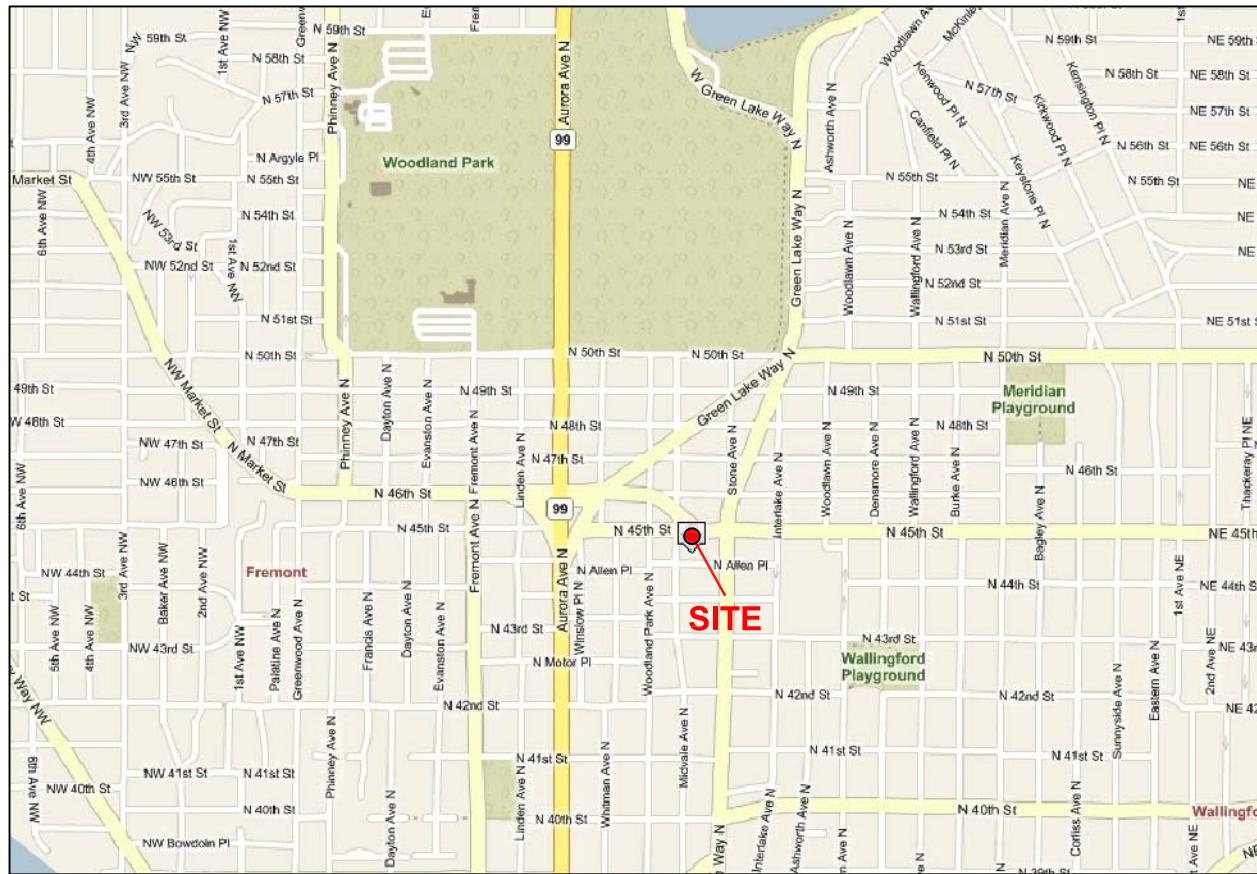
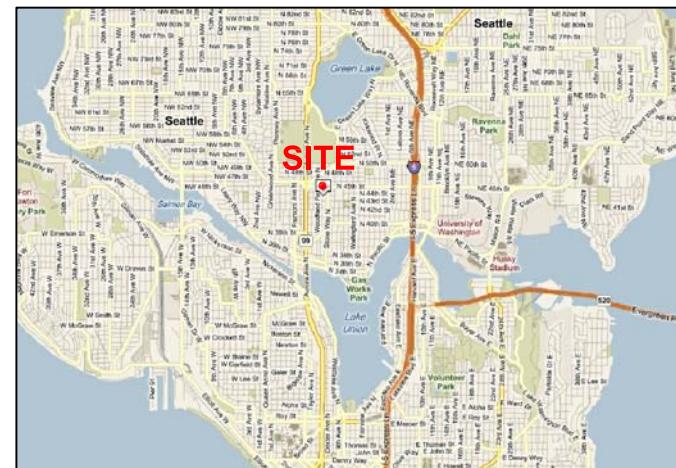
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Site history and background information provided in this technical document are based on sources that may include interviews with environmental regulatory agencies and property management personnel and a review of acquired environmental regulatory agency documents and property information obtained from CEMC and others. Leidos has not made, nor has it been asked to make, any independent investigation concerning the accuracy, reliability, or completeness of such information beyond that described in this technical document.

Recognizing reasonable limits of time and cost, this technical document cannot wholly eliminate uncertainty regarding the vertical and lateral extent of impacted environmental media.

Opinions and recommendations presented in this technical document apply only to site conditions and features as they existed at the time of Leidos site visits or site work and cannot be applied to conditions and features of which Leidos is unaware and has not had the opportunity to evaluate.

All sources of information on which Leidos has relied in making its conclusions (including direct field observations) are identified by reference in this technical document or in appendices attached to this technical document. Any information not listed by reference or in appendices has not been evaluated or relied upon by Leidos in the context of this technical document. The conclusions, therefore, represent our professional opinion based on the identified sources of information.



Maps Provided by Seattle.gov

Former Standard Oil Service Station
Chevron No. 209335
1225 North 45th Street
Seattle, Washington

FIGURE 1
Vicinity Map

FILE NAME:
209335 Vicinity Map.dwg

DATE:

