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Subject:

Former ARCO Facility No. 05544 (NW2430) – 2016 Annual Site Status Report

ENVIRONMENT

Site Address: 19918 68th Avenue South, Kent, Washington 98032

Date:

February 7, 2017

On behalf of BP West Coast Products, LLC., Arcadis U.S., Inc. is pleased to submit this annual summary of site activities conducted at the Former Atlantic Richfield Company (ARCO) Facility No. 05544 (site) in 2016. Results and findings from work completed at the site are summarized below and in the attached data tables and figures.

Contact:

Brian Marcum

Current Site Use: Active Station

Phone:

503-785-9406

2016 Groundwater Monitoring Summary

Groundwater Monitoring Schedule: Quarterly

Email:

brian.marcum
@arcadis.com

Sample Methodology:

First Quarter:	Low Flow Purge and Sample
Second Quarter:	Low Flow Purge and Sample
Third Quarter:	Low Flow Purge and Sample
Fourth Quarter:	No Event Conducted

Our ref:

GP09BPNA.WA39

Non-aqueous Phase Liquid Present at Site: No

**Site Constituents of Concern above Model Toxics Control Act Method A
 Cleanup Levels during reporting period:**

- Total Petroleum Hydrocarbons (TPH) as Gasoline Range Organics: First Quarter (Q1) – MW-2, MW-6 and MW-13; Second Quarter (Q2) – MW-2, MW-6, MW-12 and MW-13; Third Quarter (Q3) - MW-2, MW-6, MW-12 and MW-13
- TPH as Diesel Range Organics: Q1 – MW-2, MW-5, MW-6 and MW-13; Q2 – MW-2, MW-5, MW-6 and MW-13; Q3 – MW-2, MW-5, MW-6, MW-12 and MW-13
- Benzene: Q2 – MW-12; Q3 – MW-2 and MW-12
- Ethylbenzene: Q2 – MW-2
- Total Xylenes: Q2 – MW-2 and MW-6

Observed Depth to Water per Event:

First Quarter: 6.66 (MW-1) to 8.25 (MW-5) feet below top of casing (btoc)– 3/25/2016

Second Quarter: 8.19 (MW-1) to 9.81 (MW-5) feet btoc – 6/7/2016

Third Quarter: 8.91 (MW-1) to 10.74 (MW-5) feet btoc – 9/19/2016

Groundwater Elevations and Flow Direction:

<u>Event</u>	<u>Elevation Range</u>	<u>Interpreted Groundwater Flow Direction</u>
First Quarter:	18.64 (MW-7) to 19.64 (MW-3) feet above North American Vertical Datum 1988 (NAVD 88)	East North East, North
Second Quarter:	17.58 (MW-12) to 17.98 (MW-3) feet above NAVD88	North West
Third Quarter:	16.62 (MW-12) to 17.37 (MW-3) feet above NAVD 88	North, North West

WA-05544
February 7, 2017

2016 Additional Site Activities

No additional activities were conducted at the site in 2016.

If you have any questions please contact Brian Marcum 503-785-9406 or Brian.Marcum@arcadis.com.

Sincerely,

Arcadis U.S., Inc.



Brian Marcum
Project Manager

Copies:

Hadi Kerawala, Property Owner



Rebecca Andresen, L.G.

Vice President



Rebecca K. Andresen

Enclosures:

Table

Table 1	Groundwater Gauging Data and Select Analytical Results
Table 2	Polycyclic Aromatic Hydrocarbons Analytical Results

Figures

Figure 1	Site Location Map
Figure 2	Groundwater Contour Map with Analytical Results March 25, 2016
Figure 3	Groundwater Contour Map with Analytical Results June 07, 2016
Figure 4	Groundwater Contour Map with Analytical Results September 19, 2016
Figure 5	Historical Groundwater Gradient Direction Rose Diagram

Attachments

Attachment A	Groundwater Monitoring Field Data Sheets
Attachment B	Laboratory Report and Chain-of-Custody Documentation

TABLES



**Table 1
Groundwater Gauging Data and Select Analytical Results
WA-05544**

19918 68th Avenue South, Kent, WA 98032

All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTC) Method A Cleanup Levels (CULs) in µg/L							800/1,000	500	500	5	1,000	700	1,000	20	0.01	5	15	15
MW-1	3/12/2002	(P)	196.78	7.45	0.0	189.33	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	19.1	<1.00
MW-1	8/30/2002	(P)	196.78	10.10	0.0	186.68	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<2.00	<0.01	<1.00	44.2	<1.00
MW-1	3/24/2003	(P)	196.78	6.75	0.0	190.03	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	2.3	<1.00
MW-1	4/22/2003	(NS)	196.78	8.62	0.0	188.16	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	6/30/2003	(P)	196.78	9.57	0.0	187.21	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	<1.00	<1.00
MW-1	9/15/2003	(P)	196.78	10.27	0.0	186.51	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	<1.00	<1.00
MW-1	12/30/2003	(P)	196.78	8.75	0.0	188.03	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	<1.00	<1.00
MW-1	7/13/2004	(NS)	196.78	9.85	0.0	186.93	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	11/1/2004	(NP)	196.78	9.60	0.0	187.18	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	<1.00	--
MW-1	3/3/2005	(NP)	196.78	9.11	0.0	187.67	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	<1.00	--
MW-1	6/12/2005	(NP)	196.78	8.88	0.0	187.90	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	<1.00	--
MW-1	8/28/2005	(NS)	196.78	10.13	0.0	186.65	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	11/17/2005	(NS)	196.78	8.88	0.0	187.90	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	3/5/2006	(NS)	196.78	8.49	0.0	188.29	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	10/24/2006	(NS)	196.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	3/22/2007	(NS)	196.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	5/30/2007	(NS)	196.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	9/4/2007	(NS)	196.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	11/13/2007	(NS)	196.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	3/12/2008	(NP)	196.78	8.90	0.0	187.88	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-1	6/9/2008	(NP)	196.78	8.74	0.0	188.04	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-1	8/6/2008	(NS)	196.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	10/8/2008	(NS)	196.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	1/15/2009	(NP)	196.78	6.64	0.0	190.14	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-1	4/2/2009	(NP)	196.78	7.89	0.0	188.89	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	<1.00	<1.00
MW-1	10/14/2009	(NS)	196.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	3/22/2010	(NP)	26.12	7.70	--	18.42	<50	--	--	<1.0	<1.0	<1.0	<3	<1.0	--	--	--	--
MW-1	6/22/2010	(NP)	26.12	7.14	--	18.98	<50	--	--	<0.50	<0.50	<0.50	<1.0	<1.0	--	--	--	--
MW-1	6/22/2010	(Dup)(NP)	26.12	7.14	--	18.98	<50	--	--	<0.50	<0.50	<0.50	<1.0	<1.0(H)	--	--	--	--
MW-1	3/10/2011	(NP)	26.12	5.82	0.0	20.30	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<20.0	<10.0
MW-1	9/19/2011	(NP)	26.12	8.73	0.0	17.39	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-1	3/16/2012	(NP)	26.12	5.58	0.0	20.54	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-1	7/26/2012	(NS)	26.12	8.67	0.0	17.45	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	3/1/2013	(NS)	26.12	7.91	0.0	18.21	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	5/22/2013	(NS)	26.12	8.08	0.0	18.04	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	7/24/2013	(NS)	26.12	9.45	0.0	16.67	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	10/4/2013	(NS)	26.12	6.63	0.0	19.49	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	2/12/2014	(NS)	26.12	7.00	0.0	19.12	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	5/14/2014	(NS)	26.12	7.51	0.0	18.61	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	8/5/2014	(NS)	26.12	9.05	0.0	17.07	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	12/2/2014	(NS)	26.12	7.61	0.0	18.51	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	6/5/2015	(NS)	26.12	9.20	0.0	16.92	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	12/15/2015	(NS)	26.12	6.05	0.0	20.07	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	3/25/2016	(NS)	26.12	6.66	0.0	19.46	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	6/7/2016	(NS)	26.12	8.19	0.0	17.93	--	--	--	--	--	--	--	--	--	--	--	--
MW-1	9/19/2016	(NS)	26.12	8.91	0.0	17.21	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	3/12/2002	(P)	198.02	8.60	0.0	189.42	201,000	--	--	40,800	39,700	4,240	19,900	2,250	--	--	50.4	<1.00
MW-2	8/30/2002	(P)	198.02	11.04	0.0	186.98	74,000	--	--	24,300	4,590	2,270	7,530	2,620	<0.01	<100	121	<1.00
MW-2	3/24/2003	(P)	198.02	8.45	0.0	189.57	47,900	--	--	12,800	2,550	1,680	4,870	1,950	--	--	13.9	<1.00
MW-2	4/22/2003	(NS)	198.02	9.31	0.0	188.71	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	6/30/2003	(P)	198.02	10.43	0.0	187.59	51,000	--	--	12,100	2,500	2,290	5,720	2,370	--	--	52.9	9.95
MW-2	9/15/2003	(P)	198.02	11.33	0.0	186.69	33,600	--	--	6,000	1,390	1,840	4,320	1,590	--	--	14.7	<1.00

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Groundwater Gauging Data and Select Analytical Results
WA-05544**

19918 68th Avenue South, Kent, WA 98032

All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTC) Method A Cleanup Levels (CULs) in µg/L							800/1,000	500	500	5	1,000	700	1,000	20	0.01	5	15	15
MW-2	12/30/2003	(P)	198.02	9.36	0.0	188.66	74,000	--	--	10,100	12,800	1,980	8,510	1,070	--	--	8.74	<1.00
MW-2	7/13/2004	(NP)	198.02	10.71	0.0	187.31	68,200	--	--	12,700	3,890	1,710	6,860	1,630	--	--	<1.00	<1.00
MW-2	11/1/2004	(NP)	198.02	9.11	0.0	188.91	<80.0	--	--	25.5	<1.00	<1.00	<2.00	355	--	--	<1.00	--
MW-2	3/3/2005	(NP)	198.02	12.20	0.0	185.82	<80.0	--	--	<0.400	<1.00	<1.00	<2.00	229	--	--	1.82	--
MW-2	6/12/2005	(NP)	198.02	10.00	0.0	188.02	4,020	--	--	616	33	523	490	117	--	--	<1.00	--
MW-2	8/28/2005	(NP)	198.02	11.14	0.0	186.88	5,400	--	--	1,500	3.57	66.6	63.9	229	--	--	<1.00	--
MW-2	11/17/2005	(NP)	198.02	10.25	0.0	187.77	<50.0	--	--	0.72	<0.500	<0.500	<1.00	106	--	--	<1.00	--
MW-2	3/5/2006	(NP)	198.02	9.05	0.0	188.97	69.2	--	--	3.14	<0.500	1.59	2.98	46.5	--	--	<1.00	--
MW-2	10/24/2006	(P)	198.02	11.08	0.0	186.94	733	--	--	84.3	1.18	66.1	10.6	358	--	--	--	--
MW-2	3/22/2007	(P)	198.02	8.43	0.0	189.59	51,900	--	--	2,380	4,810	3,350	13,700	<100	--	--	--	--
MW-2	5/30/2007	(P)	198.02	9.97	0.0	188.05	51,900	--	--	1,650	3,390	2,360	7,650	119	--	--	--	--
MW-2	9/4/2007	(P)	198.02	10.22	0.0	187.80	81,900	--	--	1,480	221	3,120	24,100	131	--	--	--	--
MW-2	11/13/2007	(P)	198.02	10.32	0.0	187.70	21,200	--	--	426	89.9	594	1,760	65.5	--	--	--	--
MW-2	3/12/2008	(NP)	198.02	9.15	0.0	188.87	91,100	--	--	304	2,240	3,750	16,700	6.41	--	--	--	--
MW-2	6/9/2008	(NP)	198.02	6.65	0.0	191.37	22,100	--	--	11.7	963	632	3,360	<1.00	--	--	--	--
MW-2	8/6/2008	(NP)	198.02	10.60	0.0	187.42	61,200	--	--	268	1,510	3,400	16,500	1.48	--	--	--	--
MW-2	10/8/2008	(NP)	198.02	10.41	0.0	187.61	52,300	--	--	127	172	2,120	10,600	<1.00	--	--	--	--
MW-2	1/15/2009	(NP)	198.02	8.00	0.0	190.02	34,700	--	--	361	308	1,540	5,100	21.8	--	--	--	--
MW-2	4/2/2009	(NP)	198.02	8.89	0.0	189.13	81,600	--	--	90.3	1,120	3,590	18,700	<10	--	--	<1.00	<1.00
MW-2	10/14/2009	(NP)	198.02	9.86	0.0	188.16	45,000	--	--	98	38	2,300	8,000	<1.00	--	--	<2.00	--
MW-2	3/22/2010	(NP)	27.32	8.66	--	18.66	84,000	--	--	43	490	3,400	15,000	<1.0	--	--	--	--
MW-2	6/22/2010	(NP, H)	27.32	8.16	--	19.16	69,000	--	--	30	1,600	3,000	13,000	<50(H)	--	--	--	--
MW-2	3/10/2011	(NP)	27.32	7.19	0.0	20.13	47,800	--	--	19.9	548	2,380	9,250	<1.0	--	--	<10.0	<10.0
MW-2	9/19/2011	(NP)	27.32	10.45	0.0	16.87	37,000	--	--	66.0	10.9	2,210	2,410	<1.0	--	--	<10.0	<10.0
MW-2	3/16/2012	(NP)	27.32	7.19	0.0	20.13	30,800	--	--	32.5	17.5	1,960	3,050	<1.0	--	--	<10.0	<10.0
MW-2	7/26/2012	(NP)	27.32	9.78	0.0	17.54	42,600	--	--	49.6	9.5	2,090	4,330	<1.0	--	--	<10.0	<10.0
MW-2	3/1/2013	(NP)	27.32	9.60	0.0	17.72	<100	--	--	<1.0	<1.0	<1.0	<3.0	--	--	--	<3.0	<10.0
MW-2	3/1/2013	(Dup)(NP)	27.32	9.60	0.0	17.72	<100	--	--	<1.0	<1.0	<1.0	<3.0	--	--	--	--	--
MW-2	5/22/2013	(NP)	27.32	9.58	0.0	17.74	<100	--	--	<1.0	<1.0	<1.0	<3.0	1.1	--	--	<10.0	<10.0
MW-2	5/22/2013	(Dup)(NP)	27.32	9.58	0.0	17.74	<100	--	--	<1.0	<1.0	<1.0	<3.0	1.2	--	--	--	--
MW-2	7/24/2013	(NP)	27.32	10.38	0.0	16.94	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-2	7/24/2013	(Dup)(NP)	27.32	10.38	0.0	16.94	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	--	--
MW-2	10/4/2013	(LFP)	27.32	8.55	0.0	18.77	<100	--	--	2.4	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-2	2/12/2014	(LFP)	27.32	9.25	0.0	18.07	7,200	--	--	2.7(J)	0.71(J)	430	590	<0.50	--	--	<4.7	<4.7
MW-2	5/14/2014	(LFP)	27.32	7.98	0.0	19.34	5,200	--	--	2.6	0.79(J)	210	730	<0.50	--	--	0.18(J)	0.085
MW-2	5/14/2014	(Dup)(LFP)	27.32	7.98	0.0	19.34	5,100	--	--	2.8	0.99(J)	230	710	<0.50	--	--	0.16(J)	0.094(J)
MW-2	8/5/2014	(LFP)	27.32	10.04	0.0	17.28	21,000	--	--	5.7	3.9(J)	920	2,700	<2.5	--	--	0.37(J)	<0.082
MW-2	8/5/2014	(Dup)(LFP)	27.32	10.04	0.0	17.28	17,000	--	--	6.2	4.0	920	2,600	<1.0	--	--	0.49(J)	<0.082
MW-2	12/2/2014	(LFP)	27.32	8.53	0.0	18.79	8,900	3,300	180(J)	4.5	3.6	540	1,000	<0.50	--	--	0.12(J)	--
MW-2	12/2/2014	(Dup)(LFP)	27.32	8.53	0.0	18.79	9,300	2,400	220(J)	4.1	2.5	490	830	0.59(J)	--	--	0.32(J)	--
MW-2	6/5/2015	(LFP)	27.32	9.98	0.0	17.34	7,500	3,400	<66	3.5	1.4	510	620	0.54(J)	--	--	0.32(J)	--
MW-2	6/5/2015	(Dup)(LFP)	27.32	9.98	0.0	17.34	7,700	2,700	<67	3.5	1.3	520	590	0.56(J)	--	--	0.34(J)	--
MW-2	12/15/2015	(LFP)	27.32	7.39	0.0	19.93	830	140	<66	0.50(J)	<0.50	27	5.8	1.2	--	--	--	--
MW-2	12/15/2015	(Dup)(LFP)	27.32	7.39	0.0	19.93	960	110	<69	<0.50	<0.50	29	8.7	1.3	--	--	--	--
MW-2	3/25/2016	(LFP)	27.32	7.84	0.0	19.48	10,000	590	<100	0.74(J)	0.63(J)	400	810	<0.50	--	--	--	--
MW-2	6/7/2016	(LFP)	27.32	9.44	0.0	17.88	28,000	3,100	<100	3.9	2.4	930	1,900	<1.0	--	--	--	--
MW-2	9/19/2016	(LFP)	27.32	10.24	0.0	17.08	7,900	2,300	<110	5.2	1.7	320	200	<0.50	--	--	--	--
MW-2	9/19/2016	(Dup)(LFP)	27.32	10.24	0.0	17.08	7,600	--	--	5.1	1.6	400	190	<0.50	--	--	--	--
MW-3	3/12/2002	(P)	197.49	7.90	0.0	189.59	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	55.7	<1.00
MW-3	8/30/2002	(P)	197.49	10.50	0.0	186.99	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	<0.01	<1.00	63.8	<1.00
MW-3	3/24/2003	(P)	197.49	7.60	0.0	189.89	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	1.8	<1.00
MW-3	4/22/2003	(NS)	197.49	8.60	0.0	188.89	--	--	--	--	--	--	--	--	--	--	--	--

**Table 1
Groundwater Gauging Data and Select Analytical Results
WA-05544**

19918 68th Avenue South, Kent, WA 98032

All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L							800/1,000	500	500	5	1,000	700	1,000	20	0.01	5	15	15
MW-3	6/30/2003	(P)	197.49	9.45	0.0	188.04	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	13.4	3.63
MW-3	9/15/2003	(P)	197.49	10.67	0.0	186.82	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	14	<1.00
MW-3	12/30/2003	(P)	197.49	8.65	0.0	188.84	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	2.17	<1.00
MW-3	7/13/2004	(NS)	197.49	10.27	0.0	187.22	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	11/1/2004	(NP)	197.49	9.50	0.0	187.99	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	<1.00	--
MW-3	3/3/2005	(NP)	197.49	8.42	0.0	189.07	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	<1	--
MW-3	6/12/2005	(NP)	197.49	9.32	0.0	188.17	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	<1.00	--
MW-3	8/28/2005	(NS)	197.49	10.64	0.0	186.85	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	11/17/2005	(NS)	197.49	9.15	0.0	188.34	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	3/5/2006	(NS)	197.49	8.28	0.0	189.21	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	10/24/2006	(NS)	197.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	3/22/2007	(NS)	197.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	5/30/2007	(NS)	197.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	9/4/2007	(NS)	197.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	11/13/2007	(NS)	197.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	3/12/2008	(NP)	197.49	8.85	0.0	188.64	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-3	6/9/2008	(NP)	197.49	7.56	0.0	189.93	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-3	8/6/2008	(NP)	197.49	10.07	0.0	187.42	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-3	10/8/2008	(NP)	197.49	9.62	0.0	187.87	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-3	1/15/2009	(NP)	197.49	7.15	0.0	190.34	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-3	4/2/2009	(NP)	197.49	8.05	0.0	189.44	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	<1.00	<1.00
MW-3	10/14/2009	(NS)	197.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	3/22/2010	(NP)	26.83	7.89	--	18.94	<50	--	--	<1.0	<1.0	<1.0	<3	<1.0	--	--	--	--
MW-3	3/22/2010	(Dup)(NP)	26.83	7.89	--	18.94	<50	--	--	<1.0	<1.0	<1.0	<3	<1.0	--	--	--	--
MW-3	6/22/2010	(NP)	26.83	7.44	--	19.39	<50	--	--	<0.50	<0.50	<0.50	<1.0	<1.0(H)	--	--	--	--
MW-3	3/10/2011	(NP)	26.83	7.54	0.0	19.29	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-3	9/19/2011	(NP)	26.83	9.41	0.0	17.42	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-3	3/16/2012	(NP)	26.83	6.30	0.0	20.53	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-3	7/26/2012	(NS)	26.83	8.90	0.0	17.93	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	3/1/2013	(NS)	26.83	8.44	0.0	18.39	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	5/22/2013	(NP)	26.83	8.55	0.0	18.28	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-3	7/24/2013	(NS)	26.83	9.87	0.0	16.96	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	10/4/2013	(LFP)	26.83	7.72	0.0	19.11	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-3	2/12/2014	(NS)	26.83	8.01	0.0	18.82	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	5/14/2014	(NS)	26.83	7.39	0.0	19.44	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	8/5/2014	(NS)	26.83	9.57	0.0	17.26	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	12/2/2014	(NS)	26.83	7.78	0.0	19.05	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	6/5/2015	(NS)	26.83	9.15	0.0	17.68	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	12/15/2015	(NS)	26.83	6.61	0.0	20.22	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	3/25/2016	(LFP)	26.83	7.19	0.0	19.64	<50	<46	<100	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--
MW-3	6/7/2016	(LFP)	26.83	8.85	0.0	17.98	<50	<46	<100	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--
MW-3	9/19/2016	(LFP)	26.83	9.46	0.0	17.37	<50	<48	<110	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--
MW-4	3/12/2002	(P)	197.68	7.38	0.0	190.30	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	23.2	<1.00
MW-4	8/30/2002	(P)	197.68	10.97	0.0	186.71	1,400	--	--	48	1.05	0.743	124	9.57	<0.01	<1.00	61	<1.00
MW-4	3/24/2003	(P)	197.68	8.65	0.0	189.03	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	5.53	<1.00
MW-4	4/22/2003	(NS)	197.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	6/30/2003	(P)	197.68	10.61	0.0	187.07	903	--	--	28.9	<0.500	<0.500	16.7	<5.00	--	--	9.17	4.56
MW-4	9/15/2003	(P)	197.68	11.16	0.0	186.52	848	--	--	20.5	<0.500	<0.500	3.73	<1.00	--	--	5.15	<1.00
MW-4	12/30/2003	(P)	197.68	9.61	0.0	188.07	144	--	--	1	<0.500	<0.500	2.4	<1.00	--	--	15.1	<1.00
MW-4	7/13/2004	(NS)	197.68	9.98	0.0	187.70	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	11/1/2004	(P)	197.68	10.60	0.0	187.08	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	2.3	--
MW-4	3/3/2005	(NS)	197.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Table 1
Groundwater Gauging Data and Select Analytical Results
WA-05544**