8/7/2014

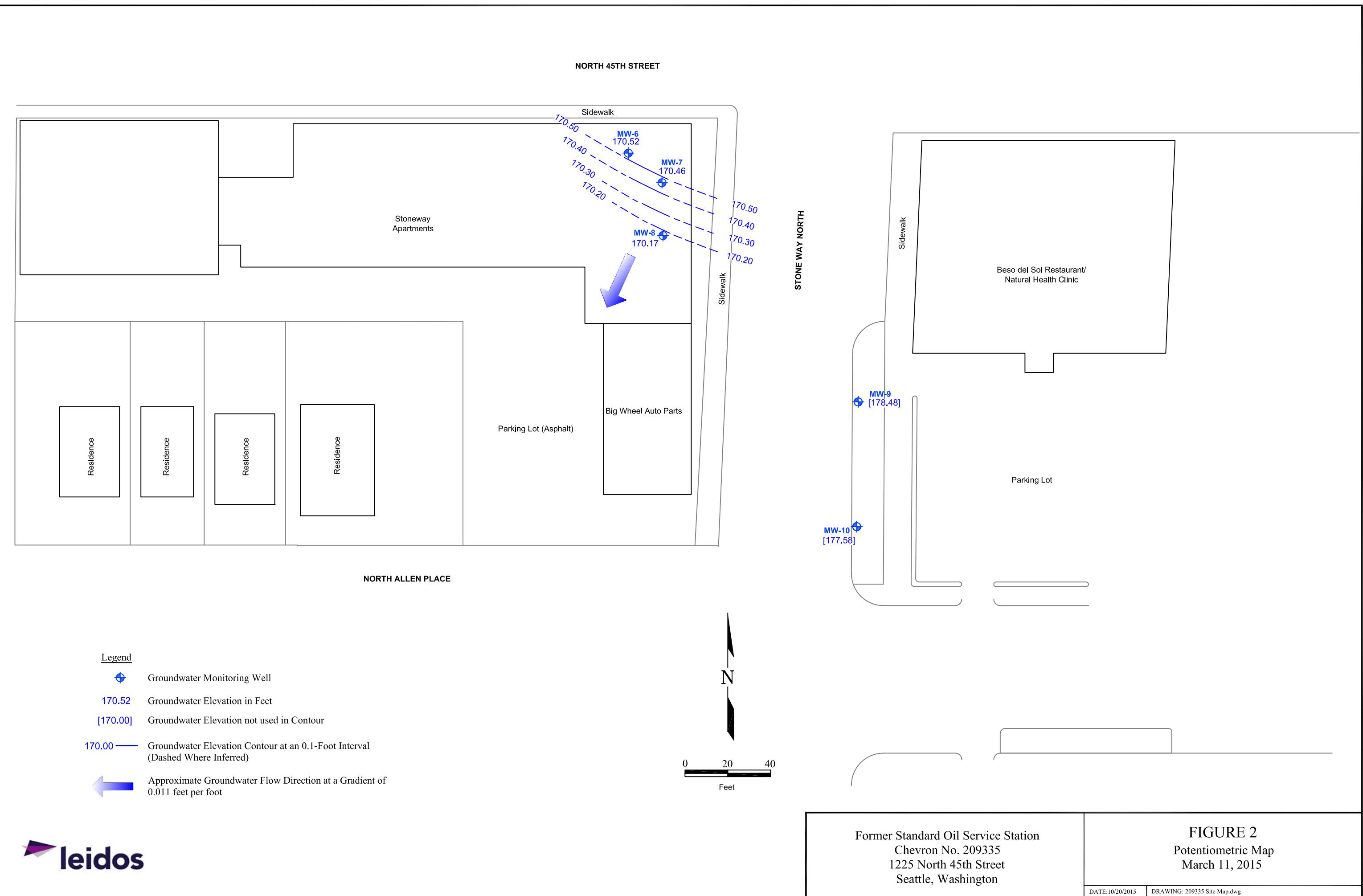


TABLE 1
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS¹
FORMER STANDARD OIL SERVICE STATION, CHEVRON SITE NO. 209335
1225 North 45th Street
Seattle, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC ² (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE ³ (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE	Total Lead
MW-1															
10/11/00		97.95	--	34.50	--	63.45	--	--	--	--	--	--	--	--	--
12/16/00		97.95	--	35.91	0.00	62.04	ND	ND	74.4	ND	ND	ND	ND	ND	ND
03/26/01		97.95	--	36.54	0.00	61.41	ND	ND	ND	ND	ND	ND	ND	ND	--
06/25/01		97.95	--	36.78	0.00	61.17	<281	<842	<50.0	<0.500	<0.500	<0.500	<1.00	--	--
09/24/01		97.95	--	37.14	0.00	60.81	<250	<500	<50.0	<0.500	<0.500	<0.500	<1.00	--	--
12/13/01		97.95	--	37.25	0.00	60.70	<250	<500	<80.0	<0.500	<0.500	<0.500	<1.00	--	--
03/08/02	NP	97.95	--	36.79	0.00	61.16	<250	<750	<50	<0.50	<0.50	<0.50	<1.5	--	--
05/29/02		97.95	--	36.44	0.00	61.51	SAMPLED SEMIANNUALLY			--	--	--	--	--	--
09/16/02	NP	97.95	--	36.71	0.00	61.24	<250	<250	<50	<0.50	<0.50	<0.50	<1.5	--	--
12/05/02		97.95	--	37.09	0.00	60.86	SAMPLED SEMIANNUALLY			--	--	--	--	--	--
03/04/03	NP	97.95	--	37.26	0.00	60.69	<250	<250	100	<0.50	<0.50	<0.50	<3.0	--	--
06/03/03		97.95	--	37.09	0.00	60.86	SAMPLED SEMI-ANNUALLY			--	--	--	--	--	--
10/27/03		97.95	--	37.42	0.00	60.53	NOT SAMPLED DUE TO INSUFFICIENT WATER			--	--	--	--	--	--
03/31/04	NP	97.95	--	37.12	0.00	60.83	<800	<1,000	<50	<0.5	<0.5	<0.5	<1.5	--	--
06/28/04		97.95	--	37.14	0.00	60.81	SAMPLED SEMIANNUALLY			--	--	--	--	--	--
09/29/04		97.95	--	37.50	0.00	60.45	NOT SAMPLED DUE TO INSUFFICIENT WATER			--	--	--	--	--	--
01/04/05		97.95	--	37.61	0.00	60.34	SAMPLED SEMIANNUALLY			--	--	--	--	--	--
ABANDONED															
MW-2															
10/11/00		98.70	--	34.50	--	64.20	--	--	--	--	--	--	--	--	--
12/16/00		98.70	--	36.46	0.00	62.24	1,000	ND	28,100	283	2,560	693	4,020	ND	0.00194
03/26/01		98.70	--	37.12	0.00	61.58	1,180	ND	17,000	143	1,450	378	2,180	ND	--
06/25/01		98.70	--	37.37	0.00	61.33	418	<750	11,700	92.3	547	181	1,010	--	--
09/24/01		98.70	--	37.72	0.00	60.98	4,840	<557	22,100	120	1,380	658	4,100	--	--
12/13/01		98.70	--	37.89	0.00	60.81	5,540	<500	84,000	185	3,960	1,590	9,950	--	--
03/08/02		98.70	37.24	38.00	0.76	61.31	NOT SAMPLED DUE TO THE PRESENCE OF SPH			--	--	--	--	--	--
05/29/02		98.70	36.81	37.54	0.73	61.74	NOT SAMPLED DUE TO THE PRESENCE OF SPH			--	--	--	--	--	--
09/16/02		98.70	37.19	37.61	0.42	61.43	NOT SAMPLED DUE TO THE PRESENCE OF SPH			--	--	--	--	--	--
10/15/02		98.70	37.24	37.68	0.44	61.37	--	--	--	--	--	--	--	--	--
11/22/02		98.70	37.12	37.63	0.51	61.48	--	--	--	--	--	--	--	--	--
12/05/02		98.70	37.51	38.10	0.59	61.07	NOT SAMPLED DUE TO THE PRESENCE OF SPH			--	--	--	--	--	--
01/28/03		98.70	36.77	37.33	0.56	61.82	--	--	--	--	--	--	--	--	--
02/13/03		98.70	37.44	38.02	0.58	61.14	--	--	--	--	--	--	--	--	--
03/04/03		98.70	INACCESSIBLE - VEHICLE PARKED OVER WELL					--	--	--	--	--	--	--	--

TABLE 1
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS¹
FORMER STANDARD OIL SERVICE STATION, CHEVRON SITE NO. 209335
1225 North 45th Street
Seattle, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC ² (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE ³ (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE	Total Lead
MW-2 (cont.)															
04/21/03		98.70	37.21	37.78	0.57	61.38	--	--	--	--	--	--	--	--	--
05/08/03		98.70	37.43	37.94	0.51	61.17	--	--	--	--	--	--	--	--	--
06/03/03		98.70	37.37	37.91	0.54	61.22	NOT SAMPLED DUE TO THE PRESENCE OF SPH				--	--	--	--	--
07/06/03		98.70	36.96	37.51	0.55	61.63	--	--	--	--	--	--	--	--	--
08/18/03		98.70	37.49	38.02	0.53	61.10	--	--	--	--	--	--	--	--	--
10/27/03		98.70	37.54	39.98	2.44	60.67	NOT SAMPLED DUE TO THE PRESENCE OF SPH				--	--	--	--	--
11/17/03		98.70	37.10	37.58	0.48	61.50	--	--	--	--	--	--	--	--	--
12/31/03		98.70	36.18	38.19	2.01	62.12	--	--	--	--	--	--	--	--	--
02/09/04		98.70	37.00	37.49	0.49	61.60	--	--	--	--	--	--	--	--	--
03/04/04		98.70	35.85	37.06	1.21	62.61	--	--	--	--	--	--	--	--	--
03/31/04		98.70	37.32	39.05	1.73	61.03	NOT SAMPLED DUE TO THE PRESENCE OF SPH				--	--	--	--	--
06/28/04		98.70	37.32	39.05	1.73	61.03	NOT SAMPLED DUE TO THE PRESENCE OF SPH				--	--	--	--	--
09/11/04		98.70	37.65	39.10	1.45	60.76	--	--	--	--	--	--	--	--	--
09/29/04		98.70	37.71	39.39	1.68	60.65	NOT SAMPLED DUE TO THE PRESENCE OF SPH				--	--	--	--	--
11/22/04		98.70	36.89	38.16	1.27	61.56	--	--	--	--	--	--	--	--	--
01/04/05		98.70	37.88	39.80	1.92	60.44	NOT SAMPLED DUE TO THE PRESENCE OF SPH				--	--	--	--	--
01/14/05		98.70	37.49	39.02	1.53	60.90	--	--	--	--	--	--	--	--	--
ABANDONED															
10/11/00		98.76	--	34.00	--	64.76	--	--	--	--	--	--	--	--	--
12/16/00		98.76	--	36.39	0.00	62.37	ND	ND	ND	ND	0.612	ND	1.95	ND	ND
03/26/01		98.76	--	37.05	0.00	61.71	ND	ND	ND	ND	ND	ND	ND	ND	--
06/25/01		98.76	--	37.29	0.00	61.47	<250	<750	<50.0	<0.500	<0.500	<0.500	<0.500	<1.00	--
09/24/01		98.76	--	37.64	0.00	61.12	<250	<500	<50.0	<0.500	<0.500	<0.500	<0.500	<1.00	--
12/13/01		98.76	--	37.78	0.00	60.98	<250	<500	<80.0	<0.500	<0.500	<0.500	<0.500	<1.00	--
03/08/02	NP	98.76	--	37.28	0.00	61.48	<250	<750	320	<0.50	0.64	2.1	15	--	--
05/29/02		98.76	--	36.92	0.00	61.84	SAMPLED SEMIANNUALLY				--	--	--	--	--
09/16/02	NP	98.76	--	37.21	0.00	61.55	<250	<250	<50	<0.50	<0.50	<0.50	<1.5	--	--
12/05/02		98.76	--	37.58	0.00	61.18	SAMPLED SEMIANNUALLY				--	--	--	--	--
03/04/03	NP	98.76	--	37.79	0.00	60.97	<250	<250	<50	<0.50	<0.50	<0.50	<1.5	--	--
06/03/03		98.76	--	37.68	0.00	61.08	SAMPLED SEMIANNUALLY				--	--	--	--	--
10/27/03	NP	98.76	--	38.00	0.00	60.76	<250	<250	<50	<0.5	<0.5	<0.5	<1.5	--	--
03/31/04	NP	98.76	--	37.65	0.00	61.11	<800	<1,000	<50	<0.5	<0.5	<0.5	<1.5	--	--

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MW-3 (cont.)															
06/28/04		98.76	--	37.68	0.00	61.08	SAMPLED SEMIANNUALLY			--	--	--	--	--	--
09/29/04	NP	98.76	--	38.01	0.00	60.75	<250	<250	<50	<0.5	<0.5	<0.5	<1.5	--	--
01/04/05		98.76	--	38.19	0.00	60.57	SAMPLED SEMIANNUALLY			--	--	--	--	--	--
ABANDONED															
MW-4															
10/11/00		98.52	--	35.00	--	63.52	--	--	--	--	--	--	--	--	--
12/16/00		98.52	--	36.35	0.00	62.17	ND	ND	58,200	326	5,520	1,430	8,520	ND	0.0123
03/26/01		98.52	--	37.00	0.00	61.52	266	ND	27,200	178	2,160	785	4,160	ND	--
06/25/01		98.52	--	37.25	0.00	61.27	<250	<750	12,300	69.0	654	416	1,910	--	--
09/24/01		98.52	--	37.60	0.00	60.92	<250	<500	4,130	30.1	154	197	684	--	--
12/13/01		98.52	--	37.72	0.00	60.80	<250	<500	5,490	30.3	175	177	679	--	--
03/08/02	NP	98.52	--	38.36	0.00	60.16	<250	<750	9,000	<50	150	170	710	--	--
05/29/02	NP	98.52	--	36.86	0.00	61.66	<250	<750	6,700	22	150	190	780	--	--
08/07/02		98.52	--	36.92	0.00	61.60	--	--	--	--	--	--	--	--	--
09/16/02	NP	98.52	--	37.16	0.00	61.36	<250	<250	7,500	46	230	240	630	--	--
12/05/02	NP	98.52	--	37.53	0.00	60.99	<250	<250	14,000	73	400	540	1,500	--	--
03/04/03		98.52	36.68	36.71	0.03	61.83	NOT SAMPLED DUE TO THE PRESENCE OF SPH				--	--	--	--	--
06/03/03		98.52	36.59	36.63	0.04	61.92	NOT SAMPLED DUE TO THE PRESENCE OF SPH				--	--	--	--	--
07/06/03		98.52	36.90	36.93	0.03	61.61	--	--	--	--	--	--	--	--	--
08/18/03		98.52	36.76	36.80	0.04	61.75	--	--	--	--	--	--	--	--	--
10/27/03	NP	98.52	--	37.96	0.00	60.56	<400	<500	2,200	16	55	76	170	--	--
11/17/03		98.52	36.34	36.37	0.03	62.17	--	--	--	--	--	--	--	--	--
12/31/03		98.52	--	36.88	0.00	61.64	--	--	--	--	--	--	--	--	--
02/09/04		98.52	36.14	36.17	0.03	62.37	--	--	--	--	--	--	--	--	--
03/04/04		98.52	--	36.74	0.00	61.78	--	--	--	--	--	--	--	--	--
03/31/04	NP	98.52	--	37.59	0.00	60.93	<250	<250	3,900	14	96	110	340	--	--
06/28/04	NP	98.52	--	37.54	0.00	60.98	<250	<250	1,600	8.5	15	59	110	--	--
09/11/04		98.52	37.78	37.81	0.03	60.73	--	--	--	--	--	--	--	--	--
09/29/04	NP	98.52	--	37.86	0.00	60.66	<250	<250	1,500	18	40	76	170	--	--
11/22/04		98.52	--	36.81	0.00	61.71	--	--	--	--	--	--	--	--	--
01/04/05	NP	98.52	--	38.11	0.00	60.41	1,600	<250	1,600	10	13	60	110	--	--
01/14/05		98.52	--	37.58	0.00	60.94	--	--	--	--	--	--	--	--	--
ABANDONED															

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Well ID/ Date	Purge Method	TOC ² (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE ³ (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE	Total Lead			
MW-5																		
10/11/00		99.42	--	34.50	--	64.92	--	--	--	--	--	--	--	--	--			
12/16/00		99.42	--	37.18	0.00	62.24	5,080	ND	146,000	ND	15,100	4,160	24,100	ND	0.0200			
03/26/01		99.42	--	37.91	0.00	61.51	77,900	ND	149,000	256	10,600	4,000	24,200	ND	--			
06/25/01		99.42	--	38.14	0.00	61.28	109,000	<18,100	127,000	210	9,580	3,730	21,500	--	--			
09/24/01		99.42	38.40	38.44	0.04	61.01	NOT SAMPLED DUE TO THE PRESENCE OF SPH						--	--	--			
12/13/01		99.42	38.55	38.59	0.04	60.86	NOT SAMPLED DUE TO THE PRESENCE OF SPH						--	--	--			
03/08/02		99.42	37.96	38.46	0.50	61.36	NOT SAMPLED DUE TO THE PRESENCE OF SPH						--	--	--			
05/29/02		99.42	37.60	38.05	0.45	61.73	NOT SAMPLED DUE TO THE PRESENCE OF SPH						--	--	--			
08/07/02		99.42	37.73	38.12	0.39	61.61	--	--	--	--	--	--	--	--	--			
09/16/02		99.42	38.00	38.39	0.39	61.34	NOT SAMPLED DUE TO THE PRESENCE OF SPH						--	--	--			
10/15/02		99.42	38.09	38.47	0.38	61.25	--	--	--	--	--	--	--	--	--			
11/22/02		99.42	37.84	38.26	0.42	61.50	--	--	--	--	--	--	--	--	--			
12/05/02		99.42	38.42	38.78	0.36	60.93	NOT SAMPLED DUE TO THE PRESENCE OF SPH						--	--	--			
01/28/03		99.42	37.88	38.24	0.36	61.47	--	--	--	--	--	--	--	--	--			
02/13/03		99.42	38.33	38.68	0.35	61.02	--	--	--	--	--	--	--	--	--			
03/04/03		99.42	37.54	37.89	0.35	61.81	NOT SAMPLED DUE TO THE PRESENCE OF SPH						--	--	--			
04/21/03		99.42	37.96	38.29	0.33	61.39	--	--	--	--	--	--	--	--	--			
05/08/03		99.42	38.50	38.82	0.32	60.86	--	--	--	--	--	--	--	--	--			
06/03/03		99.42	37.42	37.76	0.34	61.93	NOT SAMPLED DUE TO THE PRESENCE OF SPH						--	--	--			
07/06/03		99.42	37.77	38.11	0.34	61.58	--	--	--	--	--	--	--	--	--			
08/18/03		99.42	38.54	38.86	0.32	60.82	--	--	--	--	--	--	--	--	--			
10/27/03		99.42	WELL DRY/OBSTRUCTED			--	--	--	--	--	--	--	--	--	--			
11/17/03		99.42	37.87	38.17	0.30	61.49	--	--	--	--	--	--	--	--	--			
12/31/03		99.42	WELL DRY/OBSTRUCTED			--	--	--	--	--	--	--	--	--	--			
02/09/04		99.42	WELL DRY/OBSTRUCTED			--	--	--	--	--	--	--	--	--	--			
03/04/04		99.42	WELL DRY/OBSTRUCTED			--	--	--	--	--	--	--	--	--	--			
03/31/04		99.42	WELL DRY/OBSTRUCTED			--	--	--	--	--	--	--	--	--	--			
06/28/04		99.42	WELL DRY/OBSTRUCTED			--	--	--	--	--	--	--	--	--	--			
09/11/04		99.42	WELL DRY/OBSTRUCTED			--	--	--	--	--	--	--	--	--	--			
09/29/04		99.42	WELL DRY/OBSTRUCTED			--	--	--	--	--	--	--	--	--	--			
11/22/04		99.42	WELL DRY/OBSTRUCTED			--	--	--	--	--	--	--	--	--	--			
01/04/05		99.42	WELL DRY/OBSTRUCTED			--	--	--	--	--	--	--	--	--	--			
01/14/05		99.42	WELL DRY/OBSTRUCTED			--	--	--	--	--	--	--	--	--	--			
ABANDONED																		
MW-6																		
02/09/06		197.18	--	36.74	0.00	160.44	680	98	1,500	<0.5	0.7	1.2	37	--	--			
05/03/07		197.18	--	36.74	0.00	160.44	1,000	130	380	29	1	4	30	--	--			

TABLE 1
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS⁴
FORMER STANDARD OIL SERVICE STATION, CHEVRON SITE NO. 209335
1225 North 45th Street
Seattle, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC ² (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE ³ (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE	Total Lead
MW-6 (cont.)															
06/16/09		197.18	INACCESSIBLE	--	--	--	--	--	--	--	--	--	--	--	--
07/01/09	NP	197.18	--	27.46	0.00	169.72	270	<70	<50	<0.5	<0.5	<0.5	<1.5	--	22.9
12/11/09	NP	197.18	--	27.55	0.00	169.63	35	<69	<50	<0.5	<0.5	<0.5	<1.5	--	0.76
06/09/10	NP	197.18	--	26.84	0.00	170.34	360	<340	5,900	<0.5	<0.5	<0.5	350	--	13.2
11/19/10	NP	197.18	--	26.97	0.00	170.21	240	81	750	<0.5	<0.5	<0.5	11	--	3.7
06/21/11	NP	197.18	--	25.77	0.00	171.41	270	88	2,400	<0.5	<0.5	0.6	9.2	--	3.2
09/22/11	NP	197.18	--	25.90	0.00	171.28	<29	<69	660	<0.5	<0.5	<0.5	4.1	--	3.3
12/09/11	NP	197.18	--	27.34	0.00	169.84	<29	<69	64	140	0.5	<0.5	<1.5	--	0.44
03/30/12	NP	197.18	--	26.80	0.00	170.38	<30	<69	90	<0.5	<0.5	<0.5	<1.5	--	2.5
06/20/12	NP	197.18	--	26.56	0.00	170.62	<30	<70	<50	<0.5	<0.5	<0.5	<1.5	--	<0.034
10/05/12	NP	197.18	--	27.08	0.00	170.10	<32	<74	<50	<0.5	<0.5	<0.5	<1.5	--	1.2
12/27/12	NP	197.18	--	27.13	0.00	170.05	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	--	2.0
03/18/13 ⁸		197.18	--	26.63	0.00	170.55	<30	<71	120	<0.5	<0.5	<0.5	<1.5	--	--
03/22/13 ⁹		197.18	--	26.71	0.00	170.47	<31	<72	100	<0.5	<0.5	<0.5	<1.5	--	--
03/28/13	NP	197.18	--	26.61	0.00	170.57	<29	<67	79	<0.5	<0.5	<0.5	<1.5	--	3.7
06/27/13	NP	197.18	--	26.42	0.00	170.76	<29	<68	120	<0.5	<0.5	<0.5	<1.5	--	1.3
10/17/13	NP	197.18	--	26.64	0.00	170.54	<29	<68	<50	<0.5	<0.5	<0.5	<1.5	--	0.3
03/20/14	NP	197.18	--	26.68	0.00	170.50	<30	<70	<50	<0.5	<0.5	<0.5	<1.5	--	4.0
06/25/14	NP	197.18	--	26.85	0.00	170.33	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	--	2.1
09/24/14	NP	197.18	--	27.19	0.00	169.99	<28	<66	<50	<0.2	<0.2	<0.2	<0.2	--	0.00048
12/11/14	NP	197.18	--	27.16	0.00	170.02	<28	<66	<50	<0.5	<0.5	<0.5	<1.5	--	1.5
03/11/15	NP	197.18	--	26.66	0.00	170.52	<30	<71	<50	<0.5	0.5	<0.5	<1.5	--	0.0063
MW-7															
02/09/06		197.42	37.87	38.17	0.30	159.49	--	--	--	--	--	--	--	--	--
05/03/07		197.42	26.55	27.80	0.00	169.62	--	--	--	--	--	--	--	--	--
06/16/09		197.42	INACCESSIBLE	--	--	--	--	--	--	--	--	--	--	--	--
07/01/09 ⁶		197.42	27.39	-- ⁷	-- ⁷	-- ⁷	NOT SAMPLED DUE TO THE PRESENCE OF SPH				--	--	--	--	--
12/11/09 ⁶		197.42	27.50	-- ⁷	-- ⁷	-- ⁷	NOT SAMPLED DUE TO THE PRESENCE OF SPH				--	--	--	--	--
06/09/10 ⁶		197.42	27.03	28.20	1.17	170.16	NOT SAMPLED DUE TO THE PRESENCE OF SPH				--	--	--	--	--
11/19/10		197.42	27.08	28.34	1.26	170.09	NOT SAMPLED DUE TO THE PRESENCE OF SPH				--	--	--	--	--
06/21/11		197.42	--	26.12	0.00	171.30	11,000	<1,800	150,000	45	4,800	2,600	18,000	--	310
09/22/11		197.42	--	26.25	0.00	171.17	2,000	<340	100,000	29	4,300	1,900	17,000	--	94.4