19918 68th Avenue South, Kent, WA 98032

All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L							800/1,000	500	500	5	1,000	700	1,000	20	0.01	5	15	15
MW-4	6/12/2005	(NP)	197.68	9.78	0.0	187.90	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	<1.00	--
MW-4	8/28/2005	(NS)	197.68	11.00	0.0	186.68	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	11/17/2005	(NP)	197.68	9.81	0.0	187.87	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	<1.00	--
MW-4	3/5/2006	(NS)	197.68	9.31	0.0	188.37	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	10/24/2006	(NS)	197.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/22/2007	(NS)	197.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	5/30/2007	(NS)	197.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	9/4/2007	(NS)	197.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	11/13/2007	(NS)	197.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/13/2008	(NP)	197.68	9.72	0.0	187.96	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-4	6/9/2008	(NP)	197.68	9.55	0.0	188.13	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-4	8/6/2008	(NS)	197.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	10/8/2008	(NP)	197.68	10.31	0.0	187.37	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-4	1/15/2009	(NP)	197.68	8.13	0.0	189.55	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-4	4/2/2009	(NP)	197.68	8.13	0.0	189.55	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	<1.00	<1.00
MW-4	10/14/2009	(NS)	197.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/22/2010	(NP)	27.01	8.72	--	18.29	<50	--	--	<1.0	<1.0	<1.0	<3	<1.0	--	--	--	--
MW-4	6/22/2010	(NP, H)	27.01	8.14	--	18.87	<50	--	--	<0.50	<0.50	<0.50	<1.0	<1.0(H)	--	--	--	--
MW-4	3/10/2011	(NP)	27.01	6.73	0.0	20.28	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-4	9/19/2011	(NP)	27.01	9.71	0.0	17.30	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-4	3/16/2012	(NP)	27.01	6.70	0.0	20.31	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-4	7/26/2012	(NS)	27.01	9.55	0.0	17.46	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/1/2013	(NS)	27.01	8.86	0.0	18.15	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	5/22/2013	(NS)	27.01	8.96	0.0	18.05	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	7/24/2013	(NS)	27.01	10.31	0.0	16.70	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	10/4/2013	(LFP)	27.01	8.15	0.0	18.86	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-4	2/12/2014	(NS)	27.01	8.31	0.0	18.70	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	5/14/2014	(NS)	27.01	8.41	0.0	18.60	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	8/5/2014	(NS)	27.01	9.93	0.0	17.08	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	12/2/2014	(NS)	27.01	8.54	0.0	18.47	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	6/5/2015	(NS)	27.01	10.01	0.0	17.00	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	12/15/2015	(NS)	27.01	7.43	0.0	19.58	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	3/25/2016	(NS)	27.01	8.19	0.0	18.82	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	6/7/2016	(NS)	27.01	9.14	0.0	17.87	--	--	--	--	--	--	--	--	--	--	--	--
MW-4	9/19/2016	(NS)	27.01	9.89	0.0	17.12	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	3/12/2002	(P)	198.21	8.82	0.0	189.39	52,100	--	--	7,210	3,770	2,670	9,070	233	--	--	124	<1.00
MW-5	8/30/2002	(P)	198.21	11.20	0.0	187.01	55,200	--	--	15,400	2,200	1,590	7,160	478	<0.01	<100	144	<1.00
MW-5	3/24/2003	(P)	198.21	8.70	0.0	189.51	48,400	--	--	19,900	282	331	1,230	1,540	--	--	14.2	<1.00
MW-5	4/22/2003	(NS)	198.21	9.52	0.0	188.69	--	--	--	--	--	--	--	--	--	--	--	--
MW-5	6/30/2003	(P)	198.21	10.87	0.0	187.34	62,900	--	--	17,900	1,500	1,110	4,070	571	--	--	63.9	8.35
MW-5	9/15/2003	(P)	198.21	11.60	0.0	186.61	61,600	--	--	19,300	554	1,250	4,640	520	--	--	9.75	<1.00
MW-5	12/30/2003	(P)	198.21	9.70	0.0	188.51	52,600	--	--	12,500	1,630	1,910	7,180	307	--	--	9.85	<1.00
MW-5	7/13/2004	(P)	198.21	10.83	0.0	187.38	41,800	--	--	6,090	3,230	2,680	10,500	<100	--	--	2.82	<1.00
MW-5	11/1/2004	(NP)	198.21	8.39	0.0	189.82	6,090	--	--	3,630	<10.0	26	139	925	--	--	<1.00	--
MW-5	3/3/2005	(NP)	198.21	10.83	0.0	187.38	<80.0	--	--	1.8	<2.50	<2.50	<5.00	835	--	--	<1	--
MW-5	6/12/2005	(NP)	198.21	10.30	0.0	187.91	1,110	--	--	129	0.82	33.1	289	196	--	--	<1.00	--
MW-5	8/28/2005	(NP)	198.21	11.30	0.0	186.91	1,330	--	--	116	<0.500	112	53.5	148	--	--	<1.00	--
MW-5	11/17/2005	(NP)	198.21	10.03	0.0	188.18	<50.0	--	--	1.21	<2.50	<2.50	<5.00	161	--	--	4.63	--
MW-5	3/5/2006	(NP)	198.21	9.23	0.0	188.98	143	--	--	8.54	<0.500	11.4	2.66	115	--	--	<1.00	--
MW-5	10/24/2006	(P)	198.21	14.30	0.0	183.91	104	--	--	1.43	<0.500	<0.500	<3.00	91.8	--	--	--	--
MW-5	3/22/2007	(P)	198.21	8.76	0.0	189.45	<50.0	--	--	3.25	<0.500	<0.500	<3.00	79	--	--	--	--
MW-5	5/30/2007	(P)	198.21	10.19	0.0	188.02	3,080	--	--	2,220	6.83	1,210	969	57.6	--	--	--	--

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WA-05544**

19918 68th Avenue South, Kent, WA 98032

All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTC) Method A Cleanup Levels (CULs) in µg/L							800/1,000	500	500	5	1,000	700	1,000	20	0.01	5	15	15
MW-5	9/4/2007	(P)	198.21	10.46	0.0	187.75	1,180	--	--	255	<0.500	8.34	4.99	16	--	--	--	--
MW-5	11/13/2007	(P)	198.21	10.73	0.0	187.48	225	--	--	9.92	<0.500	<0.500	<3.00	17.4	--	--	--	--
MW-5	3/12/2008	(NP)	198.21	9.37	0.0	188.84	511	--	--	45.4	0.5	4.54	34	<1.00	--	--	--	--
MW-5	6/9/2008	(NP)	198.21	8.27	0.0	189.94	243	--	--	4.18	17.9	3.09	66.7	<1.00	--	--	--	--
MW-5	8/6/2008	(NP)	198.21	10.74	0.0	187.47	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-5	10/8/2008	(NP)	198.21	10.80	0.0	187.41	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-5	11/15/2009	(NP)	198.21	8.29	0.0	189.92	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	93.9	--	--	--	--
MW-5	4/2/2009	(NP)	198.21	9.30	0.0	188.91	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	1.39	--	--	<1.00	<1.00
MW-5	10/14/2009	(NP)	198.21	10.30	0.0	187.91	<50.0	--	--	<1.00	<1.00	<1.00	<2.00	<1.00	--	--	<2.00	--
MW-5	3/22/2010	(NP)	27.53	8.93	--	18.60	64	--	--	<1.0	<1.0	<1.0	<3	<1.0	--	--	--	--
MW-5	6/22/2010	(NP, H)	27.53	8.61	--	18.92	140	--	--	<0.50	<0.50	<0.50	<1.0	<1.0(H)	--	--	--	--
MW-5	3/10/2011	(NP)	27.53	7.60	0.0	19.93	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	1.1	--	--	<10.0	<10.0
MW-5	9/19/2011	(NP)	27.53	10.17	0.0	17.36	830	--	--	<1.0	<1.0	3.6	16.6	<1.0	--	--	<10.0	<10.0
MW-5	3/16/2012	(NP)	27.53	7.56	0.0	19.97	167	--	--	<1.0	<1.0	<1.0	<3.0	2.9	--	--	<10.0	<10.0
MW-5	7/26/2012	(NP)	27.53	9.83	0.0	17.70	627	--	--	1.3	<1.0	1.1	11.2	<1.0	--	--	<10.0	<10.0
MW-5	3/1/2013	(NP)	27.53	9.52	0.0	18.01	575	--	--	3.9	<1.0	<1.0	7.8	--	--	--	6.6	<10.0
MW-5	5/22/2013	(NP)	27.53	9.48	0.0	18.05	1,020	--	--	9.5	<1.0	26.0	45.2	1.3	--	--	<10.0	<10.0
MW-5	7/24/2013	(NP)	27.53	10.59	0.0	16.94	589	--	--	2.1	<1.0	<1.0	<3.0	1.1	--	--	27.4	<10.0
MW-5	10/4/2013	(LFP)	27.53	9.23	0.0	18.30	<100	--	--	<1.0	<1.0	<1.0	<3.0	58.0	--	--	<10.0	<10.0
MW-5	10/4/2013	(Dup)(LFP)	27.53	9.23	0.0	18.30	<100	--	--	<1.0	<1.0	<1.0	<3.0	60.6	--	--	<10.0	<10.0
MW-5	2/12/2014	(LFP)	27.53	8.79	0.0	18.74	150(J)	--	--	0.98(J)	<0.70	<0.80	<0.80	1.8(J)	--	--	<4.7	<4.7
MW-5	5/14/2014	(LFP)	27.53	8.44	0.0	19.09	100(J)	--	--	2.3	<0.50	<0.50	<0.50	1.2	--	--	0.12(J)	0.21(J)
MW-5	8/5/2014	(LFP)	27.53	10.35	0.0	17.18	330	--	--	1.3	<0.50	<0.50	1.8	1.5	--	--	0.086(J)	0.10(J)
MW-5	12/2/2014	(LFP)	27.53	9.01	0.0	18.52	93(J)	67(J)	<65	<0.50	<0.50	<0.50	<0.50	31	--	--	0.25(J)	--
MW-5	6/5/2015	(LFP)	27.53	10.28	0.0	17.25	550	1,700	<67	2.6	<0.50	0.68(J)	4.2	2.3	--	--	0.51(J)	--
MW-5	12/15/2015	(LFP)	27.53	7.85	0.0	19.68	73(J)	<28	<66	<0.50	<0.50	<0.50	<0.50	85	--	--	--	--
MW-5	3/25/2016	(LFP)	27.53	8.25	0.0	19.28	220(J)	1,100	<100	1.3	<0.50	<0.50	<0.50	4.1	--	--	--	--
MW-5	6/7/2016	(LFP)	27.53	9.81	0.0	17.72	370	1,500	<110	<0.50	<0.50	<0.50	<0.50	2.2	--	--	--	--
MW-5	9/19/2016	(LFP)	27.53	10.74	0.0	16.79	750	2,300	<110	<0.50	<0.50	<0.50	<0.50	1.5	--	--	--	--
MW-6	3/12/2002	(P)	198.24	8.90	0.0	189.34	187,000	--	--	49,800	27,600	2,650	12,300	6,840	--	--	176	<1.00
MW-6	8/30/2002	(P)	198.24	11.11	--	187.13	105,000	--	--	36,900	6,910	1,410	6,770	1,230	<0.01	<200	157	<1.00
MW-6	3/24/2003	(P)	198.24	8.60	0.0	189.64	101,000	--	--	26,800	7,090	1,690	7,780	2,480	--	--	19.7	<1.00
MW-6	4/22/2003	(NS)	198.24	9.33	0.0	188.91	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	6/30/2003	(P)	198.24	10.35	0.0	187.89	61,700	--	--	18,700	4,610	990	4,030	860	--	--	46.7	2.27
MW-6	9/15/2003	(P)	198.24	11.50	0.0	186.74	109,000	--	--	29,000	8,690	1,720	7,310	1,390	--	--	12.6	<1.00
MW-6	12/30/2003	(P)	198.24	9.60	0.20	188.80	333,000	--	--	45,200	64,400	6,030	31,300	1,960	--	--	1.85	<1.00
MW-6	7/13/2004	(NP)	198.24	10.27	0.08	188.03	513,000	--	--	52,500	98,600	8,300	43,600	3,620	--	--	<1.00	<1.00
MW-6	11/1/2004	(NP)	198.24	10.32	0.0	187.92	123	--	--	29.6	10.4	<5.00	16.5	947	--	--	<1.00	--
MW-6	3/3/2005	(NP)	198.24	13.23	0.0	185.01	<80.0	--	--	<0.400	<1.00	<1.00	<2.00	227	--	--	<1	--
MW-6	6/12/2005	(NP)	198.24	10.17	0.0	188.07	7,780	--	--	431	919	978	4,170	349	--	--	<1.00	--
MW-6	8/28/2005	(NP)	198.24	11.26	0.0	186.98	10,400	--	--	760	207	385	1,660	579	--	--	<1.00	--
MW-6	11/17/2005	(NP)	198.24	10.93	0.0	187.31	<50.0	--	--	0.6	<0.500	<0.500	<1.00	139	--	--	<1.00	--
MW-6	3/5/2006	(NP)	198.24	9.22	0.0	189.02	304	--	--	<0.500	8.16	2.94	54.5	107	--	--	<1.00	--
MW-6	10/24/2006	(P)	198.24	11.21	0.0	187.03	11,800	--	--	570	14.2	608	1,730	1,020	--	--	--	--
MW-6	3/22/2007	(P)	198.24	8.55	0.0	189.69	41,500	--	--	1,100	2,380	2,400	16,300	961	--	--	--	--
MW-6	5/30/2007	(P)	198.24	9.90	0.0	188.34	62,700	--	--	1,260	921	1,990	15,100	307	--	--	--	--
MW-6	9/4/2007	(P)	198.24	10.41	0.0	187.83	91,800	--	--	1,350	2,500	3,480	14,900	<100	--	--	--	--
MW-6	11/13/2007	(P)	198.24	10.54	0.0	187.70	5,380	--	--	196	<0.500	366	76.8	1,300	--	--	--	--
MW-6	3/12/2008	(NP)	198.24	9.45	0.0	188.79	85,300	--	--	1,030	2,270	2,470	17,100	555	--	--	--	--
MW-6	6/9/2008	(NP)	198.24	7.99	0.0	190.25	139,000	--	--	238	--	1,580	164	<1.00	--	--	--	--
MW-6	8/6/2008	(NP)	198.24	10.56	0.0	187.68	69,700	--	--	678	34	2,350	18,900	22.9	--	--	--	--
MW-6	10/8/2008	(NP)	198.24	10.58	0.0	187.66	68,900	--	--	470	24.7	1,130	12,500	95	--	--	--	--

**Table 1
Groundwater Gauging Data and Select Analytical Results
WA-05544**

19918 68th Avenue South, Kent, WA 98032

All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L							800/1,000	500	500	5	1,000	700	1,000	20	0.01	5	15	15
MW-6	1/15/2009	(NP)	198.24	8.21	0.0	190.03	22,500	--	--	182	10.7	746	2,550	687	--	--	--	--
MW-6	4/2/2009	(NP)	198.24	9.08	0.0	189.16	80,100	--	--	415	164	2,240	18,100	57.6	--	--	<1.00	<1.00
MW-6	10/14/2009	(NP)	198.24	9.25	0.0	188.99	71,000	--	--	580	15	3,300	22,000	41	--	--	<2.00	--
MW-6	3/22/2010	(NP)	27.50	8.77	--	18.73	100,000	--	--	480	390	2,500	19,400	6.2	--	--	--	--
MW-6	6/22/2010	(NP, H)	27.50	8.39	--	19.11	96,000	--	--	460	300	2,200	19,000	<50(H)	--	--	--	--
MW-6	3/10/2011	(NP)	27.50	7.51	0.0	19.99	103,000	--	--	314	189	1,150	23,400	<1.0	--	--	<10.0	<10.0
MW-6	9/19/2011	(NP)	27.50	10.47	0.0	17.03	67,900	--	--	300	45.4	1,800	8,320	10.4	--	--	<10.0	<10.0
MW-6	3/16/2012	(NP)	27.50	7.49	0.0	20.01	46,000	--	--	304	19.8	1,640	4,990	10.1	--	--	<10.0	<10.0
MW-6	7/26/2012	(NP)	27.50	9.68	0.0	17.82	51,100	--	--	233	20.5	1,790	5,670	7.3	--	--	<10.0	<10.0
MW-6	3/1/2013	(NP)	27.50	9.73	0.0	17.77	5,040	--	--	4.2	6.0	92.8	1,250	--	--	--	<3.0	<10.0
MW-6	5/22/2013	(NP)	27.50	9.48	0.0	18.02	159	--	--	<1.0	<1.0	4.8	35.7	1.5	--	--	<10.0	<10.0
MW-6	7/24/2013	(NP)	27.50	10.49	0.0	17.01	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-6	10/4/2013	(LFP)	27.50	9.05	0.0	18.45	783	--	--	8.6	1.5	11.3	28.0	1.4	--	--	<10.0	<10.0
MW-6	2/12/2014	(LFP)	27.50	9.14	0.0	18.36	3,400	--	--	4.3(J)	<3.5	55	24(J)	<2.5	--	--	<4.7	<4.7
MW-6	2/12/2014	(Dup)(LFP)	27.50	9.14	0.0	18.36	3,400	--	--	4.7(J)	<3.5	51	23(J)	<2.5	--	--	<4.7	<4.7
MW-6	5/14/2014	(LFP)	27.50	8.05	<2.0	19.45	14,000	--	--	<2.5	<2.5	57	420	<2.5	--	--	0.17(J)	<0.085
MW-6	8/5/2014	(LFP)	27.50	10.31	0.0	17.19	7,500	--	--	3.6(J)	<2.5	120	230	<2.5	--	--	0.15(J)	<0.082
MW-6	12/2/2014	(LFP)	27.50	8.91	0.0	18.59	8,500	2,200	210(J)	5.0	2.7	110	330	2.6	--	--	0.083(J)	--
MW-6	6/5/2015	(LFP)	27.50	10.02	0.0	17.48	6,900	2,000	<66	2.8	0.91(J)	440	420	0.60(J)	--	--	0.37(J)	--
MW-6	12/15/2015	(LFP)	27.50	7.80	0.0	19.70	2,400	170	<66	0.89(J)	<0.50	6.6	3.8	7.7	--	--	--	--
MW-6	3/25/2016	(LFP)	27.50	7.91	0.0	19.59	32,000	2,200	360	1.2(J)	1.5(J)	53	550	<1.0	--	--	--	--
MW-6	3/25/2016	(Dup)(LFP)	27.50	7.91	0.0	19.59	32,000	--	--	<1.0	1.5(J)	50	510	<1.0	--	--	--	--
MW-6	6/7/2016	(LFP)	27.50	9.69	0.0	17.81	22,000	2,300	200(J)	2.4	3.2	100	1,100	<1.0	--	--	--	--
MW-6	6/7/2016	(Dup)(LFP)	27.50	9.69	0.0	17.81	21,000	--	--	2.6	3.7	120	1,100	0.54(J)	--	--	--	--
MW-6	9/19/2016	(LFP)	27.50	10.53	0.0	16.97	11,000	510	<110	3.7	3.6	65	300	1.5	--	--	--	--
MW-7	4/22/2003	(P)	197.32	9.24	0.0	188.08	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	15.8	--
MW-7	6/30/2003	(P)	197.32	10.33	0.0	186.99	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	25	7.06
MW-7	9/15/2003	(P)	197.32	10.82	0.0	186.50	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	14.4	<1.00
MW-7	12/30/2003	(P)	197.32	9.31	0.0	188.01	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	1.35	<1.00
MW-7	7/13/2004	(NS)	197.32	10.38	0.0	186.94	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	11/1/2004	(NP)	197.32	10.20	0.0	187.12	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	<1.00	--
MW-7	3/3/2005	(NP)	197.32	9.80	0.0	187.52	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	<1	--
MW-7	6/12/2005	(NP)	197.32	9.49	0.0	187.83	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	1.38	--
MW-7	8/28/2005	(NS)	197.32	10.63	0.0	186.69	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	11/17/2005	(NS)	197.32	9.54	0.0	187.78	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	3/5/2006	(NS)	197.32	8.96	0.0	188.36	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	10/24/2006	(NS)	197.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	3/22/2007	(NS)	197.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	5/30/2007	(NS)	197.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	9/4/2007	(NS)	197.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	11/13/2007	(NS)	197.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	3/12/2008	(NP)	197.32	9.42	0.0	187.90	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-7	6/9/2008	(NP)	197.32	9.29	0.0	188.03	<50.0	--	--	<0.500	3.18	1.67	32.5	<1.00	--	--	--	--
MW-7	8/6/2008	(NS)	197.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	10/8/2008	(NS)	197.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	1/15/2009	(NP)	197.32	7.65	0.0	189.67	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-7	4/2/2009	(NP)	197.32	8.52	0.0	188.80	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	<1.00	<1.00
MW-7	10/14/2009	(NS)	197.32	8.97	0.0	188.35	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	3/22/2010	(NP)	26.64	8.39	--	18.25	<50	--	--	<1.0	<1.0	<1.0	<3	<1.0	--	--	--	--
MW-7	6/22/2010	(NP, H)	26.64	7.82	--	18.82	<50	--	--	<0.50	<0.50	<0.50	<1.0	<1.0(H)	--	--	--	--
MW-7	3/10/2011	(NP)	26.64	6.27	0.0	20.37	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-7	9/19/2011	(NP)	26.64	9.38	0.0	17.26	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0

**Table 1
Groundwater Gauging Data and Select Analytical Results
WA-05544**

19918 68th Avenue South, Kent, WA 98032

All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L							800/1,000	500	500	5	1,000	700	1,000	20	0.01	5	15	15
MW-7	3/16/2012	(NP)	26.64	6.31	0.0	20.33	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-7	7/26/2012	(NS)	26.64	9.26	0.0	17.38	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	3/1/2013	(NS)	26.64	8.52	0.0	18.12	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	5/22/2013	(NS)	26.64	8.60	0.0	18.04	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	7/24/2013	(NS)	26.64	9.97	0.0	16.67	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	10/4/2013	(NS)	26.64	7.82	0.0	18.82	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	2/12/2014	(NS)	26.64	7.91	0.0	18.73	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	5/14/2014	(NG)	26.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	8/5/2014	(NS, NG)	26.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	12/2/2014	(NS)	26.64	8.13	0.0	18.51	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	6/5/2015	(NS)	26.64	9.86	0.0	16.78	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	12/15/2015	(NS)	26.64	6.50	0.0	20.14	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	3/25/2016	(NS)	26.64	8.00	0.0	18.64	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	6/7/2016	(NS)	26.64	8.77	0.0	17.87	--	--	--	--	--	--	--	--	--	--	--	--
MW-7	9/19/2016	(NS)	26.64	9.58	0.0	17.06	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	4/22/2003	(P)	196.68	8.45	0.0	188.23	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	14.7	--
MW-8	6/30/2003	(P)	196.68	9.61	0.0	187.07	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	12.8	4.24
MW-8	9/15/2003	(P)	196.68	10.20	0.0	186.48	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	16.9	<1.00
MW-8	12/30/2003	(P)	196.68	8.60	0.0	188.08	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	1.53	<1.00
MW-8	7/13/2004	(NS)	196.68	9.56	0.0	187.12	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	11/1/2004	(NP)	196.68	9.45	0.0	187.23	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	<1.00	--
MW-8	3/3/2005	(NP)	196.68	8.94	0.0	187.74	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	<1	--
MW-8	6/12/2005	(NP)	196.68	8.81	0.0	187.87	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	<1.00	--
MW-8	8/28/2005	(NS)	196.68	9.97	0.0	186.71	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	11/17/2005	(NS)	196.68	8.85	0.0	187.83	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/5/2006	(NS)	196.68	8.16	0.0	188.52	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	10/24/2006	(NS)	196.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/22/2007	(NS)	196.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	5/30/2007	(NS)	196.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	9/4/2007	(NS)	196.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	11/13/2007	(NS)	196.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/12/2008	(NP)	196.68	8.68	0.0	188.00	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-8	6/9/2008	(NP)	196.68	8.51	0.0	188.17	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-8	8/6/2008	(NS)	196.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	10/8/2008	(NS)	196.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	1/15/2009	(NP)	196.68	7.13	0.0	189.55	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-8	4/2/2009	(NP)	196.68	7.80	0.0	188.88	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	<1.00	<1.00
MW-8	10/14/2009	(NS)	196.68	8.45	0.0	188.23	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/22/2010	(NP)	26.00	7.59	--	18.41	<50	--	--	<1.0	<1.0	<1.0	<3	<1.0	--	--	--	--
MW-8	6/22/2010	(NP, H)	26.00	7.23	--	18.77	<50	--	--	<0.50	<0.50	<0.50	<1.0	<1.0(H)	--	--	--	--
MW-8	3/10/2011	(NP)	26.00	5.56	0.0	20.44	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-8	9/19/2011	(NP)	26.00	8.76	0.0	17.24	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-8	3/16/2012	(NP)	26.00	5.68	0.0	20.32	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-8	7/26/2012	(NS)	26.00	8.52	0.0	17.48	--	--	--	--	--	--	--	--	--	--	--	--
MW-8	3/1/2013	(Abandoned)	26.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	4/22/2003	(P)	197.42	8.77	0.0	188.65	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	17.2	--
MW-9	6/30/2003	(P)	197.42	10.25	0.0	187.17	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	47.3	4.67
MW-9	9/15/2003	(P)	197.42	10.83	0.0	186.59	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	12.9	<1.00
MW-9	12/30/2003	(P)	197.42	8.99	0.0	188.43	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	17.9	<1.00
MW-9	7/13/2004	(NS)	197.42	10.08	0.0	187.34	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	11/1/2004	(NP)	197.42	9.75	0.0	187.67	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	1.79	--