TABLE 1
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS⁴
FORMER STANDARD OIL SERVICE STATION, CHEVRON SITE NO. 209335
1225 North 45th Street
Seattle, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC ² (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE ³ (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE	Total Lead
MW-7 (cont.)															
12/09/11		197.42	27.45	27.80	0.35	169.90	NOT SAMPLED DUE TO THE PRESENCE OF SPH			--	--	--	--	--	--
03/30/12		197.42	27.15	27.35	0.20	170.23	NOT SAMPLED DUE TO THE PRESENCE OF SPH			--	--	--	--	--	--
06/20/12		197.42	26.90	27.05	0.15	170.49	NOT SAMPLED DUE TO THE PRESENCE OF SPH			--	--	--	--	--	--
10/05/12		197.42	27.38	27.76	0.38	169.96	NOT SAMPLED DUE TO THE PRESENCE OF SPH			--	--	--	--	--	--
12/27/12		197.42	27.46	27.65	0.19	169.92	NOT SAMPLED DUE TO THE PRESENCE OF SPH			--	--	--	--	--	--
03/18/13 ⁸		197.42	27.01	27.18	0.17	170.38	NOT SAMPLED DUE TO THE PRESENCE OF SPH			--	--	--	--	--	--
03/22/13 ⁹		197.42	--	27.03	0.00	170.39	5,200	<69	99,000	12	1,600	1,700	17,000	--	--
03/28/13		197.42	26.91	27.00	0.09	170.49	NOT SAMPLED DUE TO THE PRESENCE OF SPH			--	--	--	--	--	--
06/27/13		197.42	26.77	26.79	0.02	170.65	NOT SAMPLED DUE TO THE PRESENCE OF SPH			--	--	--	--	--	--
10/17/13		197.42	27.03	27.05	0.02	170.39	NOT SAMPLED DUE TO THE PRESENCE OF SPH			--	--	--	--	--	--
03/20/14		197.42	26.99	27.11	0.12	170.41	NOT SAMPLED DUE TO THE PRESENCE OF SPH			--	--	--	--	--	--
06/25/14		197.42	27.26	27.28	0.02	170.16	NOT SAMPLED DUE TO THE PRESENCE OF SPH			--	--	--	--	--	--
09/24/14		197.42	27.56	27.61	0.05	169.85	NOT SAMPLED DUE TO THE PRESENCE OF SPH			--	--	--	--	--	--
12/11/14	NP	197.42	--	27.50	0.00	169.92	55,000	<6,900	96,000	<13	600	660	14,000	--	168
03/11/15	NP	197.42	--	26.96	0.00	170.46	200,000	<17,000	65,000	<5.0	470	570	6,700	--	0.0717
MW-8															
02/09/06		197.35	--	36.74	0.00	160.61	280	<96	440	<0.5	1.1	3.3	28	--	--
05/03/07		197.35	--	36.74	0.00	160.61	940	<200	2,600	<0.5	<0.5	<0.5	<0.5	--	--
06/16/09		197.35	INACCESSIBLE	--	--	--	--	--	--	--	--	--	--	--	--
07/01/09	NP	197.35	--	27.84	0.00	169.51	390	<700	430	<0.5	<0.5	<0.5	2.2	--	3.5
12/11/09	NP	197.35	--	27.91	0.00	169.44	300	<69	<50	<0.5	<0.5	<0.5	<1.5	--	7.3
06/09/10	NP	197.35	--	27.21	0.00	170.14	280	180	350	<0.5	<0.5	<0.5	<1.5	--	16.5
11/19/10	NP	197.35	--	27.34	0.00	170.01	320	120	94	<0.5	<0.5	<0.5	<1.5	--	3.4
06/21/11	NP	197.35	--	26.18	0.00	171.17	94	150	54	<0.5	<0.5	1.0	<1.5	--	3.6
09/22/11	NP	197.35	--	26.30	0.00	171.05	<29	<68	140	<0.5	<0.5	2.9	1.70	--	1.8
12/09/11	NP	197.35	--	27.70	0.00	169.65	70	<69	320	<2.0	<2.0	<0.5	3.0	--	0.30
03/30/12	NP	197.35	--	27.20	0.00	170.15	<30	<70	2,000	3.0	3.9	45	120	--	2.9
06/20/12	NP	197.35	--	27.00	0.00	170.35	<30	<70	170	0.7	0.7	1.3	2.2	--	1.8
10/05/12	NP	197.35	--	27.49	0.00	169.86	<31	<71	490	1.0	1.7	19	32	--	1.3
12/27/12	NP	197.35	--	27.49	0.00	169.86	<29	<68	280	0.6	0.7	4.7	6.8	--	1.1
03/18/13 ⁸		197.35	--	27.06	0.00	170.29	<30	<70	320	<0.5	<0.5	29	22	--	--
03/22/13 ⁹		197.35	--	27.13	0.00	170.22	<29	<68	360	<0.5	<0.5	29	22	--	--
03/28/13	NP	197.35	--	27.09	0.00	170.26	<29	<67	80	<0.5	<0.5	<0.5	<1.5	--	1.9

TABLE 1
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS¹
FORMER STANDARD OIL SERVICE STATION, CHEVRON SITE NO. 209335
1225 North 45th Street
Seattle, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC ² (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE ³ (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE	Total Lead
MW-8 (cont.)															
06/27/13	NP	197.35	--	26.86	0.00	170.49	<30	<69	<50	<0.5	<0.5	<0.5	<1.5	--	2.0
10/17/13	NP	197.35	--	27.05	0.00	170.30	<29	<68	<50	<0.5	<0.5	<0.5	<1.5	--	0.4
03/20/14	NP	197.35	--	27.01	0.00	170.34	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	--	1.4
06/25/14	NP	197.35	--	27.31	0.00	170.04	<30	<69	<50	<0.5	<0.5	<0.5	<1.5	--	0.24
09/24/14	NP	197.35	--	27.63	0.00	169.72	<29	<67	93	<0.2	<0.2	2.9	1	--	0.00013
12/11/14	NP	197.35	--	27.46	0.00	169.89	<30	<70	59	<0.5	0.5	0.6	<1.5	--	0.12
03/11/15	NP	197.35	--	27.18	0.00	170.17	<29	<68	<50	<0.5	<0.5	<0.5	<1.5	--	0.00032
MW-9															
05/03/07		208.11	--	36.74	0.00	171.37	<400	<500	<50	<0.5	<0.5	4	18	--	--
06/16/09		208.11	--	38.72	0.00	169.39	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	19.3
07/01/09	NP	208.11	--	38.03	0.00	170.08	<31	<71	--	--	--	--	--	--	--
12/11/09	NP	208.11	--	38.86	0.00	169.25	76	<69	<50	<0.5	<0.5	<0.5	<1.5	--	14.5
06/09/10	NP	208.11	--	38.17	0.00	169.94	42	110	<50	<0.5	<0.5	<0.5	<1.5	--	21.2
11/19/10	NP	208.11	--	38.23	0.00	169.88	<29	130	<50	<0.5	<0.5	<0.5	<1.5	--	18.7
06/21/11	NP	208.11	--	37.15	0.00	170.96	<30	<70	<50	<0.5	<0.5	<0.5	<1.5	--	4.7
09/22/11	NP	208.11	--	37.25	0.00	170.86	<300	<700	<50	<0.5	<0.5	<0.5	<1.5	--	12.4
12/09/11	NP	208.11	--	38.66	0.00	169.45	<29	<68	<50	<0.5	<0.5	<0.5	<1.5	--	2.8
03/30/12	NP	208.11	--	29.60	0.00	178.51	<29	<68	<50	<0.5	<0.5	<0.5	<1.5	--	114
06/20/12	NP	208.11	--	38.00	0.00	170.11	<30	<70	<50	<0.5	<0.5	<0.5	<1.5	--	3.8
10/05/12	NP	208.11	--	38.44	0.00	169.67	<30	<70	<50	<0.5	<0.5	<0.5	<1.5	--	10.6
12/27/12	NP	208.11	--	38.50	0.00	169.61	<31	<73	<50	<0.5	<0.5	<0.5	<1.5	--	5.3
03/28/13	NP	208.11	--	29.73	0.00	178.38	<28	<66	<50	<0.5	<0.5	<0.5	<1.5	--	<0.073
06/27/13	NP	208.11	--	37.81	0.00	170.30	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	--	5.4
10/17/13	NP	208.11	--	37.77	0.00	170.34	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	--	0.34
03/20/14	NP	208.11	--	29.58	0.00	178.53	<29	<68	<50	<0.5	<0.5	<0.5	<1.5	--	4.1
06/25/14	NP	208.11	--	34.92	0.00	173.19	<30	<69	<50	<0.5	<0.5	<0.5	<1.5	--	2.5
09/24/14	NP	208.11	--	38.56	0.00	169.55	<29	<67	<50	<0.2	<0.2	<0.2	<0.2	--	0.0015
12/11/14	NP	208.11	--	38.53	0.00	169.58	<28	<66	<50	<0.5	<0.5	<0.5	<1.5	--	<0.082
03/11/15	NP	208.11	--	29.63	0.00	178.48	<28	<66	<50	<0.5	0.5	<0.5	<1.5	--	0.00020
MW-10															
05/03/07		207.29	--	36.74	0.00	170.55	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
06/16/09		207.29	INACCESSIBLE	--	--	--	--	--	--	--	--	--	--	--	--
07/01/09	NP	207.29	--	38.72	0.00	168.57	<30	<69	<50	<0.5	<0.5	<0.5	<1.5	--	10.9
12/11/09	NP	207.29	--	35.91	0.00	171.38	49	<69	<50	<0.5	<0.5	<0.5	<1.5	--	13.4
06/09/10	NP	207.29	--	37.48	0.00	169.81	50	88	<50	<0.5	<0.5	<0.5	<1.5	--	7.2

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FORMER STANDARD OIL SERVICE STATION, CHEVRON SITE NO. 209335
1225 North 45th Street
Seattle, Washington
Concentrations reported in µg/L

Well ID/ Date	Purge Method	TOC ² (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE ³ (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE	Total Lead
MW-10 (cont.)															
11/19/10	NP	207.29	--	37.53	0.00	169.76	<29	74	<50	<0.5	<0.5	<0.5	<1.5	--	18.8
06/21/11	NP	207.29	--	36.46	0.00	170.83	<31	180	<50	<0.5	<0.5	<0.5	<1.5	--	5.7
09/22/11	NP	207.29	--	36.60	0.00	170.69	<300	<700	<50	<0.5	<0.5	<0.5	<1.5	--	6.6
12/09/11	NP	207.29	--	35.71	0.00	171.58	<29	<69	<50	<0.5	<0.5	<0.5	<1.5	--	2.1
03/30/12	NP	207.29	--	29.80	0.00	177.49	<30	<69	<50	<0.5	<0.5	<0.5	<1.5	--	110
06/20/12	NP	207.29	--	37.35	0.00	169.94	<31	<71	<50	<0.5	<0.5	<0.5	<1.5	--	0.23
10/05/12	NP	207.29	--	37.79	0.00	169.50	45	<70	<50	<0.5	<0.5	<0.5	<1.5	--	3.7
12/27/12	NP	207.29	--	37.84	0.00	169.45	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	--	2.2
03/28/13	NP	207.29	--	27.36	0.00	179.93	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	--	<0.073
06/27/13	NP	207.29	--	37.16	0.00	170.13	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	--	1.8
10/17/13	NP	207.29	--	37.78	0.00	169.51	<28	<66	<50	<0.5	<0.5	<0.5	<1.5	--	0.34
03/20/14	NP	207.29	--	29.77	0.00	177.52	<30	<69	<50	<0.5	<0.5	<0.5	<1.5	--	<0.085
06/25/14	NP	207.29	--	35.03	0.00	172.26	<30	<71	<50	<0.5	<0.5	<0.5	<1.5	--	2.5
09/24/14	NP	207.29	--	37.88	0.00	169.41	<30	<70	<50	<0.2	<0.2	<0.2	<0.2	--	0.00095
12/11/14	NP	207.29	--	37.88	0.00	169.41	<29	<67	<50	<0.5	<0.5	<0.5	<1.5	--	<0.082
03/11/15	NP	207.29	--	29.71	0.00	177.58	<29	<69	<50	<0.5	<0.5	<0.5	<1.5	--	0.00020
QA															
12/16/00		--	--	--	--	--	--	--	ND	ND	ND	ND	ND	ND	--
03/26/01		--	--	--	--	--	--	--	ND	ND	ND	ND	ND	ND	--
06/25/01		--	--	--	--	--	--	--	<50.0	<0.500	<0.500	<0.500	<0.500	<1.00	--
09/24/01		--	--	--	--	--	--	--	<50.0	<0.500	<0.500	<0.500	<0.500	<1.00	--
12/13/01		--	--	--	--	--	--	--	<80.0	<0.500	<0.500	<0.500	<0.500	<1.00	--
03/08/02		--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	--	--
05/29/02		--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	--	--
09/16/02		--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	--	--
12/05/02		--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	--	--
03/04/03		--	--	--	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	--	--
10/27/03		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
03/31/04		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
06/28/04		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
09/29/04		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
01/04/05		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
06/16/09		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
07/01/09		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
12/11/09		--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--