**Table 1
Groundwater Gauging Data and Select Analytical Results
WA-05544**

19918 68th Avenue South, Kent, WA 98032

All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTC) Method A Cleanup Levels (CULs) in µg/L							800/1,000	500	500	5	1,000	700	1,000	20	0.01	5	15	15
MW-9	3/3/2005	(NP)	197.42	8.98	0.0	188.44	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	<1	--
MW-9	6/12/2005	(NP)	197.42	9.49	0.0	187.93	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	<1.00	--
MW-9	8/28/2005	(NS)	197.42	10.59	0.0	186.83	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	11/17/2005	(NS)	197.42	9.52	0.0	187.90	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/5/2006	(NS)	197.42	8.55	0.0	188.87	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	10/24/2006	(NS)	197.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/22/2007	(NS)	197.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	5/30/2007	(NS)	197.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	9/4/2007	(NS)	197.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	11/13/2007	(NS)	197.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/12/2008	(NP)	197.42	9.20	0.0	188.22	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-9	6/9/2008	(NP)	197.42	8.91	0.0	188.51	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-9	8/6/2008	(NP)	197.42	10.18	0.0	187.24	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-9	10/8/2008	(NP)	197.42	10.10	0.0	187.32	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-9	1/15/2009	(NP)	197.42	7.61	0.0	189.81	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-9	4/2/2009	(NP)	197.42	8.50	0.0	188.92	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	1.32	<1.00
MW-9	10/14/2009	(NS)	197.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/22/2010	(NP)	26.76	8.41	--	18.35	<50	--	--	<1.0	<1.0	<1.0	<3	<1.0	--	--	--	--
MW-9	6/22/2010	(NP, H)	26.76	7.88	--	18.88	<50	--	--	<0.50	<0.50	<0.50	<1.0	<1.0(H)	--	--	--	--
MW-9	3/10/2011	(NP)	26.76	6.57	0.0	20.19	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-9	9/19/2011	(NP)	26.76	9.62	0.0	17.14	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-9	3/16/2012	(NP)	26.76	6.59	0.0	20.17	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-9	7/26/2012	(NS)	26.76	9.16	0.0	17.60	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	3/1/2013	(NS)	26.76	8.62	0.0	18.14	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	5/22/2013	(NS)	26.76	8.95	0.0	17.81	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	7/24/2013	(NS)	26.76	9.86	0.0	16.90	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	10/4/2013	(NS)	26.76	8.25	0.0	18.51	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	2/12/2014	(NS)	26.76	8.24	0.0	18.52	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	5/14/2014	(NS)	26.76	7.84	0.0	18.92	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	8/5/2014	(NS)	26.76	9.71	0.0	17.05	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	12/2/2014	(NS)	26.76	8.32	0.0	18.44	--	--	--	--	--	--	--	--	--	--	--	--
MW-9	6/5/2015	(LFP)	26.76	9.68	0.0	17.08	<50	<29	<67	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	0.15(J)	--
MW-9	12/15/2015	(LFP)	26.76	7.14	0.0	19.62	<50	<28	<66	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--
MW-9	3/25/2016	(LFP)	26.76	7.72	0.0	19.04	<50	<46	<100	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--
MW-9	6/7/2016	(LFP)	26.76	9.02	0.0	17.74	<50	<47	<100	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--
MW-9	9/19/2016	(LFP)	26.76	9.93	0.0	16.83	<50	<47	<110	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--
MW-10	4/22/2003	(P)	197.70	8.59	0.0	189.11	278	--	--	30.9	<0.500	<0.500	28.5	<2.00	--	--	5.92	--
MW-10	6/30/2003	(P)	197.70	10.48	0.0	187.22	195	--	--	38	<0.500	0.535	5.73	<5.00	--	--	19.8	11.7
MW-10	9/15/2003	(P)	197.70	10.93	0.0	186.77	154	--	--	42	0.5	<0.500	4.18	<1.00	--	--	7.69	<1.00
MW-10	12/30/2003	(P)	197.70	8.81	0.0	188.89	312	--	--	39.3	<0.500	<0.500	24.6	<1.00	--	--	8.78	<1.00
MW-10	7/13/2004	(NS)	197.70	10.35	0.0	187.35	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	11/1/2004	(NP)	197.70	8.55	0.0	189.15	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	<1.00	--
MW-10	3/3/2005	(NP)	197.70	9.40	0.0	188.30	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	<1	--
MW-10	6/12/2005	(NP)	197.70	9.59	0.0	188.11	<80.0	--	--	<0.200	<0.500	<0.500	<1.00	<2.00	--	--	<1.00	--
MW-10	8/28/2005	(NS)	197.70	10.75	0.0	186.95	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	11/17/2005	(NP)	197.70	9.79	0.0	187.91	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	<1.00	--
MW-10	3/5/2006	(NS)	197.70	8.40	0.0	189.30	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	10/24/2006	(NS)	197.70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	3/22/2007	(NS)	197.70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	5/30/2007	(NS)	197.70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	9/4/2007	(NS)	197.70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	11/13/2007	(NS)	197.70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Table 1
Groundwater Gauging Data and Select Analytical Results
WA-05544**

19918 68th Avenue South, Kent, WA 98032

All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTC) Method A Cleanup Levels (CULs) in µg/L							800/1,000	500	500	5	1,000	700	1,000	20	0.01	5	15	15
MW-10	3/12/2008	(NP)	197.70	9.11	0.0	188.59	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-10	6/9/2008	(NP)	197.70	8.55	0.0	189.15	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-10	8/6/2008	(NS)	197.70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	10/8/2008	(NS)	197.70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	1/15/2009	(NP)	197.70	7.66	0.0	190.04	<50.0	--	--	<0.500	<0.500	<0.500	<3.00	<1.00	--	--	--	--
MW-10	4/2/2009	(NP)	197.70	8.55	0.0	189.15	<50.0	--	--	<0.500	<0.500	<0.500	<1.00	<1.00	--	--	<1.00	<1.00
MW-10	10/14/2009	(NS)	197.70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	3/22/2010	(NP)	27.01	8.18	--	18.83	<50	--	--	<1.0	<1.0	<1.0	<3	<1.0	--	--	--	--
MW-10	6/22/2010	(NP, H)	27.01	7.98	--	19.03	<50	--	--	<0.50	<0.50	<0.50	<1.0	<50(H)	--	--	--	--
MW-10	3/10/2011	(NP)	27.01	7.11	0.0	19.90	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-10	9/19/2011	(NP)	27.01	9.80	0.0	17.21	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-10	3/16/2012	(NP)	27.01	7.01	0.0	20.00	<50.0	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-10	7/26/2012	(NS)	27.01	9.12	0.0	17.89	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	3/1/2013	(NS)	27.01	8.81	0.0	18.20	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	5/22/2013	(NP)	27.01	8.99	0.0	18.02	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	<10.0
MW-10	7/24/2013	(NS)	27.01	9.89	0.0	17.12	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	10/4/2013	(LFP)	27.01	8.80	0.0	18.21	<100	--	--	<1.0	<1.0	<1.0	<3.0	<1.0	--	--	<10.0	11.0
MW-10	2/12/2014	(NS)	27.01	8.69	0.0	18.32	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	5/14/2014	(NS)	27.01	7.52	0.0	19.49	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	8/5/2014	(NS)	27.01	9.85	0.0	17.16	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	12/2/2014	(NS)	27.01	8.51	0.0	18.50	--	--	--	--	--	--	--	--	--	--	--	--
MW-10	6/5/2015	(LFP)	27.01	9.64	0.0	17.37	120(J)	<29	<67	<0.50	<0.50	4.6	8.0	<0.50	--	--	<0.082	--
MW-10	12/15/2015	(LFP)	27.01	7.80	0.0	19.21	<50	<29	<67	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--
MW-10	3/25/2016	(LFP)	27.01	7.38	0.0	19.63	<50	<47	<100	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--
MW-10	6/7/2016	(LFP)	27.01	9.36	0.0	17.65	<50	<47	<100	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--
MW-10	9/19/2016	(LFP)	27.01	10.07	0.0	16.94	<50	<49	<110	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--
MW-11	8/5/2014	(NS)	26.88	9.82	0.0	17.06	--	--	--	--	--	--	--	--	--	--	--	--
MW-11	8/7/2014	(LFP)	26.88	--	--	--	<50	--	--	0.75(J)	<0.50	0.68(J)	1.4	<0.50	--	--	38.6	2.7
MW-11	12/2/2014	(LFP)	26.88	8.31	0.0	18.57	<50	<28	<66	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	0.34(J)	--
MW-11	6/5/2015	(LFP)	26.88	9.90	0.0	16.98	<50	<28	<66	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	1.2	--
MW-11	12/15/2015	(LFP)	26.88	7.31	0.0	19.57	<50	<28	<66	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--
MW-11	3/25/2016	(LFP)	26.88	7.90	0.0	18.98	<50	<46	<100	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--
MW-11	6/7/2016	(LFP)	26.88	9.08	0.0	17.80	<50	<48	<110	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--
MW-11	9/19/2016	(LFP)	26.88	9.96	0.0	16.92	<50	<47	<110	<0.50	<0.50	<0.50	<0.50	<0.50	--	--	--	--
MW-12	8/5/2014	(NS)	27.26	10.25	0.0	17.01	--	--	--	--	--	--	--	--	--	--	--	--
MW-12	8/7/2014	(LFP)	27.26	--	--	--	3,100	--	--	700	2.1	280	580	88	--	--	4.7	0.15(J)
MW-12	12/2/2014	(LFP)	27.26	8.99	0.0	18.27	2,000	430	130(J)	310	0.75(J)	270	360	96	--	--	0.53(J)	--
MW-12	6/5/2015	(LFP)	27.26	10.03	0.0	17.23	4,800	570	<66	120	3.2	610	480	<0.50	--	--	0.30(J)	--
MW-12	12/15/2015	(LFP)	27.26	7.75	0.0	19.51	550	110	<66	10	<0.50	51	15	110	--	--	--	--
MW-12	3/25/2016	(LFP)	27.26	7.93	0.0	19.33	85(J)	<48	<110	<0.50	<0.50	3.9	2.2	0.82(J)	--	--	--	--
MW-12	6/7/2016	(LFP)	27.26	9.68	0.0	17.58	1,400	470	<100	5.1	<0.50	150	48	0.64(J)	--	--	--	--
MW-12	9/19/2016	(LFP)	27.26	10.64	0.0	16.62	1,900	1,200	<110	12	0.93(J)	240	54	<0.50	--	--	--	--
MW-13	8/5/2014	(NS)	27.27	10.21	0.0	17.06	--	--	--	--	--	--	--	--	--	--	--	--
MW-13	8/7/2014	(LFP)	27.27	--	--	--	1,000	--	--	2.0	<0.50	12	94	90	--	--	6.1	0.30(J)
MW-13	12/2/2014	(LFP)	27.27	8.88	0.0	18.39	11,000	950	230(J)	1.2	0.92(J)	91	690	25	--	--	0.19(J)	--
MW-13	6/5/2015	(LFP)	27.27	10.05	0.0	17.22	9,200	1,000	<66	1.0	0.71(J)	80	470	17	--	--	0.19(J)	--
MW-13	12/15/2015	(LFP)	27.27	7.80	0.0	19.47	6,000	410	<67	1.1	<0.50	43	150	13	--	--	--	--
MW-13	3/25/2016	(LFP)	27.27	7.85	0.0	19.42	30,000	1,300	<100	<1.0	<1.0	68	780	<1.0	--	--	--	--
MW-13	6/7/2016	(LFP)	27.27	9.66	0.0	17.61	18,000	1,400	<100	1.6	1.4	100	680	4.5	--	--	--	--
MW-13	9/19/2016	(LFP)	27.27	10.53	0.0	16.74	6,000	690	<100	2.3	1.4	110	290	3.3	--	--	--	--

Table 1
Groundwater Gauging Data and Select Analytical Results
WA-05544

19918 68th Avenue South, Kent, WA 98032

All analytical results are presented in micrograms per liter (µg/L)

Well	Date	Notes	TOC	DTW	NAPL	GWE	GRO	DRO	HO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	EDB	EDC	Total Lead	Dissolved Lead
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L							800/1,000	500	500	5	1,000	700	1,000	20	0.01	5	15	15

TOC = Top of casing in feet North American Vertical Datum of 1988 (NAVD 88)
DTW = Depth to water in feet below TOC
NAPL = Non-aqueous phase liquid thickness in feet
GWE = Groundwater elevation in feet NAVD 88
GRO = Total petroleum hydrocarbons - gasoline range organics
DRO = Total petroleum hydrocarbons - diesel range organics
HO = Total petroleum hydrocarbons - heavy oil range organics
MTBE = Methyl tertiary butyl ether
EDB = Ethylene dibromide
EDC = 1,2-Dichloroethane
800/1,000 = GRO MTCA Method A CUL with benzene present is 800 µg/L and without is 1,000 µg/L
P = Purge sample
< = Analytical result is less than reporting limit shown
-- = Not analyzed/not applicable
NS = Not sampled
NP = No purge sample
DUP = Duplicate sample
H = Sample was prepped or analyzed beyond the specified holding time
LF/LFP = Low flow (purge) sample
J = estimated value - The result is greater than or equal to the Method Detection Limit (MDL) and less than the Limit of Quantitation (LOQ)
NG = Not gauged
Wells were resurveyed in 2010 and are referenced to vertical datum NAVD 88 and horizontal datum NAD 83/98
If NAPL is present, the GWE is corrected according to the following formula (TOC elevation - depth to water) + (0.8 x NAPL thickness)
Data collected prior to 2010 have been provided by previous consultants and are included as historical reference only
GRO, DRO, HO analyzed by Ecology Northwest Methods: Benzene, toluene, ethylbenzene, and total xylenes (BTEX), MTBE, and EDB by 8260B; Lead by U.S. Environmental Protection

BOLD constituent detected above MTCA Cleanup Levels

Table 2
Polycyclic Aromatic Hydrocarbons Analytical Results
WA-05544
19918 68th Ave. South, Kent WA

All analytical results are presented in micrograms per liter (µg/L)

Well ID	Date	Notes	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Total Naphthalenes	Total cPAHs
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L			--	0.1	--	--	--	--	--	--	--	--	160	0.1
MW-2	6/5/2015	LFP	ND<0.10	ND<0.10	ND<0.10	ND<0.10	ND<0.10	ND<0.10	ND<0.10	25	25	190	240	ND<0.0755
MW-2	6/5/2015	DUP/LFP	ND<0.10	ND<0.10	ND<0.10	ND<0.10	ND<0.10	ND<0.10	ND<0.10	22	23	200	245	ND<0.0755
MW-2	12/15/2015	LFP	ND<0.010	ND<0.010	0.019 J	0.015 J	ND<0.010	0.026 J	0.026 J	4.3	0.39	2.2	6.89	0.01415
MW-2	12/15/2015	DUP/LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	4.3	0.25	1.9	6.45	ND<0.00755
MW-2	3/25/2016	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	--	--	--	--	ND<0.00755
MW-2	6/7/2016	LFP	--	--	--	--	--	--	--	47	60	390	497	--
MW-2	9/19/2016	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	--	--	--	--	ND<0.00755
MW-2	9/19/2016	DUP/LFP	--	--	--	--	--	--	--	--	--	--	--	--
MW-3	3/25/2016	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	--	--	--	--	ND<0.00755
MW-3	6/7/2016	LFP	--	--	--	--	--	--	--	ND<0.011	ND<0.011	ND<0.032	ND<0.027	--
MW-3	9/19/2016	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	--	--	--	--	ND<0.00755
MW-5	6/5/2015	LFP	ND<0.010	ND<0.010	ND<0.010	0.011 J	0.022 J	ND<0.010	ND<0.010	2.0	0.076	13	15.1	0.00832
MW-5	12/15/2015	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	0.055	ND<0.010	0.22	0.28	ND<0.00755
MW-5	3/25/2016	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	--	--	--	--	ND<0.00755
MW-5	6/7/2016	LFP	--	--	--	--	--	--	--	0.16	0.012 J	1.7	1.872	--
MW-5	9/19/2016	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	--	--	--	--	ND<0.00755
MW-6	6/5/2015	LFP	ND<0.10	ND<0.10	ND<0.10	ND<0.10	ND<0.10	ND<0.10	ND<0.10	23	20	170	213	ND<0.0755
MW-6	12/15/2015	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	8.8	1.6	6.6	17.0	ND<0.00755
MW-6	3/25/2016	LFP	0.016 J	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	--	--	--	--	0.00865
MW-6	3/25/2016	DUP/LFP	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	6/7/2016	LFP	--	--	--	--	--	--	--	29	26	120	175	--
MW-6	6/7/2016	DUP/LFP	--	--	--	--	--	--	--	--	--	--	--	--
MW-6	9/19/2016	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	0.015 J	ND<0.010	ND<0.010	--	--	--	--	0.00765
MW-9	6/5/2015	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.030	ND<0.025	ND<0.00755
MW-9	12/15/2015	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.030	ND<0.025	ND<0.00755
MW-9	3/25/2016	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	--	--	--	--	ND<0.00755
MW-9	6/7/2016	LFP	--	--	--	--	--	--	--	ND<0.011	ND<0.011	ND<0.032	ND<0.027	--
MW-9	9/19/2016	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	--	--	--	--	ND<0.00755
MW-10	6/5/2015	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	0.013 J	0.011 J	0.13	0.14	0.87	1.14	0.00895
MW-10	12/15/2015	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.030	ND<0.025	ND<0.00755
MW-10	3/25/2016	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	--	--	--	--	ND<0.00755
MW-10	6/7/2016	LFP	--	--	--	--	--	--	--	ND<0.011	ND<0.011	ND<0.032	ND<0.027	--
MW-10	9/19/2016	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	--	--	--	--	ND<0.00755

Table 2
Polycyclic Aromatic Hydrocarbons Analytical Results
WA-05544
19918 68th Ave. South, Kent WA

All analytical results are presented in micrograms per liter (µg/L)

Well ID	Date	Notes	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene	1-Methylnaphthalene	2-Methylnaphthalene	Naphthalene	Total Naphthalenes	Total cPAHs
Model Toxics Control Act (MTCA) Method A Cleanup Levels (CULs) in µg/L			--	0.1	--	--	--	--	--	--	--	--	160	0.1
MW-11	6/5/2015	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.031	ND<0.0255	ND<0.00755
MW-11	12/15/2015	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.030	ND<0.025	ND<0.00755
MW-11	3/25/2016	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	--	--	--	--	ND<0.00755
MW-11	6/7/2016	LFP	--	--	--	--	--	--	--	ND<0.010	ND<0.010	ND<0.031	ND<0.0255	--
MW-11	9/19/2016	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	--	--	--	--	ND<0.00755
MW-12	6/5/2015	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	1.8	0.082	12	13.9	ND<0.00755
MW-12	12/15/2015	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	0.13	0.084	9.1	9.31	ND<0.00755
MW-12	3/25/2016	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	--	--	--	--	ND<0.00755
MW-12	6/7/2016	LFP	--	--	--	--	--	--	--	1.1	0.85	19	20.95	--
MW-12	9/19/2016	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	--	--	--	--	ND<0.00755
MW-13	6/5/2015	LFP	ND<0.10	ND<0.10	ND<0.10	ND<0.10	ND<0.10	ND<0.10	ND<0.10	28	29	190	247	ND<0.0755
MW-13	12/15/2015	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	11	5.2	43	59.2	ND<0.00755
MW-13	3/25/2016	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	--	--	--	--	ND<0.00755
MW-13	6/7/2016	LFP	--	--	--	--	--	--	--	25	21	130	176	--
MW-13	9/19/2016	LFP	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	--	--	--	--	ND<0.00755

Notes:

-- = Not analyzed/not applicable

LFP = Low Flow purge sample

DUP = Duplicate Sample

ND < = Analytical result is less than reporting limit shown

J = estimated value – The result is greater than or equal to the Method Detection Limit (MDL) and less than the Limit of Quantitation (LOQ)

cPAHs = Carcinogenic Polycyclic Aromatic Hydrocarbons

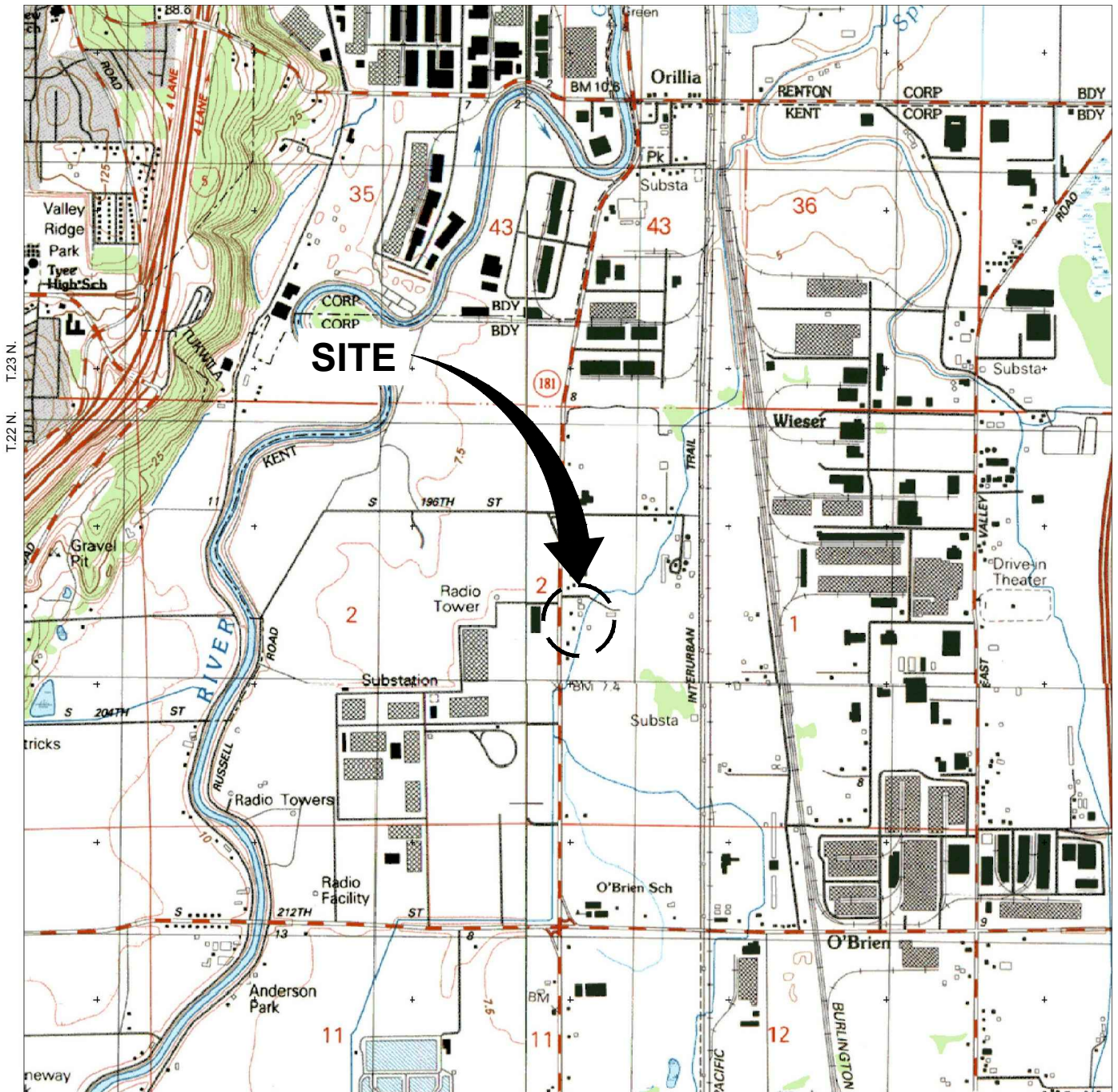
cPAHs and Naphthalenes analyzed by U.S. Environmental Protection Agency (EPA) 8270C SIM

cPAHs adjusted for toxicity according to Washington State Administrative Code 173-340-708(8). If one or more adjusted cPAH constituents were reported as Non-Detect, half of the reporting limit was used in Naphthalenes is a sum total of 1-methyl-naphthalene, 2-methyl-naphthalene, and naphthalene. If one or more constituents were reported as Non-Detect, half of the reporting limit was used in calculations.

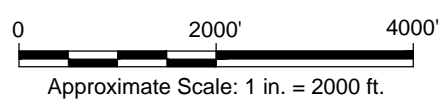
BOLD concentration greater than the MTCA Method A cleanup level

FIGURES





REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., BURIEN & RENTON, WA., PHOTOREVISED 1983.



BP WEST COAST PRODUCTS, LLC.
 FORMER ARCO FACILITY No. 5544
 19918 68TH AVENUE SOUTH, KENT, WASHINGTON
2016 ANNUAL SITE STATUS REPORT

SITE LOCATION MAP

CITY: (Repd) DIV/GROUP: (Repd) DB: (Repd) LD: (Opt) PIC: (Opt) PM: (Repd) TM: (Opt) LVR: (Opt) ON: "OFF" = "REF" = "K:\Environment - Arcadis\ARCADIS-USA, PROJECTS\BP - Foglove\BP - Washington\WA-05544\2016 SSRE-Drawings\GEC Bangalore 2016\2016 03\G08\BPNAWA39 W01_2.dwg" LAYOUT: 2.2 SAVED: 1/19/2017 5:44 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 2/8/2017 1:29 PM BY: DEVESH KAMBLE

MW-9	
Date	3/25/2016
GRO	<50
DRO	<46
HO	<100
B	<0.50
T	<0.50
E	<0.50
X	<0.50
MTBE	<0.50
cPAHs	<0.00755

MW-12	
Date	3/25/2016
GRO	85(J)
DRO	<48
HO	<110
B	<0.50
T	<0.50
E	3.9
X	2.2
MTBE	0.82(J)
cPAHs	<0.00755

MW-13	
Date	3/25/2016
GRO	30,000
DRO	1,300
HO	<100
B	<1.0
T	<1.0
E	68
X	780
MTBE	<1.0
cPAHs	<0.00755

MW-10	
Date	3/25/2016
GRO	<50
DRO	<47
HO	<100
B	<0.50
T	<0.50
E	<0.50
X	<0.50
MTBE	<0.50
cPAHs	<0.00755

MW-6	
Date	3/25/2016
GRO	32,000 / [32,000]
DRO	2,200 / [--]
HO	360 / [--]
B	1.2(J) / [<1.0]
T	1.5(J) / [1.5(J)]
E	53 / [50]
X	550 / [510]
MTBE	<1.0 / [<1.0]
cPAHs	0.00865 / [--]

MW-5	
Date	3/25/2016
GRO	220(J)
DRO	1,100
HO	<100
B	1.3
T	<0.50
E	<0.50
X	<0.50
MTBE	4.1
cPAHs	<0.00755

MW-11	
Date	3/25/2016
GRO	<50
DRO	<46
HO	<100
B	<0.50
T	<0.50
E	<0.50
X	<0.50
MTBE	<0.50
cPAHs	<0.00755

MW-2	
Date	3/25/2016
GRO	10,000
DRO	590
HO	<100
B	0.74(J)
T	0.63(J)
E	400
X	810
MTBE	<0.50
cPAHs	<0.00755

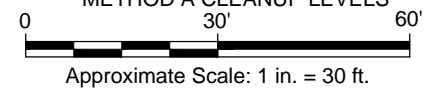
MW-3	
Date	3/25/2016
GRO	<50
DRO	<46
HO	<100
B	<0.50
T	<0.50
E	<0.50
X	<0.50
MTBE	<0.50
cPAHs	<0.00755

- LEGEND:
- PROPERTY BOUNDARY
 - MW-1 ● MONITORING WELL LOCATION
 - SVE-4 ⊙ VAPOR EXTRACTION WELL LOCATION
 - AS-11 △ AIR SPARGE WELL LOCATION
 - MW-8 ⊗ ABANDONED MONITORING WELL
 - (19.64) GROUNDWATER ELEVATION (FEET ABOVE NAVD 88)
 - 18.80 --- GROUNDWATER ELEVATION CONTOUR (FEET ABOVE NAVD 88, DASHED WHERE INFERRED)
 - < NOT DETECTED, VALUE SHOWN IS THE METHOD DETECTION LIMIT (MDL)
 - J ESTIMATED VALUE - RESULT GREATER THAN OR EQUAL TO MDL AND LESS THAN THE LIMIT OF QUANTITATION (LOQ)
 - (NS) NOT SAMPLED
 - NAVD88 NORTH AMERICAN VERTICAL DATUM 1988
 - NOT ANALYZED

SAMPLE ID	
Date	Date of Sample
GRO	Total Petroleum Hydrocarbons (TPH) in the Gasoline Range Organics / [Duplicate]
DRO	TPH in the Diesel Range Organics / [Duplicate]
HO	TPH in the Heavy Oil Range Organics / [Duplicate]
B	Benzene / [Duplicate]
T	Toluene / [Duplicate]
E	Ethylbenzene / [Duplicate]
X	Total Xylenes / [Duplicate]
MTBE	Methyl Tertiary Butyl Ether / [Duplicate]
cPAHs	Total Carcinogenic Polycyclic Aromatic Hydrocarbons / [Duplicate]

NOTES:
 ALL CONCENTRATIONS ARE MEASURED IN MICROGRAMS PER LITER (µg/L)
 TOTAL cPAHs WERE CALCULATED ACCORDING TO MTCA CLEANUP REGULATION TABLE 720-Id&r

BOLD = ANALYTE DETECTED ABOVE MODEL TOXICS CONTROL ACT (MTCA) METHOD A CLEANUP LEVELS



BP WEST COAST PRODUCTS, LLC.
 FORMER ARCO FACILITY No. 5544
 19918 68TH AVENUE SOUTH, KENT, WASHINGTON
 2016 ANNUAL SITE STATUS REPORT

GROUNDWATER CONTOUR MAP WITH ANALYTICAL RESULTS MARCH 25, 2016

CITY: (Red) DIV/GROUP: (Red) DE: (Red) LD: (Opt) PIC: (Opt) PM: (Red) TM: (Opt) LYR: (Opt) ON: OFF: REF:
 Environment - Arcadis/ARCADIS/USA PROJECTS/SP Fongfovea/BP Washington/WA-65442016 SSRIE/Drawings/GEC Bangalore 2016/2016 03/09/09BPNWA39 W03_3.dwg
 LAYOUT: 3 SAVED: 2/2/2017 2:50 PM ACADYER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB
 PLOTTED: 2/2/2017 5:44 PM BY: DEVESH KAMBLE

MW-9	
Date	6/7/2016
GRO	<50
DRO	<47
HO	<100
B	<0.50
T	<0.50
E	<0.50
X	<0.50
MTBE	<0.50
Naph	<0.027

MW-12	
Date	6/7/2016
GRO	1,400
DRO	470
HO	<100
B	5.1
T	<0.50
E	150
X	48
MTBE	0.64(J)
Naph	20.95

MW-13	
Date	6/7/2016
GRO	18,000
DRO	1,400
HO	<100
B	1.6
T	1.4
E	100
X	680
MTBE	4.5
Naph	176

MW-10	
Date	6/7/2016
GRO	<50
DRO	<47
HO	<100
B	<0.50
T	<0.50
E	<0.50
X	<0.50
MTBE	<0.50
Naph	<0.027

MW-6	
Date	6/7/2016
GRO	22,000 / [21,000]
DRO	2,300 / [--]
HO	200(J) / [--]
B	2.4 / [2.6]
T	3.2 / [3.7]
E	100 / [120]
X	1,100 / [1,100]
MTBE	<1.0 / [0.54(J)]
Naph	175 / [--]

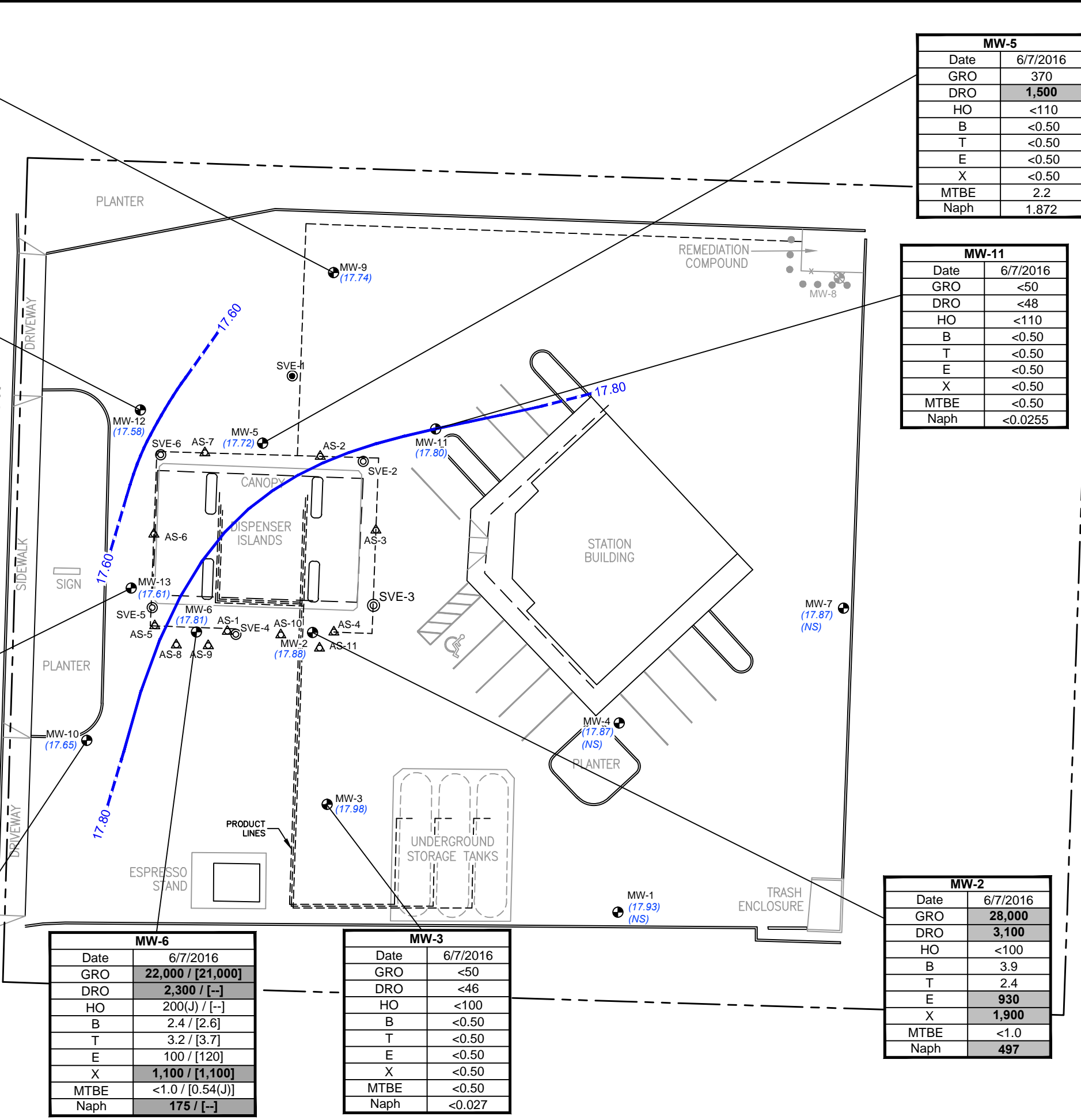
MW-3	
Date	6/7/2016
GRO	<50
DRO	<46
HO	<100
B	<0.50
T	<0.50
E	<0.50
X	<0.50
MTBE	<0.50
Naph	<0.027

MW-2	
Date	6/7/2016
GRO	28,000
DRO	3,100
HO	<100
B	3.9
T	2.4
E	930
X	1,900
MTBE	<1.0
Naph	497

MW-11	
Date	6/7/2016
GRO	<50
DRO	<48
HO	<110
B	<0.50
T	<0.50
E	<0.50
X	<0.50
MTBE	<0.50
Naph	<0.0255

MW-5	
Date	6/7/2016
GRO	370
DRO	1,500
HO	<110
B	<0.50
T	<0.50
E	<0.50
X	<0.50
MTBE	2.2
Naph	1.872

WEST VALLEY HIGHWAY

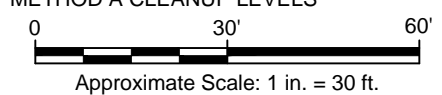


- LEGEND:
- PROPERTY BOUNDARY
 - MW-1 ● MONITORING WELL LOCATION
 - SVE-4 ⊙ VAPOR EXTRACTION WELL LOCATION
 - AS-11 ▲ AIR SPARGE WELL LOCATION
 - MW-8 ⊗ ABANDONED MONITORING WELL
 - (17.98) GROUNDWATER ELEVATION (FEET ABOVE NAVD 88)
 - 17.60 - - - GROUNDWATER ELEVATION CONTOUR (FEET ABOVE NAVD 88, DASHED WHERE INFERRED)
 - < NOT DETECTED, VALUE SHOWN IS THE METHOD DETECTION LIMIT (MDL)
 - J ESTIMATED VALUE - RESULT GREATER THAN OR EQUAL TO THE MDL AND LESS THAN THE LIMIT OF QUANTITATION (LOQ)
 - (NS) NOT SAMPLED
 - NAVD88 NORTH AMERICAN VERTICAL DATUM 1988
 - NOT ANALYZED

SAMPLE ID	
Date	Date of Sample
GRO	Total Petroleum Hydrocarbons (TPH) in the Gasoline Range Organics / [Duplicate]
DRO	TPH in the Diesel Range Organics / [Duplicate]
HO	TPH in the Heavy Oil Range Organics / [Duplicate]
B	Benzene / [Duplicate]
T	Toluene / [Duplicate]
E	Ethylbenzene / [Duplicate]
X	Total Xylenes / [Duplicate]
MTBE	Methyl Tertiary Butyl Ether / [Duplicate]
Naph	Total Napthalenes / [Duplicate]

NOTES:
 ALL CONCENTRATIONS ARE MEASURED IN MICROGRAMS PER LITER (µg/L)
 TOTAL NAPHTHALENES WERE CALCULATED ACCORDING TO MTCA CLEANUP REGULATION TABLE 720-Id/r

BOLD = ANALYTE DETECTED ABOVE MODEL TOXICS CONTROL ACT (MTCA) METHOD A CLEANUP LEVELS



BP WEST COAST PRODUCTS, LLC.
 FORMER ARCO FACILITY No. 5544
 19918 68TH AVENUE SOUTH, KENT, WASHINGTON
2016 ANNUAL SITE STATUS REPORT

GROUNDWATER CONTOUR MAP WITH ANALYTICAL RESULTS
JUNE 7, 2016

CITY: (Read) DIV: (Group) (Read) DE: (Read) LD: (Opt) PIC: (Opt) PM: (Read) TM: (Opt) LVR: (Opt) ON: OFF: REF: I: (Environment) - Arcadis | ARCADIS | USA PROJECTS: BP Fonglove | BP Washington | WA-6544 | 2016 SSRIE Drawings | GEC Bangalore 2016/06/2016 03:06:09 | PNAWA39 W03_4.dwg LAYOUT: 4 SAVED: 2/2/2017 2:39 PM ACADYER: 19.1.S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLT\FULL.CTB PLOTTED: 2/2/2017 5:45 PM BY: DEVESH KAMBLE

MW-12	
Date	9/19/2016
GRO	1,900
DRO	1,200
HO	<110
B	12
T	0.93(J)
E	240
X	54
MTBE	<0.50
cPAHs	<0.00755

MW-5	
Date	9/19/2016
GRO	750
DRO	2,300
HO	<110
B	<0.50
T	<0.50
E	<0.50
X	<0.50
MTBE	1.5
cPAHs	<0.00755

MW-9	
Date	9/19/2016
GRO	<50
DRO	<47
HO	<110
B	<0.50
T	<0.50
E	<0.50
X	<0.50
MTBE	<0.50
cPAHs	<0.00755

MW-11	
Date	9/19/2016
GRO	<50
DRO	<47
HO	<110
B	<0.50
T	<0.50
E	<0.50
X	<0.50
MTBE	<0.50
cPAHs	<0.00755

MW-6	
Date	9/19/2016
GRO	11,000
DRO	510
HO	<110
B	3.7
T	3.6
E	65
X	300
MTBE	1.5
cPAHs	0.00765

MW-13	
Date	9/19/2016
GRO	6,000
DRO	690
HO	<100
B	2.3
T	1.4
E	110
X	290
MTBE	3.3
cPAHs	<0.00755

MW-10	
Date	9/19/2016
GRO	<50
DRO	<49
HO	<110
B	<0.50
T	<0.50
E	<0.50
X	<0.50
MTBE	<0.50
cPAHs	<0.00755

MW-3	
Date	9/19/2016
GRO	<50
DRO	<48
HO	<110
B	<0.50
T	<0.50
E	<0.50
X	<0.50
MTBE	<0.50
cPAHs	<0.00755

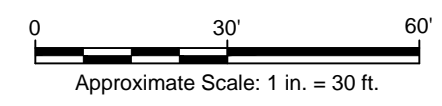
MW-2	
Date	9/19/2016
GRO	7,900 / [7,600]
DRO	2,300 / [--]
HO	<110 / [--]
B	5.2 / [5.1]
T	1.7 / [1.6]
E	320 / [400]
X	200 / [190]
MTBE	<0.50 / [<0.50]
cPAHs	<0.00755 / [--]

LEGEND:

- PROPERTY BOUNDARY
- MW-1 ● MONITORING WELL LOCATION
- SVE-4 ⊙ VAPOR EXTRACTION WELL LOCATION
- AS-11 ▲ AIR SPARGE WELL LOCATION
- MW-8 ⊗ ABANDONED MONITORING WELL
- (17.37) GROUNDWATER ELEVATION (FEET ABOVE NAVD 88)
- GROUNDWATER ELEVATION CONTOUR (FEET ABOVE NAVD 88, DASHED WHERE INFERRED)
- < NOT DETECTED, VALUE SHOWN IS THE METHOD DETECTION LIMIT (MDL)
- J ESTIMATED VALUE - RESULT GREATER THAN OR EQUAL TO THE MDL AND LESS THAN THE LIMIT OF QUANTITATION (LOQ)
- NAVD88 NORTH AMERICAN VERTICAL DATUM 1988
- NOT ANALYZED