TABLE 1
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS¹
FORMER STANDARD OIL SERVICE STATION, CHEVRON SITE NO. 209335
1225 North 45th Street
Seattle, Washington
Concentrations reported in $\mu\text{g/L}$

Well ID/ Date	Purge Method	TOC ² (ft.)	DTP (ft.)	DTW (ft.)	SPHT (ft.)	GWE ³ (ft.)	TPH-DRO	TPH-HRO	TPH-GRO	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE	Total Lead
QA (cont.)															
06/09/10	--	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
11/19/10	--	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
06/21/11	--	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
09/22/11	--	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
12/09/11	--	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
03/30/12	--	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
06/20/12	QA Vials Not Received by the Laboratory														
10/05/12	--	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
12/27/12	--	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
03/28/13	--	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
06/27/13	--	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
10/17/13	--	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
03/20/14	--	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
06/25/14	--	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
09/24/14	--	--	--	--	--	--	--	--	<50	<0.2	<0.2	<0.2	<0.2	--	--
12/11/14	--	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
03/11/15	--	--	--	--	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
MTCA Method A Cleanup Levels:						500	500	800/1,000	5	1,000	700	1,000	20	15	
Current Method ⁵ : NWTPH-Dx + Extended ⁴ NWTPH-Gx															USEPA 6020

Abbreviations:

DTP = Depth to Product
DTW = Depth to Water
ft. = Feet
GWE = Groundwater Elevation
MTBE = Methyl Tertiary Butyl Ether
MTCA = Model Toxics Control Act
ND = Not Detected

NP = No Purge
QA = Quality Assurance/Trip Blank
SPH = Separate Phase Hydrocarbon
SPHT = Separate Phase Hydrocarbon Thickness
TOC = Top of Casing
TPH = Total Petroleum Hydrocarbons
TPH-DRO = TPH as Diesel-Range Organics

TPH-GRO = TPH as Gasoline-Range Organics
TPH-HRO = TPH as Heavy Oil-Range Organics
USEPA = United States Environmental Protection Agency
 $\mu\text{g/L}$ = Micrograms per liter
-- = Not Measured/Not Analyzed

Notes:

- 1 Analytical results in bold font indicate concentrations exceed MTCA Method A Cleanup Levels.
- 2 TOC elevations have been surveyed in feet relative to the 1988 North American Vertical Datum. MW-1 through MW-5 TOC elevations are reference to an arbitrary benchmark of 100 feet.
- 3 When SPH is present, GWE has been corrected using the following formula: $\text{GWE} = [(\text{TOC} - \text{DTW}) + (\text{SPHT} \times 0.80)]$.
- 4 Analyzed with silica-gel cleanup.
- 5 Laboratory analytical methods for historical data may not be consistent with list of current analytical methods. When necessary, consult original laboratory reports to verify methods used.
- 6 Skimmer in well.
- 7 Interface probe could not detect SPH/Groundwater Interface, unable to gauge hydrocarbon thickness and calculate corrected GWE.
- 8 Pre-surfactant injection groundwater sample.
- 9 Post-surfactant extraction groundwater sample.

Attachment A:
Groundwater Monitoring and Sampling Data Package



GETTLER-RYAN INC.

TRANSMITTAL

March 20, 2015
G-R #386750

TO: Ms. Ruth A. Otteman
Leidos, Inc.
18912 North Creek Parkway, Suite 101
Bothell, WA 98011

FROM: Deanna L. Harding
Project Coordinator
Gettler-Ryan Inc.
6805 Sierra Court, Suite G
Dublin, California 94568

RE: Former Chevron Service Station
#209335
1225 North 45th Street
Seattle, Washington

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DESCRIPTION
VIA PDF	Groundwater Monitoring and Sampling Data Package First Semi-Annual Event of March 11, 2015

COMMENTS:

Pursuant to your request, we are providing you with copies of the above referenced data for your use.

Please provide us the updated historical data prior to the next monitoring and sampling event for our field use.

Please feel free to contact me if you have any comments/questions.

trans/209335



GETTLER-RYAN INC.

CHEVRON - SITE CHECK LIST

Facility#: **Chevron #209335**

Date:

Address: 1225 N. 45th Street

City/St.: Seattle, WA

Status of Site: STONEWAY APARTMENTS

DRUMS:

*Please list below ALL DRUMS on site:
(i.e., drum description, condition, labeling, contents and location of drums)*

#	Description	Condition	Labeling	Contents/Capacity	Location
	No Drums				

WELLS:

Please check the condition of ALL WELLS on site:

(i.e., gaskets, bolts, replaced well plug and/or well lock, well box condition and etc.)

Additional Comments/Observations:

STANDARD OPERATING PROCEDURE - GROUNDWATER SAMPLING

Gettler-Ryan Inc. (GR) field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. All work is performed in accordance with the GR Health & Safety Plan and all client-specific programs. The scope of work and type of analysis to be performed is determined prior to commencing field work.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using an interface probe. Product thickness, if present, is measured to the nearest 0.01 foot and is noted in the field notes. In addition, all depth to water level measurements are collected with a static water level indicator and are also recorded in the field notes, prior to purging and sampling any wells.

After water levels are collected and prior to sampling, if purging is to occur, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, peristaltic or Grundfos), or disposable bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during the purging (additional parameters such as dissolved oxygen, oxidation reduction potential, turbidity may also be measured, depending on specific scope of work.). Purging continues until these parameters stabilize. Purge water is treated by filtering the water through granular activated carbon and is subsequently discharged to the ground surface at the site.

Groundwater samples are collected using disposable bailers. The water samples are transferred from the bailer into appropriate containers. Pre-preserved containers, supplied by analytical laboratories, are used. When pre-preserved containers are not available, the laboratory is instructed to preserve the sample as appropriate. Duplicate samples are collected for the laboratory to use in maintaining quality assurance/quality control standards, as directed by the scope of work. The samples are labeled to include the job number, sample identification, collection date and time, analysis, preservation (if any), and the sample collector's initials. The water samples are placed in a cooler, maintained at 4°C for transport to the laboratory. Once collected in the field, all samples are maintained under chain of custody until delivered to the laboratory.

The chain of custody document includes the job number, type of preservation, if any, analysis requested, sample identification, date and time collected, and the sample collector's name. The chain of custody is signed and dated (including time of transfer) by each person who receives or surrenders the samples, beginning with the field personnel and ending with the laboratory personnel.

A laboratory supplied trip blank accompanies each sampling set. The trip blank is analyzed for some or all of the same compounds as the groundwater samples.



GETTLER - RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Chevron #209335**
 Site Address: **1225 N. 45th Street**
 City: **Seattle, WA**

Job Number: **386750**
 Event Date: **3.11.15** (inclusive)
 Sampler: **SP**

Well ID: **MW-10** Date Monitored: **3.11.15**
 Well Diameter: **2** in.
 Total Depth: **31.1** ft.
 Depth to Water: **11.66** ft.
7.45 xVF **—** = **—** x3 case volume = Estimated Purge Volume: **—** gal.
 Check if water column is less than 0.50 ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: **—**

Purge Equipment:
 Disposable Bailer **x**
 Stainless Steel Bailer **—**
 Stack Pump **—**
 Peristaltic Pump **—**
 QED Bladder Pump **—**
 Other: **—**

Sampling Equipment:
 Disposable Bailer **x**
 Pressure Bailer **—**
 Metal Filters **—**
 Peristaltic Pump **—**
 QED Bladder Pump **—**
 Other: **—**

Time Started:	(2400 hrs)
Time Completed:	(2400 hrs)
Depth to Product:	ft
Depth to Water:	ft
Hydrocarbon Thickness:	ft
Visual Confirmation/Description:	
Skimmer / Absorbant Sock (circle one)	
Amt Removed from Skimmer:	ltr
Amt Removed from Well:	ltr
Water Removed:	ltr
Product Transferred to:	

Start Time (purge): **0929** Weather Conditions: **Sun**
 Sample Time/Date: **0940 3.11.15** Odor: **Y/N**
 Approx. Flow Rate: **—** gpm. Sediment Description: **GREY/WHITE**
 Did well de-water? **No** If yes, Time: **—** Volume: **—** gal. DTW @ Sampling: **26.66**

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (μ S/m umhos/cm)	Temperature (C F)	D.O. (mg/L)	ORP (mV)
0935	1/4	10.39	-992	11.0		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-10	3 x voa vial	YES	HCL	LANCASTER	NWTPH-Gx/BTEX(8021)
	2 x 1 liter ambers	YES	HCL	LANCASTER	NWTPH-Dx w/sgc
	1 x 250ml poly	YES	HNO3	LANCASTER	TOTAL LEAD(6020)

COMMENTS: **—**

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Plug: _____ Add/Replaced Lock: _____



GETTLER - RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Chevron #209335**
 Site Address: **1225 N. 45th Street**
 City: **Seattle, WA**

Job Number: **386750**
 Event Date: **3. 11. 15** (inclusive)
 Sampler: **J.P.**

Well ID **MW-7**Well Diameter **2** in.Total Depth **33.53** ft.Depth to Water **26.90** ft.

Volume Factor (VF)	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

 Check if water column is less than 0.50 ft.

$$\text{Depth to Water} \times \text{VF} = \text{Purge Volume} = \text{Estimated Purge Volume: } \text{gal.}$$

$$\text{Depth to Water w/ 80\% Recharge } [(\text{Height of Water Column} \times 0.20) + \text{DTW}] = \text{gal.}$$

Purge Equipment:

Disposable Bailer
 Stainless Steel Bailer
 Stack Pump
 Peristaltic Pump
 QED Bladder Pump
 Other: _____

Sampling Equipment:

Disposable Bailer
 Pressure Bailer
 Metal Filters
 Peristaltic Pump
 QED Bladder Pump
 Other: _____

Time Started:	(2400 hrs)
Time Completed:	(2400 hrs)
Depth to Product:	ft
Depth to Water:	ft
Hydrocarbon Thickness:	ft
Visual Confirmation/Description:	
Skimmer / Absorbant Sock (circle one)	
Amt Removed from Skimmer:	ltr
Amt Removed from Well:	ltr
Water Removed:	ltr
Product Transferred to:	

Start Time (purge): **1023**Weather Conditions: **Sun**Sample Time/Date: **1035 / 3.11.15**Water Color: **clear** Odor: **Y N** **STRONG**Approx. Flow Rate: **gpm.**Sediment Description: **colley dirt**Did well de-water? **No** If yes, Time: **—** Volume: **—** gal. DTW @ Sampling: **26.90**

Time (2400 hr.)	Volume (gal.)	pH	Conductivity ($\mu\text{S}/\text{mS}$ $\mu\text{mhos/cm}$)	Temperature ($^{\circ}\text{C}$ / $^{\circ}\text{F}$)	D.O. (mg/L)	ORP (mV)
1035	1/4	6.09	- 0.000	10.9	—	—

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-7	3 x voa vial	YES	HCL	LANCASTER	NWTPH-Gx/BTEX(8021)
	2 x 1 liter ambers	YES	HCL	LANCASTER	NWTPH-Dx w/sgc
	1 x 250ml poly	YES	HNO3	LANCASTER	TOTAL LEAD(6020)

COMMENTS: _____

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Plug: _____ Add/Replaced Lock: _____



GETTLER - RYAN INC.