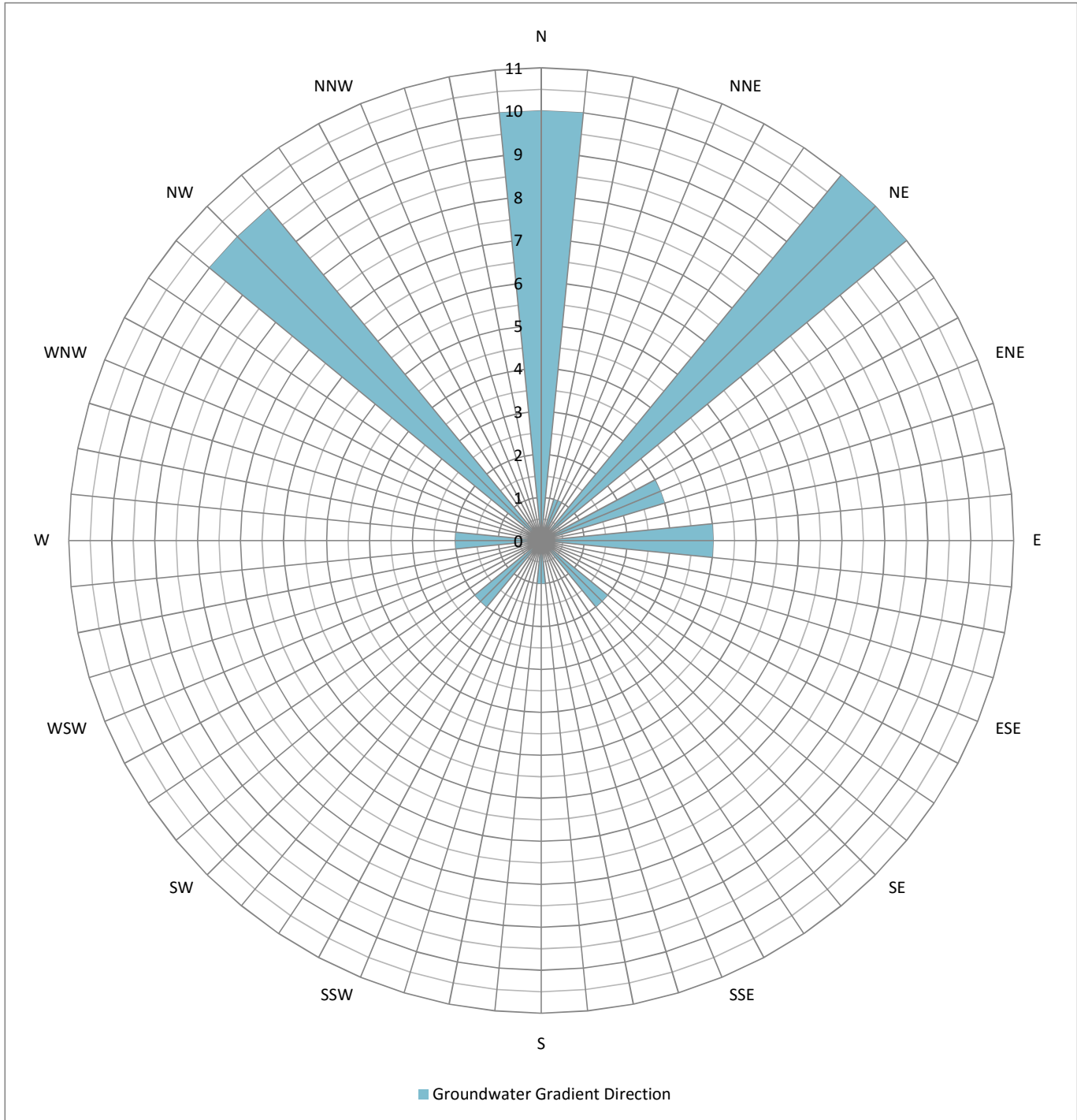
SAMPLE ID	
Date	Date of Sample
GRO	Total Petroleum Hydrocarbons (TPH) in the Gasoline Range Organics / [Duplicate]
DRO	TPH in the Diesel Range Organics / [Duplicate]
HO	TPH in the Heavy Oil Range Organics / [Duplicate]
B	Benzene / [Duplicate]
T	Toluene / [Duplicate]
E	Ethylbenzene / [Duplicate]
X	Total Xylenes / [Duplicate]
MTBE	Methyl Tertiary Butyl Ether / [Duplicate]
cPAHs	Total Carcinogenic Polycyclic Aromatic Hydrocarbons / [Duplicate]

NOTES:
 ALL CONCENTRATIONS ARE MEASURED IN MICROGRAMS PER LITER (µg/L)
 TOTAL cPAHs WERE CALCULATED ACCORDING TO MTCA CLEANUP REGULATION TABLE 720-Id/r
BOLD = ANALYTE DETECTED ABOVE MODEL TOXICS CONTROL ACT (MTCA) METHOD A CLEANUP LEVELS



BP WEST COAST PRODUCTS, LLC.
 FORMER ARCO FACILITY No. 5544
 19918 68TH AVENUE SOUTH, KENT, WASHINGTON
 2016 ANNUAL SITE STATUS REPORT

GROUNDWATER CONTOUR MAP WITH ANALYTICAL RESULTS
 SEPTEMBER 19, 2016



Legend

- N=North
- NNE= North Northeast
- NE= Northeast
- ENE= East Northeast
- E= East
- ESE= East Southeast
- SE=Southeast
- SSE= South Southeast
- S= South
- SW= Southwest
- SSW= South Southwest
- WSW= West South West
- W= West
- WNW= West Northwest
- NW=Northwest
- NNW= North Northwest

Note

Rose diagram based on gradient calculations from Arcadis groundwater monitoring events conducted since the monitoring well top of casing survey conducted in 2010. Multiple flow direction and gradients have been observed and represented in this diagram for any singular event.

Number of Events Observed = 18

BP WEST COAST PRODUCTS, LLC.
 FORMER ARCO FACILITY No. 05544
 19918 68TH AVENUE SOUTH, KENT WASHINGTON
2016 ANNUAL SITE STATUS REPORT

**HISTORICAL GROUNDWATER
 GRADIENT DIRECTION ROSE DIAGRAM**



**FIGURE
5**

ATTACHMENT A

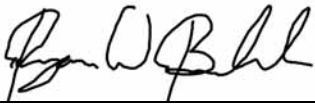
Groundwater Monitoring Field Data Sheets



Gauging Data

 Date 03/25/2016
 Sampler Ryan Brauchla

Well	Date/Time	Depth To Water (ft)	Well Depth (ft)	Depth to LNAPL (ft)	Remarks
MW-11	03/25/2016 08:45	7.90	19.95		PID = 0.0 ppm
MW-9	03/25/2016 08:40	7.72	18.21		PID = 0.2 ppm
MW-5	03/25/2016 08:50	8.25	19.00		PID = 0.1 ppm
MW-12	03/25/2016 09:00	7.93	20.11		PID = 0.5 ppm
MW-13	03/25/2016 09:05	7.85	18.67		PID = 0.1 ppm
MW-10	03/25/2016 09:25	7.38	18.83		PID = 3.5 ppm
MW-2	03/25/2016 09:15	7.84	18.85		PID = 7.4 ppm
MW-3	03/25/2016 09:20	7.19	19.19		PID = 0.1 ppm
MW-1	03/25/2016 08:15	6.66	11.80		PID = 0.0 ppm
MW-4	03/25/2016 08:25	8.19	19.25		PID = 0.1 ppm
MW-7	03/25/2016 08:35	8.00	15.90		PID = 0.0 ppm
MW-6	03/25/2016 09:10	7.91	18.67		PID = 105.9 ppm



Sampler: Ryan Brauchla

MW-2

Date	03/25/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	7.84
Project Number	GP09BPNA.WA39	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	18.85
Location	19918 68th Avenue South, Kent, WA98032	Sampler	Ryan Brauchla	Water Column in Well	11.01
Purge Method	Peristaltic Pump	Casing Material	PVC	Gallons in Well	1.80
Purge Volume Units	ml	Casing Diameter (in)	2	Total Volume to Remove	
Sampling Type	Low Flow	Pump Intake Depth (ft bmp)	14		
Comments		Casing Volume to Remove			

Field Parameters

Time	Flow Rate (ml/min)	Cumil Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
15:43	200	600	15.3	7.56	454.7	-53.5	1.58		8.08
15:45	200	1000	15.3	7.60	455.9	-58.7	0.65		8.22
15:47	200	1400	15.1	7.56	461.9	-63.9	0.50		8.28
15:50	200	2000	15.0	7.51	488.0	-75.1	0.35		8.41
15:53	200	2600	15.2	7.50	497.3	-80.6	0.34		8.55
15:55	200	3000	15.2	7.49	500.9	-82.1	0.28		8.62

Sampling Summary

Did Well Dewater?	No	Alkalinity	
Sample Time	16:00	Ferrous Iron	
Sample ID	WA-5544-MW-2(1Q16)	MS/MSD Sample Time	
Duplicate Sample ID		MS/MSD Sample ID	
Dup Sample Time		EB Time	
Color	clear	EB Sample ID	
Odor	HCLO	Remarks	
Appearance	clear		

Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well is Securable by Design	X			
Well ID is Clearly Marked	X			
Water bailed from wellbox	X			
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
Cap Replaced		X		
Lock Replaced		X		
Other Action Taken (explain)		X		
Well Not Inspected (explain)			X	
Repair Order submitted (explain)			X	
Picture Taken of Well?		X		

MW-3

Date	03/25/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	7.19
Project Number	GP09BPNA.WA39	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	19.19
Location	19918 68th Avenue South, Kent, WA98032	Sampler	Ryan Brauchla	Water Column in Well	12.00
Purge Method	Peristaltic Pump	Casing Material	PVC	Gallons in Well	1.96
Purge Volume Units	ml	Casing Diameter (in)	2	Total Volume to Remove	
Sampling Type	Low Flow	Pump Intake Depth (ft bmp)	14		
Comments		Casing Volume to Remove			

Field Parameters

Time	Flow Rate (ml/min)	Cumulative Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
14:20	200	4000	14.4	7.59	233.0	167.5	2.12		7.56
14:23	200	4000	14.5	7.58	232.7	169.1	2.10		7.58
14:25	200	5000	14.5	7.58	233.1	167.9	2.13		7.59

Sampling Summary

Did Well Dewater?	No	Alkalinity	
Sample Time	14:20	Ferrous Iron	
Sample ID	WA-5544-MW-3(1Q16)	MS/MSD Sample Time	
Duplicate Sample ID		MS/MSD Sample ID	
Dup Sample Time		EB Time	
Color	clear	EB Sample ID	
Odor	no	Remarks	
Appearance	clear		

Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well is Securable by Design	X			
Well ID is Clearly Marked	X			
Water bailed from wellbox	X			
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
Cap Replaced		X		
Lock Replaced		X		
Other Action Taken (explain)		X		
Well Not Inspected (explain)			X	
Repair Order submitted (explain)			X	
Picture Taken of Well?		X		

MW-5

Date	03/25/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	8.25
Project Number	GP09BPNA.WA39	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	19.00
Location	19918 68th Avenue South, Kent, WA98032	Sampler	Ryan Brauchla	Water Column in Well	10.75
Purge Method	Peristaltic Pump	Casing Material	PVC	Gallons in Well	1.75
Purge Volume Units	ml	Casing Diameter (in)	2	Total Volume to Remove	
Sampling Type	Low Flow	Pump Intake Depth (ft bmp)	14		
Comments		Casing Volume to Remove			

Field Parameters

Time	Flow Rate (ml/min)	Cumulative Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
11:15	200	600	14.0	7.47	746	30.7	1.09		8.98
11:18	200	1200	14.0	7.39	758	15.5	0.47		8.91
11:21	200	1800	14.1	7.38	762	11.7	0.32		8.88
11:26	200	2800	14.1	7.37	764	8.2	0.30		8.92
11:28	200	3200	14.1	7.37	764	6.0	0.29		8.92

Sampling Summary

Did Well Dewater?	No	Alkalinity	
Sample Time	11:30	Ferrous Iron	
Sample ID	WA-5544-MW-5(1Q16)	MS/MSD Sample Time	
Duplicate Sample ID		MS/MSD Sample ID	
Dup Sample Time		EB Time	
Color	clear	EB Sample ID	
Odor	slight	Remarks	
Appearance	clear		

Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well is Securable by Design	X			
Well ID is Clearly Marked	X			
Water bailed from wellbox	X			
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
Cap Replaced		X		
Lock Replaced		X		
Other Action Taken (explain)		X		
Well Not Inspected (explain)			X	
Repair Order submitted (explain)			X	
Picture Taken of Well?		X		

MW-6

Date	03/25/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	7.91
Project Number	GP09BPNA.WA39	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	18.67
Location	19918 68th Avenue South, Kent, WA98032	Sampler	Ryan Brauchla	Water Column in Well	10.76
Purge Method	Peristaltic Pump	Casing Material	PVC	Gallons in Well	1.76
Purge Volume Units	ml	Casing Diameter (in)	2	Total Volume to Remove	
Sampling Type	Low Flow	Pump Intake Depth (ft bmp)	13		
Comments		Casing Volume to Remove			

Field Parameters

Time	Flow Rate (ml/min)	Cumulative Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
16:20	200	1000	14.5	7.44	995	-145.4	1.48		8.40
16:23	200	1600	14.7	7.44	1000	-151.8	0.52		8.46
16:26	200	2200	14.7	7.43	1014	-155.9	0.33		8.50
16:28	200	2600	14.7	7.42	1013	-156.7	0.35		8.53
16:30	200	3000	14.8	7.42	1013	-157.2	0.30		8.55

Sampling Summary

Did Well Dewater?	No	Alkalinity	
Sample Time	16:30	Ferrous Iron	
Sample ID	WA-5544-MW-6(1Q16)	MS/MSD Sample Time	
Duplicate Sample ID	DUP-1	MS/MSD Sample ID	
Dup Sample Time	16:30	EB Time	
Color	clear	EB Sample ID	
Odor	HCLO	Remarks	
Appearance	sheen		

Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well is Securable by Design	X			
Well ID is Clearly Marked	X			
Water bailed from wellbox	X			
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
Cap Replaced		X		
Lock Replaced		X		
Other Action Taken (explain)		X		
Well Not Inspected (explain)			X	
Repair Order submitted (explain)			X	
Picture Taken of Well?		X		

MW-9

Date	03/25/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	7.72
Project Number	GP09BPNA.WA39	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	18.21
Location	19918 68th Avenue South, Kent, WA98032	Sampler	Ryan Brauchla	Water Column in Well	10.49
Purge Method	Peristaltic Pump	Casing Material	PVC	Gallons in Well	1.71
Purge Volume Units	ml	Casing Diameter (in)	2	Total Volume to Remove	
Sampling Type	Low Flow	Pump Intake Depth (ft bmp)	13		
Comments		Casing Volume to Remove			

Field Parameters

Time	Flow Rate (ml/min)	Cumulative Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
10:27	200	600	14.6	7.53	376.9	102.9	5.02		7.85
10:30	200	1200	14.6	7.52	356.6	113.1	1.38		7.87
10:33	200	1800	14.6	7.50	334.4	132.8	0.49		7.91
10:36	200	2400	14.6	7.49	333.1	138.4	0.44		7.93
10:39	200	3000	14.7	7.50	333.3	141.4	0.41		7.94

Sampling Summary

Did Well Dewater?	No	Alkalinity	
Sample Time	10:38	Ferrous Iron	
Sample ID	WA-5544-MW-9(1Q16)	MS/MSD Sample Time	
Duplicate Sample ID		MS/MSD Sample ID	
Dup Sample Time		EB Time	
Color	clear	EB Sample ID	
Odor	no	Remarks	
Appearance	clear		

Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well is Securable by Design	X			
Well ID is Clearly Marked	X			
Water bailed from wellbox		X		
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
Cap Replaced		X		
Lock Replaced		X		
Other Action Taken (explain)		X		
Well Not Inspected (explain)			X	
Repair Order submitted (explain)			X	
Picture Taken of Well?		X		

MW-10

Date	03/25/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	7.38
Project Number	GP09BPNA.WA39	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	18.83
Location	19918 68th Avenue South, Kent, WA98032	Sampler	Ryan Brauchla	Water Column in Well	11.45
Purge Method	Peristaltic Pump	Casing Material	PVC	Gallons in Well	1.87
Purge Volume Units	ml	Casing Diameter (in)	2	Total Volume to Remove	
Sampling Type	Low Flow	Pump Intake Depth (ft bmp)	13		
Comments		Casing Volume to Remove			

Field Parameters

Time	Flow Rate (ml/min)	Cumulative Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
13:15	200	600	13.9	7.41	377.9	94.2	2.66		7.55
13:18	200	1200	13.9	7.43	382.8	130.5	1.35		7.65
13:21	200	1800	13.8	7.47	383.3	152.6	0.55		7.76
13:24	200	2400	14.0	7.47	390.0	167.3	0.42		7.85
13:27	200	3000	14.1	7.46	396.2	176.2	0.33		7.92
13:30	200	3600	14.4	7.47	398.1	178.5	0.29		7.97

Sampling Summary

Did Well Dewater?	No	Alkalinity	
Sample Time	13:30	Ferrous Iron	
Sample ID	WA-5544-MW-10(1Q16)	MS/MSD Sample Time	
Duplicate Sample ID		MS/MSD Sample ID	
Dup Sample Time		EB Time	
Color	clear	EB Sample ID	
Odor	no	Remarks	
Appearance	clear		

Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well is Securable by Design	X			
Well ID is Clearly Marked	X			
Water bailed from wellbox		X		
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
Cap Replaced		X		
Lock Replaced		X		
Other Action Taken (explain)		X		
Well Not Inspected (explain)			X	
Repair Order submitted (explain)			X	
Picture Taken of Well?		X		

MW-11

Date	03/25/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	7.90
Project Number	GP09BPNA.WA39	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	19.95
Location	19918 68th Avenue South, Kent, WA98032	Sampler	Ryan Brauchla	Water Column in Well	12.05
Purge Method	Peristaltic Pump	Casing Material	PVC	Gallons in Well	1.97
Purge Volume Units	ml	Casing Diameter (in)	2	Total Volume to Remove	
Sampling Type	Low Flow	Pump Intake Depth (ft bmp)	14		
Comments		Casing Volume to Remove			

Field Parameters

Time	Flow Rate (ml/min)	Cumulative Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
09:44	200	600	13.5	7.50	356.3	80.3	1.41		8.02
09:47	200	1200	13.7	7.50	358.6	66.4	0.74		8.07
09:50	200	1800	13.7	7.49	359.7	62.0	0.54		8.09
09:53	200	2400	13.8	7.48	360.3	63.1	0.46		8.10
09:56	200	3000	13.8	7.50	362.8	58.2	0.44		8.10

Sampling Summary

Did Well Dewater?	No	Alkalinity	
Sample Time	10:00	Ferrous Iron	
Sample ID	WA-5544-MW-11(1Q16)	MS/MSD Sample Time	
Duplicate Sample ID		MS/MSD Sample ID	
Dup Sample Time		EB Time	
Color	yellow	EB Sample ID	
Odor	no	Remarks	
Appearance	clear		

Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well is Securable by Design	X			
Well ID is Clearly Marked	X			
Water bailed from wellbox	X			
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
Cap Replaced		X		
Lock Replaced		X		
Other Action Taken (explain)		X		
Well Not Inspected (explain)			X	
Repair Order submitted (explain)			X	
Picture Taken of Well?			X	

MW-12

Date	03/25/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	7.93
Project Number	GP09BPNA.WA39	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	20.11
Location	19918 68th Avenue South, Kent, WA98032	Sampler	Ryan Brauchla	Water Column in Well	12.18
Purge Method	Peristaltic Pump	Casing Material	PVC	Gallons in Well	1.99
Purge Volume Units	ml	Casing Diameter (in)	2	Total Volume to Remove	
Sampling Type	Low Flow	Pump Intake Depth (ft bmp)	14		
Comments		Casing Volume to Remove			

Field Parameters

Time	Flow Rate (ml/min)	Cumulative Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
11:56	200	600	13.4	7.41	338.8	2.2	1.37		8.18
11:59	200	1200	14.1	7.47	277.8	70.6	0.36		8.30
12:02	200	1800	14.1	7.49	260.7	78.4	0.33		8.41
12:05	200	2400	14.1	7.51	250.9	81.6	0.30		8.48
12:08	200	3000	14.1	7.52	243.6	85.7	0.27		8.51
12:10	200	3400	14.1	7.52	241.2	87.7	0.28		8.54

Sampling Summary

Did Well Dewater?	No	Alkalinity	
Sample Time	12:10	Ferrous Iron	
Sample ID	WA-5544-MW-12(1Q16)	MS/MSD Sample Time	
Duplicate Sample ID		MS/MSD Sample ID	
Dup Sample Time		EB Time	
Color	clear	EB Sample ID	
Odor	no	Remarks	
Appearance	clear		

Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well is Securable by Design	X			
Well ID is Clearly Marked	X			
Water bailed from wellbox		X		
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
Cap Replaced		X		
Lock Replaced		X		
Other Action Taken (explain)		X		
Well Not Inspected (explain)			X	
Repair Order submitted (explain)			X	
Picture Taken of Well?		X		

MW-13

Date	03/25/2016	Weather Conditions	Sunny
Project Number	GP09BPNA.WA39	Water Quality Meter	YSI
Location	19918 68th Avenue South, Kent, WA98032	Sampler	Ryan Brauchla
Purge Method	Peristaltic Pump	Casing Material	PVC
Purge Volume Units	ml	Casing Diameter (in)	2
Sampling Type	Low Flow	Pump Intake Depth (ft bmp)	15
Comments		Casing Volume to Remove	

Field Parameters

Time	Flow Rate (ml/min)	Cumulative Vol Purged	Temperature °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)
12:35	200	600	14.5	7.44	749	-97.9	0.67		8.18
12:38	200	1200	14.5	7.43	759	-107.5	0.42		8.32
12:41	200	1800	14.5	7.42	751	-110.5	0.35		8.41
12:44	200	2400	14.5	7.42	752	-110.9	0.31		8.54

Sampling Summary

Did Well Dewater?	No	Alkalinity	
Sample Time	12:50	Ferrous Iron	
Sample ID	WA-5544-MW-13(1Q16)	MS/MSD Sample Time	
Duplicate Sample ID		MS/MSD Sample ID	
Dup Sample Time		EB Time	
Color	clear	EB Sample ID	
Odor	no	Remarks	
Appearance	clear		

Well Integrity Checklist

Item	Yes	No	NA	Notes
Well Inspected ? No corrective action required	X			
Well is Securable by Design	X			
Well ID is Clearly Marked	X			
Water bailed from wellbox		X		
Well Pad in Good Condition	X			
Wellbox Components Cleaned	X			
Cap Replaced		X		
Lock Replaced		X		
Other Action Taken (explain)		X		
Well Not Inspected (explain)			X	
Repair Order submitted (explain)			X	
Picture Taken of Well?		X		

Gauging Data

Date 06/07/2016

Sampler Eric Krueger

Well	Date/Time	Depth To Water (ft)	Well Depth (ft)	Depth to LNAPL (ft)	PID (ppmv)	Remarks
MW-1	06/07/2016 09:10	8.19	18.53		0.1	
MW-2	06/07/2016 08:40	9.44	18.79		0.5	
MW-3	06/07/2016 08:22	8.85	19.32		0.1	
MW-4	06/07/2016 08:15	9.14	19.29		0.1	
MW-5	06/07/2016 08:50	9.81	19.06		0.2	
MW-6	06/07/2016 09:35	9.69	18.55		168.0	
MW-7	06/07/2016 08:00	8.77	18.55		0.1	
MW-9	06/07/2016 09:00	9.02	18.14		0.1	
MW-10	06/07/2016 08:25	9.36	18.73		0.9	
MW-11	06/07/2016 09:05	9.08	19.25		0.1	
MW-12	06/07/2016 08:45	9.68	20.21		0.2	
MW-13	06/07/2016 09:30	9.66	19.81		0.1	



Sampler: Eric Krueger

MW-2

Date	06/07/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	9.44
Project Number	GP09BPNA.WA34	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	18.79
Address	19918 68th Avenue	Casing Material	PVC	Water Column in Well	9.35
	South, Kent, WA98032	Casing Diameter (in)	2	Gallons in Well	1.53
Purge Method	Low Flow - Peristaltic Pump	Pump Intake Depth (ft bmp)	13	Total Volume to Remove	
Purge Volume Units	MI	Casing Volume to Remove			
Sampling Type	Low Flow				
Comments					

Field Parameters

Time	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Remarks
13:45	600	17.3	7.20	1095	-128.5	0.34		9.67	
13:48	1200	17.4	7.18	1092	-133.4	0.26		9.87	
13:50	1800	17.3	7.17	1091	-136.1	0.21		9.99	

Sampling Summary

Sample Date	06/07/2016	Odor	No
Sample Time	13:55	Analysis	NWTPH-GX, NWTPH-DX, SW8260B, SW8270C-SIM
Sample ID	WA-5544-MW-2(2Q16)	COC	
Duplicate Sample ID		Bottles	BTEX 3x of 40 ml - HCL, Gx 3x 40 ml - HCL, Naphthalenes, cPAHs 2x 250 ml amber unpreserved, Dx- 2x 250 ml amber glass HCL
Dup Sample Time		Remarks	