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/Facility#: **Chevron #209335**
 Site Address: **1225 N. 45th Street**
 City: **Seattle, WA**

Job Number: **386750**
 Event Date: **3.11.15** (inclusive)
 Sampler: **J.P.**

Well ID: **MW-8**
 Well Diameter: **2** in.
 Total Depth: **35.00** ft.
 Depth to Water: **27.10** ft.

Volume Factor (VF)	3/4" = 0.02	1" = 0.04	2" = 0.17	3" = 0.38
	4" = 0.66	5" = 1.02	6" = 1.50	12" = 5.80

Check if water column is less than 0.50 ft.

7.022 xVF **—** = **—** x3 case volume = Estimated Purge Volume: **—** gal.

Depth to Water w/ 80% Recharge ([Height of Water Column x 0.20) + DTW]: **—**

Purge Equipment:
 Disposable Bailer **X**
 Stainless Steel Bailer **—**
 Stack Pump **—**
 Peristaltic Pump **—**
 QED Bladder Pump **—**
 Other: **—**

Sampling Equipment:
 Disposable Bailer **X**
 Pressure Bailer **—**
 Metal Filters **—**
 Peristaltic Pump **—**
 QED Bladder Pump **—**
 Other: **—**

Time Started:	(2400 hrs)
Time Completed:	(2400 hrs)
Depth to Product:	ft
Depth to Water:	ft
Hydrocarbon Thickness:	ft
Visual Confirmation/Description:	
Skimmer / Absorbant Sock (circle one)	
Amt Removed from Skimmer:	ltr
Amt Removed from Well:	ltr
Water Removed:	ltr
Product Transferred to:	

Start Time (purge): **0956**
 Sample Time/Date: **1009 / 3.11.15**
 Approx. Flow Rate: **—** gpm.
 Did well de-water? **No** If yes, Time: **—** Volume: **—** gal. DTW @ Sampling: **27.10**

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (μ S / mS μ mhos/cm)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
1001	1/4	6.42	.990	11.1		

LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-8	3 x voa vial	YES	HCL	LANCASTER	NWTPH-Gx/BTEX(8021)
	2 x 1 liter ambers	YES	HCL	LANCASTER	NWTPH-Dx w/sgc
	1 x 250ml poly	YES	HNO3	LANCASTER	TOTAL LEAD(6020)

COMMENTS: **—**

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Plug: _____ Add/Replaced Lock: _____



GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Chevron #209335**
Site Address: **1225 N. 45th Street**
City: **Seattle, WA**

Job Number: **386750**
Event Date: **3. 11. 15**
Sampler: **V.P.**

Well ID	<u>MW-9</u>
Well Diameter	<u>2</u> in.
Total Depth	<u>41.06</u> ft.
Depth to Water	<u>29.63</u> ft.

Date Monitored: 3-11-15

Volume Factor (VF)	$\frac{3}{4}$ " = 0.02	1" = 0.04	$2\frac{1}{2}$ " = 0.17	3" = 0.38
	4" = 0.66	5" = 1.02	6" = 1.50	12" = 5.80

Check if water column is less than 0.50 ft.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]:

Purge Equipment:

Disposable Bailer _____ X
Stainless Steel Bailer _____
Stack Pump _____
Peristaltic Pump _____
QED Bladder Pump _____
Other: _____

Sampling Equipment:

- Disposable Bailer
- Pressure Bailer
- Metal Filters
- Peristaltic Pump
- QED Bladder Pump
- Other:

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: _____ ft
Visual Confirmation/Description:

Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr
Product Transferred to: _____

Start Time (purge):

Weather Conditions:

Sample Time/Date: 03/01/15

Water Color: Amber Odor: Y / N

Approx. Flow Rate: gpm.

Sediment Description: calcareous

Did well de-water?

If yes, Time: — Volume: — gal RTW @ Sampling: → 9 / 3

Time (2400 hr.)	Volume (gal.)	pH	Conductivity µS mS µmhos/cm)	Temperature C F)	D.O. (mg/L)	ORP (mV)
0016	1/1	6.91	.4980	11.2		

LABORATORY INFORMATION

LABORATORY INFORMATION					
SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-9	3 x voa vial	YES	HCL	LANCASTER	NWTPH-Gx/BTEX(8021)
	2 x 1 liter ambers	YES	HCL	LANCASTER	NWTPH-Dx w/sgc
	1 x 250ml poly	YES	HNO3	LANCASTER	TOTAL LEAD(6020)

COMMENTS:

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Plug: _____ Add/Replaced Lock: _____



GETTLER-RYAN INC.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: **Chevron #209335**
Site Address: **1225 N. 45th Street**
City: **Seattle, WA**

Job Number: **386750**
Event Date: **3-11-15** (inclusive)
Sampler: **JP**

Well ID	MW-10
Well Diameter	2 in.
Total Depth	44.37 ft.
Depth to Water	29.71 ft.

Date Monitored: 3-11-15

Volume Factor (VF)	$\frac{3}{4}'' = 0.02$	$1'' = 0.04$	$2'' = 0.17$	$3'' = 0.38$
	$4'' = 0.66$	$5'' = 1.02$	$6'' = 1.50$	$12'' = 5.80$

Check if water column is less than 0.50 ft.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTWI]:

Purge Equipment:

- Disposable Bailer _____ X
- Stainless Steel Bailer _____
- Stack Pump _____
- Peristaltic Pump _____
- QED Bladder Pump _____
- Other: _____

Sampling Equipment:

- Disposable Bailer
- Pressure Bailer
- Metal Filters
- Peristaltic Pump
- QED Bladder Pump
- Other: _____

Time Started: _____ (2400 hrs)
Time Completed: _____ (2400 hrs)
Depth to Product: _____ ft
Depth to Water: _____ ft
Hydrocarbon Thickness: _____ ft
Visual Confirmation/Description:

Skimmer / Absorbant Sock (circle one)
Amt Removed from Skimmer: _____ ltr
Amt Removed from Well: _____ ltr
Water Removed: _____ ltr
Product Transferred to: _____

Start Time (purge): 0924
Sample Time/Date: 0924/30/15
Approx. Flow Rate: _____ gpm.
Did well de-water? No If yes, Time _____

Weather Conditions: SUN
Water Color: cloudy Odor: Y / N
Sediment Description: BROWNISH
Volume: _____ gal. DTW @ Sampling: 29.71

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (μS / mS μmhos/cm)	Temperature (°C / °F)	D.O. (mg/L)	ORP (mV)
2046	14	6.96	614	19.9		

LABORATORY INFORMATION

LABORATORY INFORMATION					
SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW- 10	3 x voa vial	YES	HCL	LANCASTER	NWTPH-Gx/BTEX(8021)
	2 x 1 liter ambers	YES	HCL	LANCASTER	NWTPH-Dx w/sgc
	1 x 250ml poly	YES	HNO3	LANCASTER	TOTAL LEAD(6020)

COMMENTS: _____

Add/Replaced Gasket: _____ Add/Replaced Bolt: _____ Add/Replaced Plug: _____ Add/Replaced Lock: _____

Chevron Northwest Region Analysis Request/Chain of Custody



**Lancaster
Laboratories**

For Eurofins Lancaster Laboratories use only
Acct. # _____ Group # _____ Sample # _____
Instructions on reverse side correspond with circled numbers.

Attachment B:
Laboratory Analysis Report

**ANALYTICAL RESULTS**

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Chevron
6001 Bollinger Canyon Road
L4310
San Ramon CA 94583

March 26, 2015

Project: 209335

Submittal Date: 03/13/2015
Group Number: 1545086
PO Number: 0015145797
Release Number: WAITE
State of Sample Origin: WA

Client Sample Description

QA Water
MW-6 Grab Groundwater
MW-7 Grab Groundwater
MW-8 Grab Groundwater
MW-9 Grab Groundwater
MW-10 Grab Groundwater

Lancaster Labs (LL) #

7803712
7803713
7803714
7803715
7803716
7803717

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>.

ELECTRONIC Gettler-Ryan Inc.
COPY TO
ELECTRONIC Leidos
COPY TO
ELECTRONIC Leidos
COPY TO

Attn: Gettler Ryan
Attn: Jamalyn Agyei
Attn: Ruth Otteman



Lancaster Laboratories
Environmental

Analysis Report

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Respectfully Submitted,



Amek Carter
Specialist

(717) 556-7252



2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: QA Water
Facility# 209335 Job# 386750
1225 N. 45th St - Seattle, WA

LL Sample # WW 7803712
LL Group # 1545086
Account # 11260

Project Name: 209335

Collected: 03/11/2015

Chevron

Submitted: 03/13/2015 09:30

6001 Bollinger Canyon Road
L4310

Reported: 03/26/2015 16:48

San Ramon CA 94583

45SQA

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC Volatiles 08274	ECY 97-602 NWTPH-Gx NWTPH-Gx water C7-C12	n.a.	ug/l N.D.	ug/l 50	1
GC Volatiles 02102	SW-846 8021B Benzene	71-43-2	ug/l N.D.	ug/l 0.5	1
02102	Ethylbenzene	100-41-4	N.D.	0.5	1
02102	Toluene	108-88-3	N.D.	0.5	1
02102	Total Xylenes	1330-20-7	N.D.	1.5	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08274	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	15076B94A	03/18/2015 13:47	Brett W Kenyon	1
02102	Method 8021 Water Master	SW-846 8021B	1	15076B94A	03/18/2015 13:47	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	15076B94A	03/18/2015 13:47	Brett W Kenyon	1



2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: MW-6 Grab Groundwater
Facility# 209335 Job# 386750
1225 N. 45th St - Seattle, WA

LL Sample # WW 7803713
LL Group # 1545086
Account # 11260

Project Name: 209335

Collected: 03/11/2015 09:40 by JP

Chevron

6001 Bollinger Canyon Road

L4310

San Ramon CA 94583

Submitted: 03/13/2015 09:30

Reported: 03/26/2015 16:48

45SM6

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC Volatiles 08274	ECY 97-602 NWTPH-Gx NWTPH-Gx water C7-C12	n.a.	ug/l N.D.	ug/l 50	1
GC Volatiles 02102	SW-846 8021B Benzene	71-43-2	ug/l N.D.	ug/l 0.5	1
02102	Ethylbenzene	100-41-4	N.D.	0.5	1
02102	Toluene	108-88-3	0.5	0.5	1
02102	Total Xylenes	1330-20-7	N.D.	1.5	1
GC Petroleum Hydrocarbons w/Si 12005	ECY 97-602 NWTPH-Dx modified	n.a.	ug/l N.D.	ug/l 30	1
12005	DRO C12-C24 w/Si Gel	n.a.	N.D.	71	1
The reverse surrogate, capric acid, is present at <1%.					
Metals 06035	SW-846 6020 Lead	7439-92-1	mg/l 0.0063	mg/l 0.000082	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08274	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	15076B94A	03/18/2015 20:57	Brett W Kenyon	1
02102	Method 8021 Water Master	SW-846 8021B	1	15076B94A	03/18/2015 20:57	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	15076B94A	03/18/2015 20:57	Brett W Kenyon	1
12005	NWTPH-Dx water w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	150750033A	03/24/2015 16:02	Christine E Dolman	1
12007	NW Dx water w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	150750033A	03/17/2015 09:00	Olivia Arosemena	1
06035	Lead	SW-846 6020	1	150776050001A	03/19/2015 08:20	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3020A	1	150776050001	03/18/2015 21:30	Annamaria Kuhns	1