Sampler: Eric Krueger



Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of well head				Round 12"
Well is Securable by Design	X			
Is Well ID Visible?	X			
Water in the well box	X			
Sleeve around the well box in good condition		X		

MW-3

Date	06/07/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	8.85
Project Number	GP09BPNA.WA34	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	19.32
Address	19918 68th Avenue	Casing Material	PVC	Water Column in Well	10.47
	South, Kent, WA98032	Casing Diameter (in)	2	Gallons in Well	1.71
Purge Method	Low Flow - Peristaltic Pump	Pump Intake Depth (ft bmp)	14	Total Volume to Remove	
Purge Volume Units	MI	Casing Volume to Remove			
Sampling Type	Low Flow				
Comments					

Field Parameters

Time	Cumulative Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Remarks
14:48	600	16.7	7.29	261.9	46.6	0.97		8.99	
14:51	1200	17.0	7.29	259.1	63.2	0.79		9.16	
14:54	1800	16.7	7.30	257.7	69.3	0.79		9.22	
14:56	2400	16.8	7.27	255.7	73.1	0.77		9.29	

Sampling Summary

Sample Date	06/07/2016	Odor	No
Sample Time	15:00	Analysis	NWTPH-GX, NWTPH-DX, SW8260B, SW8270C-SIM
Sample ID	WA-5544-MW-3(2Q16)	COC	
Duplicate Sample ID		Bottles	BTEX 3x of 40 ml - HCL, Gx 3x 40 ml - HCL, Naphthalenes, cPAHs 2x 250 ml amber unpreserved, Dx- 2x 250 ml amber glass HCL
Dup Sample Time		Remarks	

Sampler: Eric Krueger



Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of well head				Round 12"
Well is Securable by Design	X			
Is Well ID Visible?	X			
Water in the well box	X			
Sleeve around the well box in good condition	X			

MW-5

Date	06/07/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	9.81
Project Number	GP09BPNA.WA34	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	19.06
Address	19918 68th Avenue	Casing Material	PVC	Water Column in Well	9.25
	South, Kent, WA98032	Casing Diameter (in)	2	Gallons in Well	1.51
Purge Method	Low Flow - Peristaltic Pump	Pump Intake Depth (ft bmp)	13	Total Volume to Remove	
Purge Volume Units	MI	Casing Volume to Remove			
Sampling Type	Low Flow				
Comments					

Field Parameters

Time	Cumulative Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Remarks
14:18	600	16.1	7.20	1003	-83.9	0.50		10.25	
14:21	1200	16.1	7.16	1007	-90.3	0.32		10.53	
14:23	2400	15.9	7.16	1011	-92.8	0.28		10.61	
14:26	3000	16.0	7.15	1012	-94.9	0.25		10.69	

Sampling Summary

Sample Date	06/07/2016	Odor	No
Sample Time	14:30	Analysis	NWTPH-GX, NWTPH-DX, SW8260B, SW8270C-SIM
Sample ID	WA-5544-MW-5(2Q16)	COC	
Duplicate Sample ID		Bottles	BTEX 3x of 40 ml - HCL, Gx 3x 40 ml - HCL, Naphthalenes, cPAHs 2x 250 ml amber unpreserved, Dx- 2x 250 ml amber glass HCL
Dup Sample Time		Remarks	

Sampler: Eric Krueger



Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of well head				Round 12"
Well is Securable by Design	X			
Is Well ID Visible?	X			
Water in the well box	X			
Sleeve around the well box in good condition	X			

MW-6

Date	06/07/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	9.69
Project Number	GP09BPNA.WA34	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	18.55
Address	19918 68th Avenue South, Kent, WA98032	Casing Material	PVC	Water Column in Well	8.86
Purge Method	Low Flow - Peristaltic Pump	Casing Diameter (in)	2	Gallons in Well	1.45
Purge Volume Units	MI	Pump Intake Depth (ft bmp)	13	Total Volume to Remove	
Sampling Type	Low Flow	Casing Volume to Remove			
Comments					

Field Parameters

Time	Cumulative Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Remarks
13:03	600	17.7	7.26	1279	-124.8	0.90		10.01	
13:06	1200	17.5	7.17	1288	-133	0.47		10.30	
13:09	1800	17.4	7.14	1286	-135.6	0.35		10.49	
13:11	2400	17.4	7.14	1281	-136.8	0.29		10.55	
13:13	3000	17.4	7.15	1279	-138	0.23		10.61	

Sampling Summary

Sample Date	06/07/2016	Odor	No
Sample Time	13:20	Analysis	NWTPH-GX, NWTPH-DX, SW8260B, SW8270C-SIM
Sample ID	WA-5544-MW-6(2Q16)	COC	
Duplicate Sample ID	DUP -1	Bottles	BTEX 3x of 40 ml - HCL, Gx 3x 40 ml - HCL, Naphthalenes, cPAHs 2x 250 ml amber unpreserved, Dx- 2x 250 ml amber glass HCL
Dup Sample Time	13:20	Remarks	

Sampler: Eric Krueger


Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of well head				Round 12"
Well is Securable by Design	X			
Is Well ID Visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

MW-9

Date	06/07/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	9.02
Project Number	GP09BPNA.WA34	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	18.14
Address	19918 68th Avenue	Casing Material	PVC	Water Column in Well	9.12
	South, Kent, WA98032	Casing Diameter (in)	2	Gallons in Well	1.49
Purge Method	Low Flow - Peristaltic Pump	Pump Intake Depth (ft bmp)	13	Total Volume to Remove	
Purge Volume Units	MI	Casing Volume to Remove			
Sampling Type	Low Flow				
Comments					

Field Parameters

Time	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Remarks
10:24	600	16.6	7.30	369.4	82.4	1.49		9.02	
10:27	1200	16.4	7.25	399.9	91.2	0.51		9.22	
10:30	1800	16.5	7.23	407.6	95.8	0.45		9.31	
10:33	2400	16.4	7.24	409.0	97.1	0.45		9.35	

Sampling Summary

Sample Date	06/07/2016	Odor	No
Sample Time	10:35	Analysis	NWTPH-GX, NWTPH-DX, SW8260B, SW8270C-SIM
Sample ID	WA-5544-MW-9(2Q16)	COC	
Duplicate Sample ID		Bottles	BTEX 3x of 40 ml - HCL, Gx 3x 40 ml - HCL, Naphthalenes, cPAHs 2x 250 ml amber unpreserved, Dx- 2x 250 ml amber glass HCL
Dup Sample Time		Remarks	

Sampler: Eric Krueger



Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of well head				Round 12"
Well is Securable by Design	X			
Is Well ID Visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

MW-10

Date	06/07/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	9.36
Project Number	GP09BPNA.WA34	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	18.73
Address	19918 68th Avenue South, Kent, WA98032	Casing Material	PVC	Water Column in Well	9.37
Purge Method	Low Flow - Peristaltic Pump	Casing Diameter (in)	2	Gallons in Well	1.53
Purge Volume Units	MI	Pump Intake Depth (ft bmp)	13	Total Volume to Remove	
Sampling Type	Low Flow	Casing Volume to Remove			
Comments					

Field Parameters

Time	Cumulative Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Remarks
12:28	600	17.5	7.20	459.4	70.9	0.30		9.59	
12:31	1200	17.1	7.18	460.7	94.2	0.25		9.66	
12:33	1800	17.2	7.19	460.6	100.6	0.20		9.75	
12:35	2400	17.0	7.19	457.4	102.8	0.18		9.79	

Sampling Summary

Sample Date	06/07/2016	Odor Analysis	No
Sample Time	12:40		NWTPH-GX, NWTPH-DX, SW8260B, SW8270C-SIM
Sample ID	WA-5544-MW-10(2Q16)	COC Bottles	BTEX 3x of 40 ml - HCL, Gx 3x 40 ml - HCL, Naphthalenes, cPAHs 2x 250 ml amber unpreserved, Dx- 2x 250 ml amber glass HCL
Duplicate Sample ID		Remarks	
Dup Sample Time			

Sampler: Eric Krueger


Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of well head				Round 12"
Well is Securable by Design	X			
Is Well ID Visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

MW-11

Date	06/07/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	9.08
Project Number	GP09BPNA.WA34	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	19.25
Address	19918 68th Avenue South, Kent, WA98032	Casing Material	PVC	Water Column in Well	10.17
Purge Method	Low Flow - Peristaltic Pump	Casing Diameter (in)	2	Gallons in Well	1.66
Purge Volume Units	MI	Pump Intake Depth (ft bmp)	14	Total Volume to Remove	
Sampling Type	Low Flow	Casing Volume to Remove			
Comments					

Field Parameters

Time	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Remarks
09:49	600	15.8	7.24	420.9	32.1	1.19		9.08	
09:53	1200	15.8	7.22	420.5	31.2	0.95		9.23	
09:56	1800	15.6	7.20	417.2	31.1	0.60		9.25	
09:58	2400	15.6	7.20	416.2	29.6	0.40		9.28	
10:00	3000	15.7	7.20	415.5	28.2	0.40		9.31	
10:02	3600	15.7	7.21	415.9	26.9	0.39		9.32	

Sampling Summary

Sample Date	06/07/2016	Odor	No,
Sample Time	09:55	Analysis	NWTPH-GX,SW8260B,NWTPH-DX, SW8270C-SIM
Sample ID	WA-5544-MW-11(2Q16)	COC	
Duplicate Sample ID		Bottles	BTEX 3x of 40 ml - HCL,Gx 3x 40 ml - HCL,Naphthalenes, cPAHs 2x 250 ml amber unpreserved,Dx- 2x 250 ml amber glass HCL
Dup Sample Time		Remarks	

Sampler: Eric Krueger


Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of well head				Round 12"
Well is Securable by Design	X			
Is Well ID Visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

MW-12

Date	06/07/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	9.68
Project Number	GP09BPNA.WA34	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	20.21
Address	19918 68th Avenue	Casing Material	PVC	Water Column in Well	10.53
	South, Kent, WA98032	Casing Diameter (in)	2	Gallons in Well	1.72
Purge Method	Low Flow - Peristaltic Pump	Pump Intake Depth (ft bmp)	15	Total Volume to Remove	
Purge Volume Units	MI	Casing Volume to Remove			
Sampling Type	Low Flow				
Comments					

Field Parameters

Time	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Remarks
10:55	600	16.2	7.25	569.4	-93.6	0.53		9.85	
11:00	1200	16.1	7.20	556.2	-98.6	0.28		10.10	
11:00	1800	16.2	7.17	541.7	-98.8	0.25		10.19	
11:03	2400	16.3	7.16	536.3	-98.7	0.22			

Sampling Summary

Sample Date	06/07/2016	Odor	No
Sample Time	11:10	Analysis	NWTPH-GX, NWTPH-DX, SW8260B, SW8270C-SIM
Sample ID	WA-5544-MW-12(2Q16)	COC	
Duplicate Sample ID		Bottles	BTEX 3x of 40 ml - HCL, Gx 3x 40 ml - HCL, Naphthalenes, cPAHs 2x 250 ml amber unpreserved, Dx- 2x 250 ml amber glass HCL
Dup Sample Time		Remarks	

Sampler: Eric Krueger



Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of well head				Round 12"
Well is Securable by Design	X			
Is Well ID Visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

MW-13

Date	06/07/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	9.66
Project Number	GP09BPNA.WA34	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	19.81
Address	19918 68th Avenue	Casing Material	PVC	Water Column in Well	10.15
	South, Kent, WA98032	Casing Diameter (in)	2		
Purge Method	Low Flow - Peristaltic Pump	Pump Intake Depth (ft bmp)	14	Gallons in Well	1.66
Purge Volume Units	MI	Casing Volume to Remove		Total Volume to Remove	
Sampling Type	Low Flow				
Comments					

Field Parameters

Time	Cumulative Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Remarks
11:30	600	16.6	7.33	767	-105.5	0.90		9.66	
11:33	1200	16.5	7.26	757	-111.8	0.40		9.85	
11:36	1800	16.3	7.24	769	-116.7	0.30		10.11	
11:38	2400	16.3	7.23	767	-120.2	0.25		10.22	

Sampling Summary

Sample Date	06/07/2016	Odor	No
Sample Time	11:45	Analysis	NWTPH-GX, NWTPH-DX, SW8260B, SW8270C-SIM
Sample ID	WA-5544-MW-13(2Q16)	COC	
Duplicate Sample ID		Bottles	BTEX 3x of 40 ml - HCL, Gx 3x 40 ml - HCL, Naphthalenes, cPAHs 2x 250 ml amber unpreserved, Dx- 2x 250 ml amber glass HCL
Dup Sample Time		Remarks	

Sampler: Eric Krueger



Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of well head				Round 12"
Well is Securable by Design	X			
Is Well ID Visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

Gauging Data

Date 09/19/2016

Sampler Alexander Pink

Well	Date/Time	Depth To Water (ft)	Well Depth (ft)	Depth to LNAPL (ft)	PID (ppmv)	Remarks
MW-1	09/19/2016 12:22	8.91	18.45		0.7	NS
MW-10	09/19/2016 12:07	10.07	18.67		4.1	LFP
MW-11	09/19/2016 11:13	9.96	19.93		1.6	LFP
MW-12	09/19/2016 11:31	10.64	20.11		0.8	LFP
MW-13	09/19/2016 11:54	10.53	20.17		1.5	LFP
MW-2	09/19/2016 12:00	10.24	18.87		3.6	LFP
MW-3	09/19/2016 12:15	9.46	19.14		0.7	LFP
MW-4	09/19/2016 12:35	9.89	19.25		0.8	NS
MW-5	09/19/2016 11:40	10.74	19.03		1.1	LFP
MW-6	09/19/2016 11:47	10.53	20.17		130.7	LFP
MW-7	09/19/2016 11:00	9.58	15.87		0.0	NS
MW-9	09/19/2016 11:23	9.93	18.22		0.7	LFP



Sampler: Alex Pink

MW-2

Date	09/19/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	10.24
Project Number	GP09BPNA.WA39	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	18.87
Address	19918 68th Avenue South, Kent, WA98032	Casing Material	PVC	Water Column in Well	8.63
Purge Method	Low Flow - Peristaltic Pump	Casing Diameter (in)	2	Gallons in Well	1.41
Purge Volume Units	ml	Pump Intake Depth (ft bmp)	15	Total Volume to Remove	0.0
Sampling Type	Low Flow	Casing Volume to Remove			
Comments					

Field Parameters

Time	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Remarks
17:10	600	18.5	7.32	1023	-35.8	0.67		10.51	
17:11	800	18.6	7.30	1024	-46.0	0.50		10.53	
17:12	1000	18.7	7.29	1024	-54.2	0.39		10.56	
17:12	1200	18.7	7.29	1024	-59.6	0.36		10.59	
17:13	1400	18.9	7.29	1024	-63.8	0.30		10.61	

Sampling Summary

Sample Date	09/19/2016	Odor Analysis	Slight HCLO
Sample Time	17:20	COC Bottles	SW8260B, SW8270C-SIM, NWTPH-Gx, NWTPH-Dx
Sample ID	MW-2-Q316	Remarks	BTEX 3x of 40 ml - HCL, Gx 3x 40 ml - HCL, Naphthalenes, cPAHs 2x 250 ml amber unpreserved, Dx- 2x 250 ml amber glass HCL
Duplicate Sample ID	DUP-1		LFP
Dup Sample Time	17:20		

Sampler: Alex Pink


Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of well head				Round 12"
Well Secured on initial inspection	X			
Is Well ID Visible?	X			
Water in the well box	X			
Sleeve around the well box in good condition	X			

MW-3

Date	09/19/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	9.46
Project Number	GP09BPNA.WA39	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	19.14
Address	19918 68th Avenue South, Kent, WA98032	Casing Material	PVC	Water Column in Well	9.68
Purge Method	Low Flow - Peristaltic Pump	Casing Diameter (in)	2	Gallons in Well	1.58
Purge Volume Units	ml	Pump Intake Depth (ft bmp)	15	Total Volume to Remove	0.0
Sampling Type	Low Flow	Casing Volume to Remove			
Comments					

Field Parameters

Time	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Remarks
17:52	600	17.5	7.36	261.3	58.3	1.19		9.62	
17:53	800	17.6	7.36	260.1	60.2	0.98		9.64	
17:54	1000	17.7	7.36	259.1	62.1	0.87		9.66	
17:55	1200	17.7	7.36	257.9	63.7	0.80		9.68	
17:55	1400	17.8	7.36	256.3	65.3	0.73		9.69	

Sampling Summary

Sample Date	09/19/2016	Odor	No
Sample Time	18:00	Analysis	SW8260B, SW8270C-SIM, NWTTPH-Gx, NWTTPH-Dx
Sample ID	MW-3-Q316	COC	
Duplicate Sample ID		Bottles	BTEX 3x of 40 ml - HCL, Gx 3x 40 ml - HCL, Naphthalenes, cPAHs 2x 250 ml amber unpreserved, Dx- 2x 250 ml amber glass HCL
Dup Sample Time		Remarks	LFP

Sampler: Alex Pink



Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of well head				Round 18"
Well Secured on initial inspection	X			
Is Well ID Visible?	X			
Water in the well box	X			
Sleeve around the well box in good condition	X			

MW-5

Date	09/19/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	10.74
Project Number	GP09BPNA.WA39	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	19.03
Address	19918 68th Avenue South, Kent, WA98032	Casing Material	PVC	Water Column in Well	8.29
Purge Method	Low Flow - Peristaltic Pump	Casing Diameter (in)	2	Gallons in Well	1.35
Purge Volume Units	ml	Pump Intake Depth (ft bmp)	15	Total Volume to Remove	0.0
Sampling Type	Low Flow	Casing Volume to Remove			
Comments					

Field Parameters

Time	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Remarks
14:39	600	17.5	7.34	957	6.7	0.85		11.12	
14:41	1000	17.5	7.32	959	-7.3	0.66		11.15	
14:42	1200	17.5	7.31	961	-16.7	0.52		11.17	
14:42	1400	17.3	7.30	961	-23.2	0.48		11.19	
14:43	1600	17.3	7.29	961	-28.1	0.39		11.21	

Sampling Summary

Sample Date	09/19/2016	Odor	No
Sample Time	14:50	Analysis	SW8260B,SW8270C-SIM,NWTPH-Gx,NWTPH-Dx
Sample ID	MW-5-Q316	COC	
Duplicate Sample ID		Bottles	BTEX 3x of 40 ml - HCL,Gx 3x 40 ml - HCL,Naphthalenes, cPAHs 2x 250 ml amber unpreserved,Dx- 2x 250 ml amber glass HCL
Dup Sample Time		Remarks	LFP

Sampler: Alex Pink


Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of well head				Round 12"
Well Secured on initial inspection	X			
Is Well ID Visible?	X			
Water in the well box	X			
Sleeve around the well box in good condition	X			

MW-6

Date	09/19/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	10.53
Project Number	GP09BPNA.WA39	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	20.17
Address	19918 68th Avenue South, Kent, WA98032	Casing Material	PVC	Water Column in Well	9.64
Purge Method	Low Flow - Peristaltic Pump	Casing Diameter (in)	2	Gallons in Well	1.57
Purge Volume Units	ml	Pump Intake Depth (ft bmp)	15	Total Volume to Remove	0.0
Sampling Type	Low Flow	Casing Volume to Remove			
Comments					

Field Parameters

Time	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Remarks
16:35	600	18.6	7.32	1197	-21.2	0.92		10.89	
16:36	800	18.7	7.30	1199	-35.3	0.66		10.92	
16:37	1000	18.8	7.29	1202	-45.1	0.48		10.94	
16:38	1200	18.8	7.29	1201	-51.3	0.41		10.96	
16:39	1400	18.8	7.28	1201	-55.7	0.35		10.98	

Sampling Summary

Sample Date	09/19/2016	Odor	No
Sample Time	16:45	Analysis	SW8260B, SW8270C-SIM, NWTPH-Gx, NWTPH-Dx
Sample ID	MW-6-Q316	COC	
Duplicate Sample ID		Bottles	BTEX 3x of 40 ml - HCL, Gx 3x 40 ml - HCL, Naphthalenes, cPAHs 2x 250 ml amber unpreserved, Dx- 2x 250 ml amber glass HCL
Dup Sample Time		Remarks	LFP

Sampler: Alex Pink


Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of well head				Round 12"
Well Secured on initial inspection	X			
Is Well ID Visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

MW-9

Date	09/19/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	9.93
Project Number	GP09BPNA.WA39	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	18.22
Address	19918 68th Avenue South, Kent, WA98032	Casing Material	PVC	Water Column in Well	8.29
Purge Method	Low Flow - Peristaltic Pump	Casing Diameter (in)	2	Gallons in Well	1.35
Purge Volume Units	ml	Pump Intake Depth (ft bmp)	15	Total Volume to Remove	0.0
Sampling Type	Low Flow	Casing Volume to Remove			
Comments					

Field Parameters

Time	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Remarks
13:27	600	18.6	7.41	465.1	316.4	0.81		10.05	
13:29	800	18.5	7.38	465.0	316.0	0.71		10.07	
13:30	1000	18.3	7.37	464.7	315.3	0.62		10.08	

Sampling Summary

Sample Date	09/19/2016	Odor	No
Sample Time	13:40	Analysis	SW8260B, SW8270C-SIM, NWTPH-Gx, NWTPH-Dx
Sample ID	MW-9-Q316	COC	
Duplicate Sample ID		Bottles	BTEX 3x of 40 ml - HCL, Gx 3x 40 ml - HCL, Naphthalenes, cPAHs 2x 250 ml amber unpreserved, Dx- 2x 250 ml amber glass HCL
Dup Sample Time		Remarks	LFP

Sampler: Alex Pink


Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of well head				Round 18"
Well Secured on initial inspection	X			
Is Well ID Visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

MW-10

Date	09/19/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	10.07
Project Number	GP09BPNA.WA39	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	18.67
Address	19918 68th Avenue South, Kent, WA98032	Casing Material	PVC	Water Column in Well	8.6
Purge Method	Low Flow - Peristaltic Pump	Casing Diameter (in)	2	Gallons in Well	1.4
Purge Volume Units	ml	Pump Intake Depth (ft bmp)	15	Total Volume to Remove	0.0
Sampling Type	Low Flow	Casing Volume to Remove			
Comments					

Field Parameters

Time	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Remarks
18:26	600	18.9	7.42	291.3	119.5	0.66		10.28	
18:27	800	18.9	7.42	291.4	118.6	0.50		10.31	
18:28	1000	18.9	7.41	291.6	117.8	0.39		10.33	
18:29	1200	18.9	7.41	291.1	117.3	0.33		10.35	
18:30	1400	18.8	7.41	291.7	116.9	0.32		10.38	

Sampling Summary

Sample Date	09/19/2016	Odor	No
Sample Time	18:35	Analysis	SW8260B, SW8270C-SIM, NWTPH-Gx, NWTPH-Dx
Sample ID	MW-10-Q316	COC	
Duplicate Sample ID		Bottles	BTEX 3x of 40 ml - HCL, Gx 3x 40 ml - HCL, Dx- 2x 250 ml amber glass HCL, Naphthalenes, cPAHs 2x 250 ml amber unpreserved
Dup Sample Time		Remarks	LFP

Sampler: Alex Pink


Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of well head				Round 12"
Well Secured on initial inspection	X			
Is Well ID Visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

MW-11

Date	09/19/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	9.96
Project Number	GP09BPNA.WA39	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	19.93
Address	19918 68th Avenue South, Kent, WA98032	Casing Material	PVC	Water Column in Well	9.97
Purge Method	Low Flow - Peristaltic Pump	Casing Diameter (in)	2	Gallons in Well	1.63
Purge Volume Units	ml	Pump Intake Depth (ft bmp)	15	Total Volume to Remove	0.0
Sampling Type	Low Flow	Casing Volume to Remove			
Comments					

Field Parameters

Time	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Remarks
14:03	400	17.3	7.33	446.6	290.8	0.95		10.03	
14:04	600	17.3	7.32	446.6	278.3	0.82		10.05	
14:05	800	17.2	7.32	445.5	264.6	0.66		10.05	
14:05	1000	17.3	7.31	444.2	249.7	0.55		10.05	
14:06	1200	17.3	7.31	443.2	238.0	0.47		10.05	
14:07	1400	17.4	7.31	441.6	228.1	0.42		10.05	
14:08	1600	17.3	7.31	439.8	217.5	0.38		10.05	
14:09	1800	17.3	7.31	438.9	209.2	0.37		10.05	
14:10	2000	17.4	7.31	438.5	201.2	0.33		10.05	

Sampling Summary

Sample Date	09/19/2016	Odor	No
Sample Time	14:15	Analysis	SW8260B,SW8270C-SIM,NWTPH-Gx,NWTPH-Dx
Sample ID	MW-11-Q316	COC	
Duplicate Sample ID		Bottles	BTEX 3x of 40 ml - HCL,Gx 3x 40 ml - HCL,Naphthalenes, cPAHs 2x 250 ml amber unpreserved,Dx- 2x 250 ml amber glass HCL
Dup Sample Time		Remarks	LFP

Sampler: Alex Pink


Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of well head				Round 12"
Well Secured on initial inspection	X			
Is Well ID Visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

MW-12

Date	09/19/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	10.64
Project Number	GP09BPNA.WA39	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	20.11
Address	19918 68th Avenue South, Kent, WA98032	Casing Material	PVC	Water Column in Well	9.47
Purge Method	Low Flow - Peristaltic Pump	Casing Diameter (in)	2	Gallons in Well	1.54
Purge Volume Units	ml	Pump Intake Depth (ft bmp)	15	Total Volume to Remove	0.0
Sampling Type	Low Flow	Casing Volume to Remove			
Comments					

Field Parameters

Time	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Remarks
15:15	600	17.5	7.36	780	-0.7	0.97		10.81	
15:16	800	17.6	7.34	782	-11.7	0.75		10.82	
15:17	1000	17.6	7.33	783	-20.2	0.60		10.85	
15:18	1200	17.5	7.32	783	-26.9	0.49		10.87	
15:19	1400	17.5	7.32	783	-32.6	0.43		10.89	
15:19	1600	17.6	7.31	783	-36.9	0.38		10.92	

Sampling Summary

Sample Date	09/19/2016	Odor	No
Sample Time	15:25	Analysis	SW8260B, SW8270C-SIM, NWTPH-Gx, NWTPH-Dx
Sample ID	MW-12-Q316	COC	
Duplicate Sample ID		Bottles	BTEX 3x of 40 ml - HCL, Gx 3x 40 ml - HCL, Naphthalenes, cPAHs 2x 250 ml amber unpreserved, Dx- 2x 250 ml amber glass HCL
Dup Sample Time		Remarks	LFP

Sampler: Alex Pink



Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of well head				Round 12"
Well Secured on initial inspection	X			
Is Well ID Visible?	X			
Water in the well box	X			
Sleeve around the well box in good condition	X			

MW-13

Date	09/19/2016	Weather Conditions	Sunny	Depth to Water (ft bmp)	10.53
Project Number	GP09BPNA.WA39	Water Quality Meter	YSI	Measured Well Depth (ft bmp)	20.17
Address	19918 68th Avenue South, Kent, WA98032	Casing Material	PVC	Water Column in Well	9.64
Purge Method	Low Flow - Peristaltic Pump	Casing Diameter (in)	2	Gallons in Well	1.57
Purge Volume Units	ml	Pump Intake Depth (ft bmp)	15	Total Volume to Remove	0.0
Sampling Type	Low Flow	Casing Volume to Remove			
Comments					

Field Parameters

Time	Cuml Vol Purged	Temp °C	pH	Conductivity (uS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Remarks
15:52	600	18.7	7.32	822	-13.6	0.67		10.76	
15:53	800	18.6	7.32	823	-23.1	0.50		10.80	
15:54	1000	18.6	7.32	829	-28.6	0.41		10.84	
15:55	1200	18.5	7.31	836	-33.0	0.37		10.87	

Sampling Summary

Sample Date	09/19/2016	Odor Analysis	Slight HCLO
Sample Time	16:00		SW8260B,SW8270C-SIM,NWTPH-Gx,NWTPH-Dx
Sample ID	MW-13-Q316		
Duplicate Sample ID		COC Bottles	BTEX 3x of 40 ml - HCL, Gx 3x 40 ml - HCL, Naphthalenes, cPAHs 2x 250 ml amber unpreserved, Dx- 2x 250 ml amber glass HCL
Dup Sample Time		Remarks	LFP

Sampler: Alex Pink


Well Integrity Checklist

Item	Yes	No	NA	Notes
Type of well head				Round 12"
Well Secured on initial inspection	X			
Is Well ID Visible?	X			
Water in the well box		X		
Sleeve around the well box in good condition	X			

ATTACHMENT B

Laboratory Report and Chain of Custody Documents



ANALYTICAL RESULTS

Prepared by:

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

Prepared for:

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Report Date: April 13, 2016

Project: WA-5544

Submittal Date: 03/30/2016
Group Number: 1645295
PO Number: GP09BPNA.WA39
State of Sample Origin: WA

<u>Client Sample Description</u>	<u>Lancaster Labs (LL) #</u>
MW-2 Grab Water	8308759
MW-3 Grab Water	8308760
MW-5 Grab Water	8308761
MW-6 Grab Water	8308762
MW-9 Grab Water	8308763
MW-10 Grab Water	8308764
MW-11 Grab Water	8308765
MW-12 Grab Water	8308766
MW-13 Grab Water	8308767
DUP-1 Grab Water	8308768

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 Copy To	Atlantic Richfield c/o ARCADIS	Attn: Ophelie Encelle
Electronic Copy To	ARCADIS U.S., Inc.	Attn: Ryan Brauchla
Electronic Copy To	ARCADIS U.S., Inc.	Attn: Brian Marcum
Electronic Copy To	ARCADIS U.S., Inc.	Attn: Richard Rodriguez
Electronic Copy To	ARCADIS U.S., Inc.	Attn: Ross LaGrandeur

Respectfully Submitted,



Stacy L. Butt
Specialist

(717) 556-7236

Project Name: WA-5544
LL Group #: 1645295

General Comments:

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client. The compliance signature is located on the cover page of the Analysis Reports.

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if 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.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:**SW-846 8260B, GC/MS Volatiles**

Sample #s: 8308762

Reporting limits were raised due to interference from the sample matrix.

Sample Description: MW-2 Grab Water
WA-5544 COC: R216201
19918 68th Avenue South - Kent, WA

LL Sample # WW 8308759
LL Group # 1645295
Account # 13255

Project Name: WA-5544

Collected: 03/25/2016 16:00 by RB

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 03/30/2016 09:25

Reported: 04/13/2016 12:10

55442

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles SW-846 8260B						
10335	Benzene	71-43-2	0.74 J	0.50	1.0	1
10335	Ethylbenzene	100-41-4	400	5.0	10	10
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	0.63 J	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	810	5.0	10	10
GC/MS Semivolatiles SW-846 8270C SIM						
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.051	1
08357	Chrysene	218-01-9	N.D.	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.051	1
GC Volatiles ECY 97-602 NWTPH-Gx						
08273	NWTPH-Gx water C7-C12	n.a.	10,000	500	2,500	10
GC Petroleum ECY 97-602 NWTPH-Dx modified						
12899	DX DRO C12-C24	n.a.	590	46	100	1
12899	DX HRO C24-C40	n.a.	N.D.	100	260	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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	P160972AA	04/06/2016 16:19	Daniel H Heller	1
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	P160972AA	04/06/2016 16:45	Daniel H Heller	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P160972AA	04/06/2016 16:19	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	P160972AA	04/06/2016 16:45	Daniel H Heller	10
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16092WAB026	04/11/2016 09:58	Holly B Ziegler	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16092WAB026	04/01/2016 17:00	Ryan A Schafran	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16097B20A	04/07/2016 21:05	Jeremy C Giffin	10
01146	GC VOA Water Prep	SW-846 5030B	1	16097B20A	04/07/2016 21:05	Jeremy C Giffin	10
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTPH-Dx modified	1	160920024A	04/05/2016 13:21	Christine E Dolman	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-2 Grab Water
WA-5544 COC: R216201
19918 68th Avenue South - Kent, WA

LL Sample # WW 8308759
LL Group # 1645295
Account # 13255

Project Name: WA-5544

Collected: 03/25/2016 16:00 by RB

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 03/30/2016 09:25

630 Plaza Drive

Reported: 04/13/2016 12:10

Highlands Ranch CO 80129

55442

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTPH-Dx 06/97	1	160920024A	04/04/2016 09:30	Bradley W VanLeuven	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-3 Grab Water
WA-5544 COC: R216201
19918 68th Avenue South - Kent, WA

LL Sample # WW 8308760
LL Group # 1645295
Account # 13255

Project Name: WA-5544

Collected: 03/25/2016 14:20 by RB

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 03/30/2016 09:25

Reported: 04/13/2016 12:10

55443

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles SW-846 8260B ug/l						
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC/MS Semivolatiles SW-846 8270C SIM ug/l						
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.052	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.052	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.052	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.052	1
08357	Chrysene	218-01-9	N.D.	0.010	0.052	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.052	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.052	1
GC Volatiles ECY 97-602 NWTPH-Gx ug/l						
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	250	1
GC Petroleum ECY 97-602 NWTPH-Dx modified ug/l						
12899	DX DRO C12-C24	n.a.	N.D.	46	100	1
12899	DX HRO C24-C40	n.a.	N.D.	100	260	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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	P160972AA	04/06/2016 13:17	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P160972AA	04/06/2016 13:17	Daniel H Heller	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16092WAB026	04/11/2016 10:25	Holly B Ziegler	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16092WAB026	04/01/2016 17:00	Ryan A Schafran	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16094B20A	04/05/2016 01:08	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030B	1	16094B20A	04/05/2016 01:08	Marie D Beamenderfer	1
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTPH-Dx modified	1	160920024A	04/05/2016 13:44	Christine E Dolman	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTPH-Dx 06/97	1	160920024A	04/04/2016 09:30	Bradley W VanLeuven	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-5 Grab Water
WA-5544 COC: R216201
19918 68th Avenue South - Kent, WA

LL Sample # WW 8308761
LL Group # 1645295
Account # 13255

Project Name: WA-5544

Collected: 03/25/2016 11:30 by RB

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 03/30/2016 09:25

Reported: 04/13/2016 12:10

55445

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles SW-846 8260B						
10335	Benzene	71-43-2	1.3	ug/l 0.50	ug/l 1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	4.1	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC/MS Semivolatiles SW-846 8270C SIM						
08357	Benzo(a)anthracene	56-55-3	N.D.	ug/l 0.010	ug/l 0.052	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.052	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.052	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.052	1
08357	Chrysene	218-01-9	N.D.	0.010	0.052	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.052	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.052	1
GC Volatiles ECY 97-602 NWTPH-Gx						
08273	NWTPH-Gx water C7-C12	n.a.	220 J	ug/l 50	ug/l 250	1
GC Petroleum Hydrocarbons ECY 97-602 NWTPH-Dx modified						
12899	DX DRO C12-C24	n.a.	1,100	ug/l 47	ug/l 100	1
12899	DX HRO C24-C40	n.a.	N.D.	100	260	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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	P160972AA	04/06/2016 15:53	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P160972AA	04/06/2016 15:53	Daniel H Heller	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16092WAB026	04/11/2016 10:52	Holly B Ziegler	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16092WAB026	04/01/2016 17:00	Ryan A Schafran	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16091B20A	03/31/2016 22:29	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	16091B20A	03/31/2016 22:29	Jeremy C Giffin	1
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTPH-Dx modified	1	160920024A	04/05/2016 14:07	Christine E Dolman	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTPH-Dx 06/97	1	160920024A	04/04/2016 09:30	Bradley W VanLeuven	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-6 Grab Water
WA-5544 COC: R216201
19918 68th Avenue South - Kent, WA

LL Sample # WW 8308762
LL Group # 1645295
Account # 13255

Project Name: WA-5544

Collected: 03/25/2016 16:30 by RB

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 03/30/2016 09:25

Reported: 04/13/2016 12:10

55446

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles SW-846 8260B ug/l						
10335	Benzene	71-43-2	1.2 J	1.0	2.0	2
10335	Ethylbenzene	100-41-4	53	1.0	2.0	2
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	1.0	2.0	2
10335	Toluene	108-88-3	1.5 J	1.0	2.0	2
10335	Xylene (Total)	1330-20-7	550	1.0	2.0	2
Reporting limits were raised due to interference from the sample matrix.						
GC/MS Semivolatiles SW-846 8270C SIM ug/l						
08357	Benzo(a)anthracene	56-55-3	0.016 J	0.010	0.050	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.050	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.050	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.050	1
08357	Chrysene	218-01-9	N.D.	0.010	0.050	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.050	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.050	1
GC Volatiles ECY 97-602 NWTPH-Gx ug/l						
08273	NWTPH-Gx water C7-C12	n.a.	32,000	500	2,500	10
GC Petroleum Hydrocarbons ECY 97-602 NWTPH-Dx modified ug/l						
12899	DX DRO C12-C24	n.a.	2,200	47	100	1
12899	DX HRO C24-C40	n.a.	360	100	260	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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	P160972AA	04/06/2016 17:11	Daniel H Heller	2
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P160972AA	04/06/2016 17:11	Daniel H Heller	2
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16092WAB026	04/11/2016 11:19	Holly B Ziegler	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16092WAB026	04/01/2016 17:00	Ryan A Schafran	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16091B20A	04/01/2016 04:04	Jeremy C Giffin	10
01146	GC VOA Water Prep	SW-846 5030B	1	16091B20A	04/01/2016 04:04	Jeremy C Giffin	10
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTPH-Dx modified	1	160970028A	04/09/2016 06:38	Christine E Dolman	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTPH-Dx 06/97	2	160970028A	04/07/2016 06:30	David S Schrum	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-9 Grab Water
WA-5544 COC: R216201
19918 68th Avenue South - Kent, WA

LL Sample # WW 8308763
LL Group # 1645295
Account # 13255

Project Name: WA-5544

Collected: 03/25/2016 10:40 by RB

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 03/30/2016 09:25

630 Plaza Drive

Reported: 04/13/2016 12:10

Highlands Ranch CO 80129

55449

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles SW-846 8260B ug/l						
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC/MS Semivolatiles SW-846 8270C SIM ug/l						
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.051	1
08357	Chrysene	218-01-9	N.D.	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.051	1
GC Volatiles ECY 97-602 NWTPH-Gx ug/l						
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	250	1
GC Petroleum ECY 97-602 NWTPH-Dx modified ug/l						
12899	DX DRO C12-C24	n.a.	N.D.	46	100	1
12899	DX HRO C24-C40	n.a.	N.D.	100	260	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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	P160972AA	04/06/2016 18:03	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P160972AA	04/06/2016 18:03	Daniel H Heller	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16092WAB026	04/11/2016 11:47	Holly B Ziegler	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16092WAB026	04/01/2016 17:00	Ryan A Schafran	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16091B20A	03/31/2016 22:57	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	16091B20A	03/31/2016 22:57	Jeremy C Giffin	1
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTPH-Dx modified	1	160920024A	04/05/2016 16:03	Christine E Dolman	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTPH-Dx 06/97	1	160920024A	04/04/2016 09:30	Bradley W VanLeuven	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-10 Grab Water
WA-5544 COC: R216201
19918 68th Avenue South - Kent, WA

LL Sample # WW 8308764
LL Group # 1645295
Account # 13255

Project Name: WA-5544

Collected: 03/25/2016 13:30 by RB

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 03/30/2016 09:25

Reported: 04/13/2016 12:10

54410

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles SW-846 8260B ug/l						
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC/MS Semivolatiles SW-846 8270C SIM ug/l						
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.051	1
08357	Chrysene	218-01-9	N.D.	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.051	1
GC Volatiles ECY 97-602 NWTPH-Gx ug/l						
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	250	1
GC Petroleum ECY 97-602 NWTPH-Dx ug/l						
Hydrocarbons modified						
12899	DX DRO C12-C24	n.a.	N.D.	47	100	1
12899	DX HRO C24-C40	n.a.	N.D.	100	260	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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	P160972AA	04/06/2016 18:29	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P160972AA	04/06/2016 18:29	Daniel H Heller	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16092WAB026	04/11/2016 12:14	Holly B Ziegler	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16092WAB026	04/01/2016 17:00	Ryan A Schafran	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16091B20A	03/31/2016 23:24	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	16091B20A	03/31/2016 23:24	Jeremy C Giffin	1
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTPH-Dx modified	1	160920024A	04/05/2016 16:26	Christine E Dolman	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTPH-Dx 06/97	1	160920024A	04/04/2016 09:30	Bradley W VanLeuven	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-11 Grab Water
WA-5544 COC: R216201
19918 68th Avenue South - Kent, WA

LL Sample # WW 8308765
LL Group # 1645295
Account # 13255

Project Name: WA-5544

Collected: 03/25/2016 10:00 by RB

Atlantic Richfield c/o ARCADIS
Suite 600

Submitted: 03/30/2016 09:25

630 Plaza Drive

Reported: 04/13/2016 12:10

Highlands Ranch CO 80129

54411

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles SW-846 8260B ug/l						
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC/MS Semivolatiles SW-846 8270C SIM ug/l						
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.051	1
08357	Chrysene	218-01-9	N.D.	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.051	1
GC Volatiles ECY 97-602 NWTPH-Gx ug/l						
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	250	1
GC Petroleum ECY 97-602 NWTPH-Dx ug/l						
Hydrocarbons modified						
12899	DX DRO C12-C24	n.a.	N.D.	46	100	1
12899	DX HRO C24-C40	n.a.	N.D.	100	250	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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	P160973AA	04/07/2016 02:39	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P160973AA	04/07/2016 02:39	Kevin A Sposito	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16092WAB026	04/11/2016 12:41	Holly B Ziegler	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16092WAB026	04/01/2016 17:00	Ryan A Schafran	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16091B20A	03/31/2016 23:52	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	16091B20A	03/31/2016 23:52	Jeremy C Giffin	1
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTPH-Dx modified	1	160970029A	04/09/2016 08:34	Christine E Dolman	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTPH-Dx 06/97	1	160970029A	04/07/2016 06:30	David S Schrum	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-12 Grab Water
WA-5544 COC: R216201
19918 68th Avenue South - Kent, WA

LL Sample # WW 8308766
LL Group # 1645295
Account # 13255

Project Name: WA-5544

Collected: 03/25/2016 12:10 by RB

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 03/30/2016 09:25

Reported: 04/13/2016 12:10

54412

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles SW-846 8260B						
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	3.9	0.50	1.0	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	0.82 J	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	2.2	0.50	1.0	1
GC/MS Semivolatiles SW-846 8270C SIM						
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.051	1
08357	Chrysene	218-01-9	N.D.	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.051	1
GC Volatiles ECY 97-602 NWTPH-Gx						
08273	NWTPH-Gx water C7-C12	n.a.	85 J	50	250	1
GC Petroleum Hydrocarbons ECY 97-602 NWTPH-Dx modified						
12899	DX DRO C12-C24	n.a.	N.D.	48	110	1
12899	DX HRO C24-C40	n.a.	N.D.	110	260	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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	P160973AA	04/07/2016 03:05	Kevin A Sposito	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P160973AA	04/07/2016 03:05	Kevin A Sposito	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16092WAB026	04/11/2016 13:09	Holly B Ziegler	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16092WAB026	04/01/2016 17:00	Ryan A Schafran	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16091B20A	04/01/2016 00:20	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	16091B20A	04/01/2016 00:20	Jeremy C Giffin	1
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTPH-Dx modified	1	160970029A	04/09/2016 08:58	Christine E Dolman	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTPH-Dx 06/97	1	160970029A	04/07/2016 06:30	David S Schrum	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-13 Grab Water
WA-5544 COC: R216201
19918 68th Avenue South - Kent, WA

LL Sample # WW 8308767
LL Group # 1645295
Account # 13255

Project Name: WA-5544

Collected: 03/25/2016 12:50 by RB

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 03/30/2016 09:25

Reported: 04/13/2016 12:10

54413

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles SW-846 8260B						
10335	Benzene	71-43-2	N.D.	1.0	2.0	2
10335	Ethylbenzene	100-41-4	68	1.0	2.0	2
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	1.0	2.0	2
10335	Toluene	108-88-3	N.D.	1.0	2.0	2
10335	Xylene (Total)	1330-20-7	780	1.0	2.0	2
GC/MS Semivolatiles SW-846 8270C SIM						
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.052	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.052	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.052	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.052	1
08357	Chrysene	218-01-9	N.D.	0.010	0.052	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.052	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.052	1
GC Volatiles ECY 97-602 NWTPH-Gx						
08273	NWTPH-Gx water C7-C12	n.a.	30,000	500	2,500	10
GC Petroleum ECY 97-602 NWTPH-Dx						
Hydrocarbons modified						
12899	DX DRO C12-C24	n.a.	1,300	46	100	1
12899	DX HRO C24-C40	n.a.	N.D.	100	250	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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	P160973AA	04/07/2016 05:15	Kevin A Sposito	2
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P160973AA	04/07/2016 05:15	Kevin A Sposito	2
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16092WAB026	04/11/2016 13:36	Holly B Ziegler	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16092WAB026	04/01/2016 17:00	Ryan A Schafran	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16091B20A	04/01/2016 04:32	Jeremy C Giffin	10
01146	GC VOA Water Prep	SW-846 5030B	1	16091B20A	04/01/2016 04:32	Jeremy C Giffin	10
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTPH-Dx modified	1	160970029A	04/09/2016 09:21	Christine E Dolman	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTPH-Dx 06/97	1	160970029A	04/07/2016 06:30	David S Schrum	1

*=This limit was used in the evaluation of the final result

Sample Description: DUP-1 Grab Water
WA-5544 COC: R216201
19918 68th Avenue South - Kent, WA

LL Sample # WW 8308768
LL Group # 1645295
Account # 13255

Project Name: WA-5544

Collected: 03/25/2016 by RB

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 03/30/2016 09:25

Reported: 04/13/2016 12:10

5544D

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles SW-846 8260B ug/l ug/l ug/l						
10335	Benzene	71-43-2	N.D.	1.0	2.0	2
10335	Ethylbenzene	100-41-4	50	1.0	2.0	2
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	1.0	2.0	2
10335	Toluene	108-88-3	1.5 J	1.0	2.0	2
10335	Xylene (Total)	1330-20-7	510	1.0	2.0	2
GC Volatiles ECY 97-602 NWTPH-Gx ug/l ug/l ug/l						
08273	NWTPH-Gx water C7-C12	n.a.	32,000	500	2,500	10

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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	P160973AA	04/07/2016 06:07	Kevin A Sposito	2
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P160973AA	04/07/2016 06:07	Kevin A Sposito	2
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16091B20A	04/01/2016 05:00	Jeremy C Giffin	10
01146	GC VOA Water Prep	SW-846 5030B	1	16091B20A	04/01/2016 05:00	Jeremy C Giffin	10

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS
Reported: 04/13/2016 12:10

Group Number: 1645295

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.