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Sample Description: MW-7 Grab Groundwater
Facility# 209335 Job# 386750
1225 N. 45th St - Seattle, WA

LL Sample # WW 7803714
LL Group # 1545086
Account # 11260

Project Name: 209335

Collected: 03/11/2015 10:35 by JP

Chevron

6001 Bollinger Canyon Road

L4310

San Ramon CA 94583

Submitted: 03/13/2015 09:30

Reported: 03/26/2015 16:48

45SM7

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC Volatiles 08274	ECY 97-602 NWTPH-Gx NWTPH-Gx water C7-C12	n.a.	ug/l 65,000	ug/l 1,000	20
GC Volatiles 02102	SW-846 8021B Benzene	71-43-2	ug/l N.D.	ug/l 5.0	10
02102	Ethylbenzene	100-41-4	570	5.0	10
02102	Toluene	108-88-3	470	5.0	10
02102	Total Xylenes	1330-20-7	6,700	15	10
Reporting limits were raised due to interference from the sample matrix.					
GC Petroleum Hydrocarbons w/Si 12005	ECY 97-602 NWTPH-Dx modified	n.a.	ug/l 200,000	ug/l 7,300	100
12005	HRO C24-C40 w/Si Gel	n.a.	N.D.	17,000	100
Due to the dilution of the sample extract, capric acid recovery can not be determined.					
Metals 06035	SW-846 6020 Lead	7439-92-1	mg/l 0.0717	mg/l 0.000082	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08274	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	15076B94A	03/18/2015 22:38	Brett W Kenyon	20
02102	Method 8021 Water Master	SW-846 8021B	1	15079A53A	03/20/2015 16:23	Marie D Beamenderfer	10
01146	GC VOA Water Prep	SW-846 5030B	1	15076B94A	03/18/2015 22:38	Brett W Kenyon	20
01146	GC VOA Water Prep	SW-846 5030B	2	15079A53A	03/20/2015 16:23	Marie D Beamenderfer	10
12005	NWTPH-Dx water w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	150750033A	03/25/2015 14:11	Christine E Dolman	100
12007	NW Dx water w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	150750033A	03/17/2015 09:00	Olivia Arosemena	1
06035	Lead	SW-846 6020	1	150776050001A	03/19/2015 08:22	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3020A	1	150776050001	03/18/2015 21:30	Annamaria Kuhns	1



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Sample Description: MW-8 Grab Groundwater
Facility# 209335 Job# 386750
1225 N. 45th St - Seattle, WA

LL Sample # WW 7803715
LL Group # 1545086
Account # 11260

Project Name: 209335

Collected: 03/11/2015 10:05 by JP

Chevron

6001 Bollinger Canyon Road

L4310

San Ramon CA 94583

Submitted: 03/13/2015 09:30

Reported: 03/26/2015 16:48

45SM8

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC Volatiles 08274	ECY 97-602 NWTPH-Gx NWTPH-Gx water C7-C12	n.a.	ug/l N.D.	ug/l 50	1
GC Volatiles 02102	SW-846 8021B Benzene	71-43-2	ug/l N.D.	ug/l 0.5	1
02102	Ethylbenzene	100-41-4	N.D.	0.5	1
02102	Toluene	108-88-3	N.D.	0.5	1
02102	Total Xylenes	1330-20-7	N.D.	1.5	1
GC Petroleum Hydrocarbons w/Si 12005	ECY 97-602 NWTPH-Dx modified	n.a.	ug/l N.D.	ug/l 29	1
12005	DRO C12-C24 w/Si Gel	n.a.	N.D.	68	1
The reverse surrogate, capric acid, is present at <1%.					
Metals 06035	SW-846 6020 Lead	7439-92-1	mg/l 0.00032	mg/l 0.000082	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08274	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	15076B94A	03/18/2015 21:23	Brett W Kenyon	1
02102	Method 8021 Water Master	SW-846 8021B	1	15076B94A	03/18/2015 21:23	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	15076B94A	03/18/2015 21:23	Brett W Kenyon	1
12005	NWTPH-Dx water w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	150750033A	03/24/2015 16:23	Christine E Dolman	1
12007	NW Dx water w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	150750033A	03/17/2015 09:00	Olivia Arosemena	1
06035	Lead	SW-846 6020	1	150776050001A	03/19/2015 08:24	Choon Y Tian	1
06050	ICPMS-Water, 3020A - U3	SW-846 3020A	1	150776050001	03/18/2015 21:30	Annamaria Kuhns	1



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Sample Description: MW-9 Grab Groundwater
Facility# 209335 Job# 386750
1225 N. 45th St - Seattle, WA

LL Sample # WW 7803716
LL Group # 1545086
Account # 11260

Project Name: 209335

Collected: 03/11/2015 08:20 by JP

Chevron

6001 Bollinger Canyon Road

L4310

San Ramon CA 94583

Submitted: 03/13/2015 09:30

Reported: 03/26/2015 16:48

45SM9

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC Volatiles 08274	ECY 97-602 NWTPH-Gx NWTPH-Gx water C7-C12	n.a.	ug/l N.D.	ug/l 50	1
GC Volatiles 02102	SW-846 8021B Benzene	71-43-2	ug/l N.D.	ug/l 0.5	1
02102	Ethylbenzene	100-41-4	N.D.	0.5	1
02102	Toluene	108-88-3	0.5	0.5	1
02102	Total Xylenes	1330-20-7	N.D.	1.5	1
GC Petroleum Hydrocarbons w/Si 12005	ECY 97-602 NWTPH-Dx modified	n.a.	ug/l N.D.	ug/l 28	1
12005	DRO C12-C24 w/Si Gel	n.a.	N.D.	66	1
The reverse surrogate, capric acid, is present at <1%.					
Metals 06035	SW-846 6020 Lead	7439-92-1	mg/l 0.000020	mg/l 0.0000082	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08274	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	15076B94A	03/18/2015 21:48	Brett W Kenyon	1
02102	Method 8021 Water Master	SW-846 8021B	1	15076B94A	03/18/2015 21:48	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	15076B94A	03/18/2015 21:48	Brett W Kenyon	1
12005	NWTPH-Dx water w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	150750033A	03/24/2015 16:45	Christine E Dolman	1
12007	NW Dx water w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	150750033A	03/17/2015 09:00	Olivia Arosemena	1
06035	Lead	SW-846 6020	1	150776050002A	03/21/2015 14:33	Deborah A Kraday	1
06050	ICPMS-Water, 3020A - U3	SW-846 3020A	1	150776050002	03/19/2015 11:27	James L Mertz	1



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Sample Description: MW-10 Grab Groundwater
Facility# 209335 Job# 386750
1225 N. 45th St - Seattle, WA

LL Sample # WW 7803717
LL Group # 1545086
Account # 11260

Project Name: 209335

Collected: 03/11/2015 08:50 by JP

Chevron

6001 Bollinger Canyon Road

L4310

Submitted: 03/13/2015 09:30

San Ramon CA 94583

Reported: 03/26/2015 16:48

45S10

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC Volatiles 08274	ECY 97-602 NWTPH-Gx NWTPH-Gx water C7-C12	n.a.	ug/l N.D.	ug/l 50	1
GC Volatiles 02102	SW-846 8021B Benzene	71-43-2	ug/l N.D.	ug/l 0.5	1
02102	Ethylbenzene	100-41-4	N.D.	0.5	1
02102	Toluene	108-88-3	N.D.	0.5	1
02102	Total Xylenes	1330-20-7	N.D.	1.5	1
GC Petroleum Hydrocarbons w/Si 12005	ECY 97-602 NWTPH-Dx modified	n.a.	ug/l N.D.	ug/l 29	1
12005	DRO C12-C24 w/Si Gel	n.a.	N.D.	69	1
The reverse surrogate, capric acid, is present at <1%.					
Metals 06035	SW-846 6020 Lead	7439-92-1	mg/l 0.000020	mg/l 0.0000082	1

General Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08274	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	15076B94A	03/18/2015 22:13	Brett W Kenyon	1
02102	Method 8021 Water Master	SW-846 8021B	1	15076B94A	03/18/2015 22:13	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	15076B94A	03/18/2015 22:13	Brett W Kenyon	1
12005	NWTPH-Dx water w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	150750033A	03/24/2015 17:06	Christine E Dolman	1
12007	NW Dx water w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	150750033A	03/17/2015 09:00	Olivia Arosemena	1
06035	Lead	SW-846 6020	1	150776050002A	03/21/2015 14:38	Deborah A Kraday	1
06050	ICPMS-Water, 3020A - U3	SW-846 3020A	1	150776050002	03/19/2015 11:27	James L Mertz	1

Quality Control Summary

Client Name: Chevron
Reported: 03/26/2015 16:48

Group Number: 1545086

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL</u>	<u>Report Units</u>	LCS %REC	LCSD %REC	<u>LCS/LCSD Limits</u>	RPD	RPD Max
Batch number: 15076B94A			Sample number(s): 7803712-7803717					
Benzene	N.D.	0.2	ug/l	99	98	80-120	1	30
Ethylbenzene	N.D.	0.2	ug/l	97	95	80-120	2	30
NWTPH-Gx water C7-C12	N.D.	50.	ug/l	100	98	80-123	2	30
Toluene	N.D.	0.2	ug/l	99	97	80-120	2	30
Total Xylenes	N.D.	0.2	ug/l	100	98	80-120	2	30
Batch number: 15079A53A			Sample number(s): 7803714					
Benzene	N.D.	0.2	ug/l	100	99	80-120	1	30
Ethylbenzene	N.D.	0.2	ug/l	97	95	80-120	2	30
Toluene	N.D.	0.2	ug/l	96	94	80-120	2	30
Total Xylenes	N.D.	0.2	ug/l	101	100	80-120	1	30
Batch number: 150750033A			Sample number(s): 7803713-7803717					
DRO C12-C24 w/Si Gel	N.D.	30.	ug/l	54	53	32-117	2	20
HRO C24-C40 w/Si Gel	N.D.	70.	ug/l					
Batch number: 150776050001A			Sample number(s): 7803713-7803715					
Lead	0.000085	0.00008	mg/l	102		80-120		
		2						
Batch number: 150776050002A			Sample number(s): 7803716-7803717					
Lead	N.D.	0.00008	mg/l	102		80-120		
		2						

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD MAX</u>	<u>BKG Conc</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: 150776050001A	Sample number(s): 7803713-7803715 UNSPK: P807629				BKG: P807629			
Lead	118	113	75-125	3	20	0.0045	0.0043	6 (1)
Batch number: 150776050002A	Sample number(s): 7803716-7803717 UNSPK: P806546				BKG: P806546			
Lead	112	103	75-125	8	20	0.00018	0.00018	3 (1)

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron
Reported: 03/26/2015 16:48

Group Number: 1545086

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: Method 8021 Water Master

Batch number: 15076B94A

Trifluorotoluene-P Trifluorotoluene-F

7803712	83	83
7803713	84	83
7803714		83
7803715	85	80
7803716	85	83
7803717	84	83
Blank	84	83
LCS	84	99
LCSD	84	96

Limits: 51-120 63-135

Analysis Name: Method 8021 Water Master

Batch number: 15079A53A

Trifluorotoluene-P

7803714	97
Blank	99
LCS	99
LCSD	99

Limits: 51-120

Analysis Name: NWTPH-Dx water w/ 10g Si Gel

Batch number: 150750033A

Orthoterphenyl

7803713	91
7803714	151*
7803715	79
7803716	68
7803717	70
Blank	79
LCS	88
LCSD	81

Limits: 50-150

*- Outside of specification

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

Chevron Northwest Region Analysis Request/Chain of Custody



**Lancaster
Laboratories**

Acct. # 11260

For Eurofins Lancaster Laboratories use only
Group # 1545086 Sample # 7803712-17
Instructions on reverse side correspond with circled numbers.

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	BMQL	Below Minimum Quantitation Level
N.D.	none detected	MPN	Most Probable Number
TNTC	Too Numerous To Count	CP Units	cobalt-chloroplatinate units
IU	International Units	NTU	nephelometric turbidity units
umhos/cm	micromhos/cm	ng	nanogram(s)
C	degrees Celsius	F	degrees Fahrenheit
meq	milliequivalents	lb.	pound(s)
g	gram(s)	kg	kilogram(s)
µg	microgram(s)	mg	milligram(s)
mL	milliliter(s)	L	liter(s)
m3	cubic meter(s)	µL	microliter(s)
		pg/L	picogram/liter
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Laboratory Data Qualifiers:

- B - Analyte detected in the blank
- C - Result confirmed by reanalysis
- E - Concentration exceeds the calibration range
- J (or G, I, X) - estimated value \geq the Method Detection Limit (MDL or DL) and the < Limit of Quantitation (LOQ or RL)
- P - Concentration difference between the primary and confirmation column >40%. The lower result is reported.
- U - Analyte was not detected at the value indicated
- V - Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference...

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, ISO17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

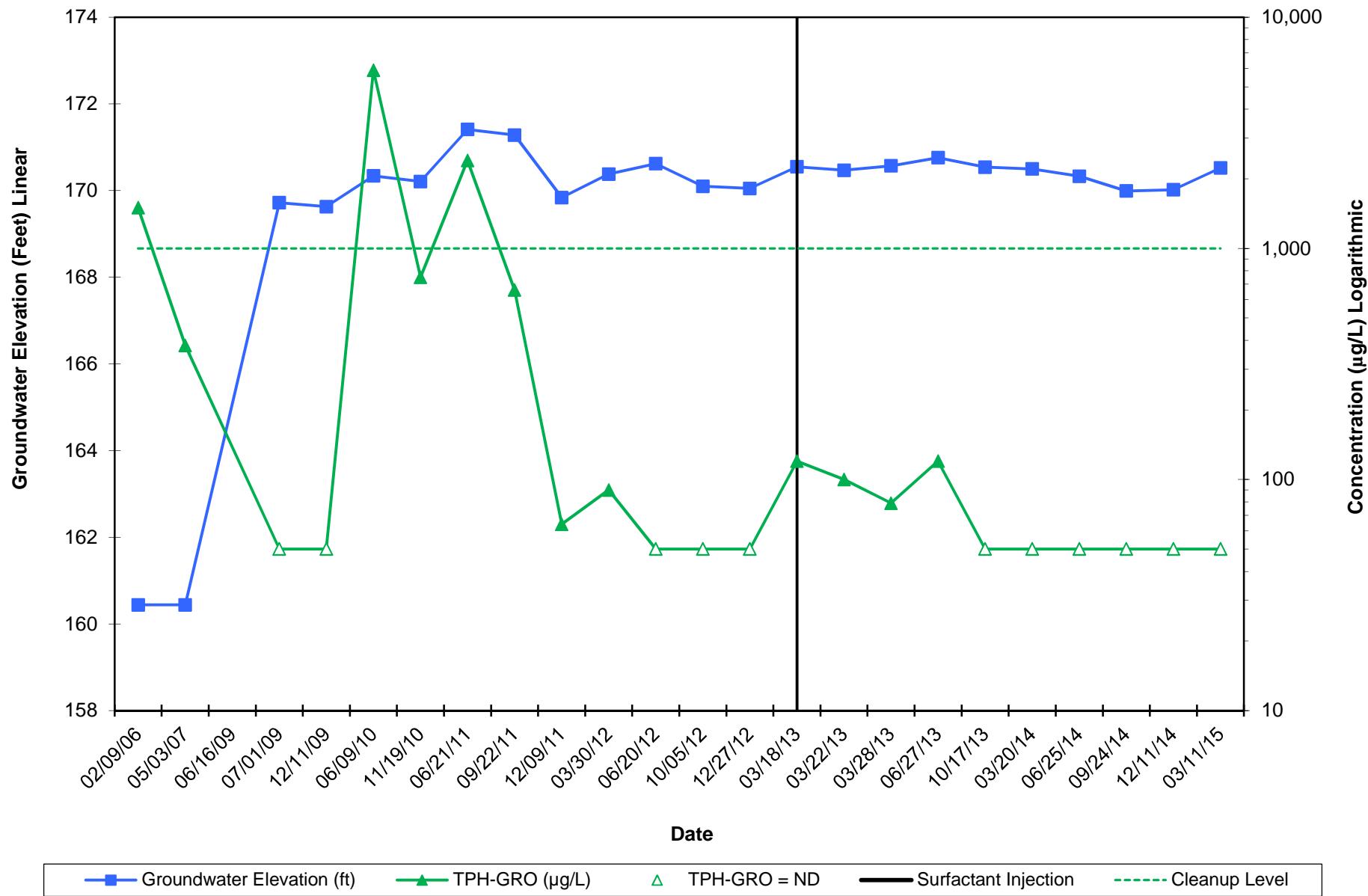
This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

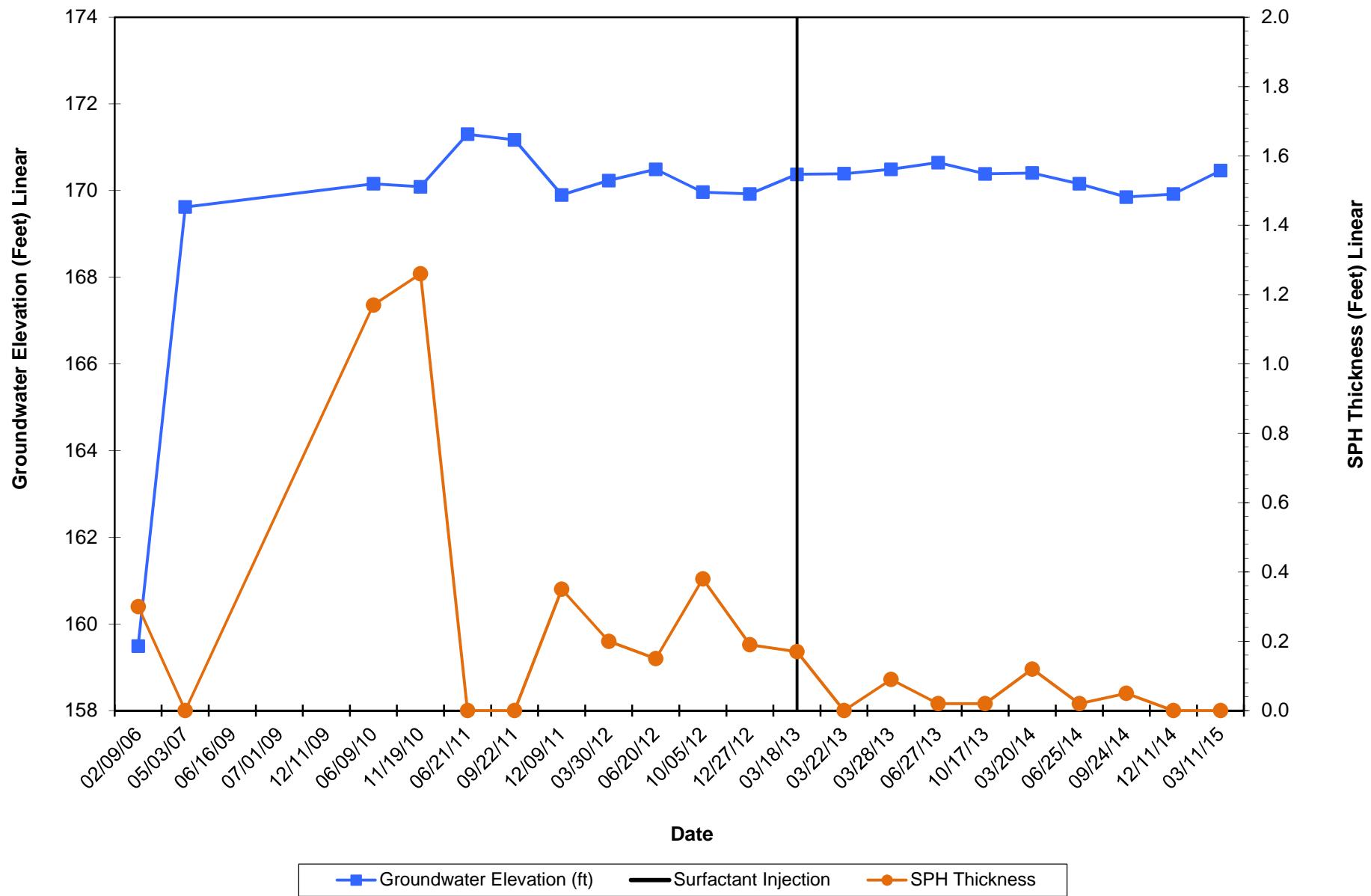
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Attachment C:
Hydrographs

Monitoring Well MW-6
Hydrograph - Gasoline-Range Hydrocarbons
Former Standard Oil Service Station, Chevron Site No. 209335
1225 North 45th Street, Seattle, Washington



Monitoring Well MW-7
Hydrograph - SPH Thickness
Former Standard Oil Service Station, Chevron Site No. 209335
1225 North 45th Street, Seattle, Washington



Monitoring Well MW-8
Hydrograph - Gasoline-Range Hydrocarbons
Former Standard Oil Service Station, Chevron Site No. 209335
1225 North 45th Street, Seattle, Washington