Method Blank

Analysis Name	Result	MDL**	LOQ
	ug/l	ug/l	ug/l
Batch number: P160972AA	Sample number(s): 8308759-8308764		
Benzene	N.D.	0.50	1.0
Ethylbenzene	N.D.	0.50	1.0
Methyl Tertiary Butyl Ether	N.D.	0.50	1.0
Toluene	N.D.	0.50	1.0
Xylene (Total)	N.D.	0.50	1.0
Batch number: P160973AA	Sample number(s): 8308765-8308768		
Benzene	N.D.	0.50	1.0
Ethylbenzene	N.D.	0.50	1.0
Methyl Tertiary Butyl Ether	N.D.	0.50	1.0
Toluene	N.D.	0.50	1.0
Xylene (Total)	N.D.	0.50	1.0
Batch number: 16092WAB026	Sample number(s): 8308759-8308767		
Benzo(a)anthracene	N.D.	0.010	0.050
Benzo(a)pyrene	N.D.	0.010	0.050
Benzo(b)fluoranthene	N.D.	0.010	0.050
Benzo(k)fluoranthene	N.D.	0.010	0.050
Chrysene	N.D.	0.010	0.050
Dibenz(a,h)anthracene	N.D.	0.010	0.050
Indeno(1,2,3-cd)pyrene	N.D.	0.010	0.050
Batch number: 16091B20A	Sample number(s): 8308761-8308768		
NWTPH-Gx water C7-C12	N.D.	50	250
Batch number: 16094B20A	Sample number(s): 8308760		
NWTPH-Gx water C7-C12	N.D.	50	250
Batch number: 16097B20A	Sample number(s): 8308759		
NWTPH-Gx water C7-C12	N.D.	50	250
Batch number: 160920024A	Sample number(s): 8308759-8308761, 8308763-8308764		
DX DRO C12-C24	49 J	45	100
DX HRO C24-C40	260	100	250
Batch number: 160970028A	Sample number(s): 8308762		
DX DRO C12-C24	N.D.	45	100
DX HRO C24-C40	N.D.	100	250
Batch number: 160970029A	Sample number(s): 8308765-8308767		
DX DRO C12-C24	N.D.	45	100
DX HRO C24-C40	N.D.	100	250

LCS/LCSD

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS
Reported: 04/13/2016 12:10

Group Number: 1645295

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCS D Spike Added ug/l	LCS D Conc ug/l	LCS %REC	LCS D %REC	LCS/LCS D Limits	RPD	RPD Max
Batch number: P160972AA	Sample number(s): 8308759-8308764								
Benzene	20	18.17	20	19.92	91	100	78-120	9	30
Ethylbenzene	20	19.12	20	20.59	96	103	78-120	7	30
Methyl Tertiary Butyl Ether	20	18.61	20	20.53	93	103	75-120	10	30
Toluene	20	18.52	20	20.21	93	101	80-120	9	30
Xylene (Total)	60	56.11	60	59.9	94	100	80-120	7	30
Batch number: P160973AA	Sample number(s): 8308765-8308768								
Benzene	20	19.2	20	18.31	96	92	78-120	5	30
Ethylbenzene	20	20.08	20	19.53	100	98	78-120	3	30
Methyl Tertiary Butyl Ether	20	19.76	20	19.1	99	96	75-120	3	30
Toluene	20	19.93	20	19.31	100	97	80-120	3	30
Xylene (Total)	60	59.03	60	57.73	98	96	80-120	2	30
Batch number: 16092WAB026	Sample number(s): 8308759-8308767								
Benzo(a)anthracene	1.00	0.939	1.00	0.894	94	89	71-118	5	30
Benzo(a)pyrene	1.00	0.912	1.00	0.875	91	88	70-120	4	30
Benzo(b)fluoranthene	1.00	0.957	1.00	0.920	96	92	76-132	4	30
Benzo(k)fluoranthene	1.00	0.877	1.00	0.852	88	85	69-126	3	30
Chrysene	1.00	0.876	1.00	0.823	88	82	66-119	6	30
Dibenz(a,h)anthracene	1.00	0.830	1.00	0.831	83	83	47-136	0	30
Indeno(1,2,3-cd)pyrene	1.00	0.837	1.00	0.819	84	82	52-134	2	30
Batch number: 16091B20A	Sample number(s): 8308761-8308768								
NWTPH-Gx water C7-C12	1100	1086.27	1100	1089.06	99	99	79-120	0	30
Batch number: 16094B20A	Sample number(s): 8308760								
NWTPH-Gx water C7-C12	1100	1061.76	1100	1069.77	97	97	79-120	1	30
Batch number: 16097B20A	Sample number(s): 8308759								
NWTPH-Gx water C7-C12	1100	1090.06	1100	1098.52	99	100	79-120	1	30
Batch number: 160920024A	Sample number(s): 8308759-8308761, 8308763-8308764								
DX DRO C12-C24	600	281.57	600	340.18	47	57	32-115	19	20
Batch number: 160970028A	Sample number(s): 8308762								
DX DRO C12-C24	600	352.56	600	400.1	59	67	32-115	13	20
Batch number: 160970029A	Sample number(s): 8308765-8308767								
DX DRO C12-C24	600	400.94	600	389.49	67	65	32-115	3	20

MS/MSD

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

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: P160972AA	Sample number(s): 8308759-8308764 UNSPK: 8308761									

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

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

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS
Reported: 04/13/2016 12:10

Group Number: 1645295

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Benzene	1.31	20	21.67	20	22.24	102	105	78-120	3	30
Ethylbenzene	N.D.	20	21.73	20	22.24	109	111	78-120	2	30
Methyl Tertiary Butyl Ether	4.10	20	25.72	20	25.77	108	108	75-120	0	30
Toluene	N.D.	20	21.12	20	20.91	106	105	80-120	1	30
Xylene (Total)	N.D.	60	63.79	60	65.1	106	108	80-120	2	30

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: VOCs 8260 BTEX/MTBE
Batch number: P160972AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8308759	104	101	110	111
8308760	106	101	110	109
8308761	104	105	109	109
8308762	104	102	109	110
8308763	105	102	110	110
8308764	107	106	109	110
Blank	104	97	110	109
LCS	106	101	104	104
LCSD	105	102	104	104
MS	105	103	103	103
MSD	106	105	103	104
Limits:	80-116	77-113	80-113	78-113

Analysis Name: VOCs 8260 BTEX/MTBE
Batch number: P160973AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8308765	102	100	111	110
8308766	104	101	112	112
8308767	103	102	111	113
8308768	103	100	111	112
Blank	103	103	111	113
LCS	104	101	104	105
LCSD	103	103	103	104
Limits:	80-116	77-113	80-113	78-113

Analysis Name: PAHs in waters by SIM
Batch number: 16092WAB026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
8308759	77	92	95
8308760	92	87	87
8308761	69	91	94
8308762	68	79	99
8308763	83	84	89
8308764	76	91	86

*- Outside of specification

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

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS
Reported: 04/13/2016 12:10

Group Number: 1645295

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
8308765	81	78	89
8308766	94	92	93
8308767	75	94	105
Blank	82	88	77
LCS	95	93	87
LCSD	91	91	84
Limits:	50-133	41-137	43-126

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 16091B20A

	Trifluorotoluene-F
8308761	90
8308762	80
8308763	91
8308764	77
8308765	77
8308766	77
8308767	90
8308768	90
Blank	77
LCS	86
LCSD	98
Limits:	63-135

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 16094B20A

	Trifluorotoluene-F
8308760	79
Blank	91
LCS	87
LCSD	100
Limits:	63-135

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 16097B20A

	Trifluorotoluene-F
8308759	92
Blank	94
LCS	103
LCSD	103
Limits:	63-135

Analysis Name: DRO/DX Mini-extraction Master
Batch number: 160920024A

	Orthoterphenyl
8308759	103
8308760	101
8308761	118
8308763	94

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

- (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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS
Reported: 04/13/2016 12:10

Group Number: 1645295

Orthoterphenyl	
8308764	89
Blank	95
LCS	91
LCSD	97

Limits: 50-150

Analysis Name: DRO/DX Mini-extraction Master
Batch number: 160970028A

Orthoterphenyl	
8308762	86
Blank	111
LCS	98
LCSD	113

Limits: 50-150

Analysis Name: DRO/DX Mini-extraction Master
Batch number: 160970029A

Orthoterphenyl	
8308765	108
8308766	114
8308767	113
Blank	108
LCS	113
LCSD	106

Limits: 50-150

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.



13255/1645295/8308759-69

Laboratory Management Program LaMP Chain of Custody Record R216201

Page 1 of 1

BP Site Node Path: _____

Req Due Date (mm/dd/yy): STAT

Rush TAT: Yes ___ No

BP Facility No: 5544

Lab Work Order Number: _____

Lab Name: Eurofins Lancaster Laboratories Environmental	Facility Address: 19918 68 th Avenue South	Consultant/Contractor: Arcadis
Lab Address: 2425 New Holland Pike, Lancaster, PA 17601	City, State, ZIP Code: Kent, WA 98032	Consultant/Contractor Project No: GPO9BPNA.WA39
Lab PM: Stacy Hess	Lead Regulatory Agency: Ecology	Address: 1100 Olive Way, Suite 800, Seattle, WA 98101
Lab Phone: 717-556-7236	California Global ID No.:	Consultant/Contractor PM: Brian Marcum
Lab Shipping Acct:	Enfos Proposal No.:	Phone: 503-220-8201 Email: brian.marcum@arcadis.com
Lab Bottle Order No.:	Accounting Mode: Provision ___ OOC-BU ___ OOC-RM ___	Email EDD To: richard.rodriguez@arcadis.com and to lab.emsdoc@bp.com ryan.brauchla@arcadis.com
Other Info:	Stage: Activity:	Invoice To: BP ___ Contractor <input checked="" type="checkbox"/>

BP Project Manager (PM):				Matrix		No. Containers / Preservative						Requested Analyses						Report Type & QC Level							
BP PM Phone:				Soil / Solid	Water / Liquid	Air / Vapor	Is this location a well?	Total Number of Container:	Unpreserved	H2SO4	HNO3	HCl	Methanol	GRO by NWT/PH-GX	DRO/HO by NWT/PH-DK	MTBE/dTEX by 8260	cPAHs by 8700-SIM							Standard <input checked="" type="checkbox"/>	Full Data Package ___
BP PM Email:																									
Lab No.	Sample Description	Date	Time																						
	MW-2	3/25/16	1600	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Y	10	2																	
	MW-3	3/25/16	1420	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Y	10	2																	
	MW-5	3/25/16	1130	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Y	10	2																	
	MW-6	3/25/16	1630	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Y	10	2																	2 AMBERS are 1-L instead of 200ml
	MW-9	3/25/16	1040	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Y	10	2																	
	MW-10	3/25/16	1330	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Y	10	2																	
	MW-11	3/25/16	1000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Y	10	2																	
	MW-12	3/25/16	1210	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Y	10	2																	
	MW-13	3/25/16	1250	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Y	10	2																	
	DUP-1	3/25/16	—	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Y	6																		

Sampler's Name: Ryan Brauchla	Relinquished By / Affiliation		Date	Time	Accepted By / Affiliation		Date	Time
Sampler's Company: ARCADIS	Alex Pate		3/29/16	1130	Matthew LELLE		3/29/16	11:30
Shipment Method:	Ship Date:							
Shipment Tracking No:					ELLE		3/29/16	925

Special Instructions: Questions or concerns call Ryan Brauchla (509)438-9828; cPAHs = benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenz[a,h]anthracene, indeno[1,2,3-cd]pyrene

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No | Temp Blank: Yes / No | Cooler Temp on Receipt: 0.4-2.1 °F | Trip Blank: Yes / No | MS/MSD Sample Submitted: Yes / No

Client: BP

Delivery and Receipt Information

Delivery Method: ^{03/30/16} ~~UPS~~ SeaTac Arrival Timestamp: 03/30/2016 9:25
 Number of Packages: 5 Number of Projects: 1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	2
Paperwork Enclosed:	Yes	Trip Blank Type:	HCL
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Timothy Cubberley (6520) at 10:15 on 03/30/2016

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT131	2.1	DT	Wet	Y	Bagged	N
2	DT131	1.7	DT	Wet	Y	Bagged	N
3	DT131	0.4	DT	Wet	Y	Bagged	N
4	DT131	1.6	DT	Wet	Y	Bagged	N
5	DT131	0.9	DT	Wet	Y	Bagged	N

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, and ISO 17025) 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.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

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

Prepared for:

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Report Date: June 27, 2016

Project: WA-5544

Submittal Date: 06/09/2016
Group Number: 1670059
PO Number: GP09BPNA.WA39
State of Sample Origin: WA

Client Sample Description

	Lancaster Labs (LL) #
MW-11 Water	8417315
MW-9 Water	8417316
MW-12 Water	8417317
MW-13 Water	8417318
MW-10 Water	8417319
MW-6 Water	8417320
MW-2 Water	8417321
MW-5 Water	8417322
MW-3 Water	8417323
DUP-1 Water	8417324
Trip Blank Water	8417325

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 Copy To	ARCADIS U.S., Inc.	Attn: Ryan Brauchla
Electronic Copy To	Atlantic Richfield c/o ARCADIS	Attn: Ophelie Encelle
Electronic Copy To	ARCADIS U.S., Inc.	Attn: Brian Marcum
Electronic Copy To	ARCADIS U.S., Inc.	Attn: Richard Rodriguez
Electronic Copy To	ARCADIS U.S., Inc.	Attn: Ross LaGrandeur

Respectfully Submitted,



Stacy L. Hess
Project Manager

(717) 556-7236

Project Name: WA-5544
LL Group #: 1670059

General Comments:

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client. The compliance signature is located on the cover page of the Analysis Reports.

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if 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.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:**SW-846 8260B, GC/MS Volatiles**

Sample #s: 8417320

Reporting limits were raised due to sample foaming.

SW-846 8270C SIM, GC/MS Semivolatiles

Batch #: 16163WAB026 (Sample number(s): 8417315-8417323 UNSPK: P420056)

The recovery(ies) for the following analyte(s) in the MS and/or MSD was outside the acceptance window: Naphthalene

Sample Description: MW-11 Water
WA-5544 COC: R215936
19918 68th Ave South - Kent, WA

LL Sample # WW 8417315
LL Group # 1670059
Account # 13255

Project Name: WA-5544

Collected: 06/07/2016 09:55 by EK

Atlantic Richfield c/o ARCADIS
 Suite 600
 630 Plaza Drive
 Highlands Ranch CO 80129

Submitted: 06/09/2016 09:50

Reported: 06/27/2016 15:52

KNT11

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC/MS	Semivolatiles	SW-846 8270C SIM	ug/l	ug/l	ug/l	
08357	1-Methylnaphthalene	90-12-0	N.D.	0.010	0.052	1
08357	2-Methylnaphthalene	91-57-6	N.D.	0.010	0.052	1
08357	Naphthalene	91-20-3	N.D.	0.031	0.063	1
GC	Volatiles	ECY 97-602 NWTTPH-Gx	ug/l	ug/l	ug/l	
08273	NWTTPH-Gx water C7-C12	n.a.	N.D.	50	250	1
GC	Petroleum Hydrocarbons	ECY 97-602 NWTTPH-Dx modified	ug/l	ug/l	ug/l	
12899	DX DRO C12-C24	n.a.	N.D.	48	110	1
12899	DX HRO C24-C40	n.a.	N.D.	110	270	1

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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	Y161681AA	06/16/2016 20:01	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y161681AA	06/16/2016 20:01	Matthew S Krause	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16163WAB026	06/20/2016 15:15	Catherine E Bachman	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16163WAB026	06/13/2016 09:00	Jessica M Cook	1
08273	NWTTPH-Gx water C7-C12	ECY 97-602 NWTTPH-Gx	1	16167A53A	06/16/2016 19:54	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	16167A53A	06/16/2016 19:54	Jeremy C Giffin	1
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTTPH-Dx modified	1	161680030A	06/20/2016 13:09	Christine E Dolman	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTTPH-Dx 06/97	1	161680030A	06/17/2016 08:00	Kayla Yuditsky	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-9 Water
WA-5544 COC: R215936
19918 68th Ave South - Kent, WA

LL Sample # WW 8417316
LL Group # 1670059
Account # 13255

Project Name: WA-5544

Collected: 06/07/2016 10:35 by EK

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 06/09/2016 09:50

Reported: 06/27/2016 15:52

KNT09

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC/MS	Semivolatiles	SW-846 8270C SIM	ug/l	ug/l	ug/l	
08357	1-Methylnaphthalene	90-12-0	N.D.	0.011	0.053	1
08357	2-Methylnaphthalene	91-57-6	N.D.	0.011	0.053	1
08357	Naphthalene	91-20-3	N.D.	0.032	0.063	1
GC	Volatiles	ECY 97-602 NWTTPH-Gx	ug/l	ug/l	ug/l	
08273	NWTTPH-Gx water C7-C12	n.a.	N.D.	50	250	1
GC	Petroleum Hydrocarbons	ECY 97-602 NWTTPH-Dx modified	ug/l	ug/l	ug/l	
12899	DX DRO C12-C24	n.a.	N.D.	47	100	1
12899	DX HRO C24-C40	n.a.	N.D.	100	260	1

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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	Y161681AA	06/16/2016 20:24	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y161681AA	06/16/2016 20:24	Matthew S Krause	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16163WAB026	06/20/2016 15:46	Catherine E Bachman	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16163WAB026	06/13/2016 09:00	Jessica M Cook	1
08273	NWTTPH-Gx water C7-C12	ECY 97-602 NWTTPH-Gx	1	16167A53A	06/16/2016 20:21	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	16167A53A	06/16/2016 20:21	Jeremy C Giffin	1
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTTPH-Dx modified	1	161680030A	06/20/2016 12:01	Christine E Dolman	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTTPH-Dx 06/97	1	161680030A	06/17/2016 08:00	Kayla Yuditsky	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-12 Water
WA-5544 COC: R215936
19918 68th Ave South - Kent, WA

LL Sample # WW 8417317
LL Group # 1670059
Account # 13255

Project Name: WA-5544

Collected: 06/07/2016 11:10 by EK

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 06/09/2016 09:50

Reported: 06/27/2016 15:52

KNT12

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	5.1	0.50	1.0	1
10335	Ethylbenzene	100-41-4	150	0.50	1.0	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	0.64 J	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	48	0.50	1.0	1
GC/MS	Semivolatiles	SW-846 8270C SIM	ug/l	ug/l	ug/l	
08357	1-Methylnaphthalene	90-12-0	1.1	0.011	0.053	1
08357	2-Methylnaphthalene	91-57-6	0.85	0.011	0.053	1
08357	Naphthalene	91-20-3	19	0.16	0.32	5
GC	Volatiles	ECY 97-602 NWTTPH-Gx	ug/l	ug/l	ug/l	
08273	NWTTPH-Gx water C7-C12	n.a.	1,400	50	250	1
GC	Petroleum Hydrocarbons	ECY 97-602 NWTTPH-Dx modified	ug/l	ug/l	ug/l	
12899	DX DRO C12-C24	n.a.	470	46	100	1
12899	DX HRO C24-C40	n.a.	N.D.	100	260	1

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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	Y161681AA	06/16/2016 20:46	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y161681AA	06/16/2016 20:46	Matthew S Krause	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16163WAB026	06/20/2016 16:17	Catherine E Bachman	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16163WAB026	06/21/2016 23:03	Catherine E Bachman	5
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16163WAB026	06/13/2016 09:00	Jessica M Cook	1
08273	NWTTPH-Gx water C7-C12	ECY 97-602 NWTTPH-Gx	1	16167A53A	06/16/2016 20:49	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	16167A53A	06/16/2016 20:49	Jeremy C Giffin	1
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTTPH-Dx modified	1	161680030A	06/20/2016 13:31	Christine E Dolman	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTTPH-Dx 06/97	1	161680030A	06/17/2016 08:00	Kayla Yuditsky	1

*=This limit was used in the evaluation of the final result

Sample Description: **MW-13 Water**
WA-5544 COC: R215936
19918 68th Ave South - Kent, WA

LL Sample # **WW 8417318**
 LL Group # **1670059**
 Account # **13255**

Project Name: **WA-5544**

Collected: 06/07/2016 11:45 by EK

Atlantic Richfield c/o ARCADIS
 Suite 600
 630 Plaza Drive
 Highlands Ranch CO 80129

Submitted: 06/09/2016 09:50

Reported: 06/27/2016 15:52

KNT13

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	1.6	0.50	1.0	1
10335	Ethylbenzene	100-41-4	100	0.50	1.0	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	4.5	0.50	1.0	1
10335	Toluene	108-88-3	1.4	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	680	5.0	10	10
GC/MS	Semivolatiles	SW-846 8270C SIM	ug/l	ug/l	ug/l	
08357	1-Methylnaphthalene	90-12-0	25	0.21	1.0	20
08357	2-Methylnaphthalene	91-57-6	21	0.21	1.0	20
08357	Naphthalene	91-20-3	130	0.63	1.3	20
GC	Volatiles	ECY 97-602 NWT PH-Gx	ug/l	ug/l	ug/l	
08273	NWT PH-Gx water C7-C12	n.a.	18,000	250	1,300	5
GC	Petroleum Hydrocarbons	ECY 97-602 NWT PH-Dx modified	ug/l	ug/l	ug/l	
12899	DX DRO C12-C24	n.a.	1,400	46	100	1
12899	DX HRO C24-C40	n.a.	N.D.	100	260	1

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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	Y161681AA	06/17/2016 00:30	Matthew S Krause	1
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	Y161681AA	06/17/2016 00:53	Matthew S Krause	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y161681AA	06/17/2016 00:30	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	Y161681AA	06/17/2016 00:53	Matthew S Krause	10
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16163WAB026	06/21/2016 23:35	Catherine E Bachman	20
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16163WAB026	06/13/2016 09:00	Jessica M Cook	1
08273	NWT PH-Gx water C7-C12	ECY 97-602 NWT PH-Gx	1	16167A53A	06/16/2016 23:06	Jeremy C Giffin	5
01146	GC VOA Water Prep	SW-846 5030B	1	16167A53A	06/16/2016 23:06	Jeremy C Giffin	5
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWT PH-Dx modified	1	161680030A	06/20/2016 15:03	Christine E Dolman	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWT PH-Dx 06/97	1	161680030A	06/17/2016 08:00	Kayla Yuditsky	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-10 Water
WA-5544 COC: R215936
19918 68th Ave South - Kent, WA

LL Sample # WW 8417319
LL Group # 1670059
Account # 13255

Project Name: WA-5544

Collected: 06/07/2016 12:40 by EK

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 06/09/2016 09:50

Reported: 06/27/2016 15:52

KNT10

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC/MS	Semivolatiles	SW-846 8270C SIM	ug/l	ug/l	ug/l	
08357	1-Methylnaphthalene	90-12-0	N.D.	0.011	0.053	1
08357	2-Methylnaphthalene	91-57-6	N.D.	0.011	0.053	1
08357	Naphthalene	91-20-3	N.D.	0.032	0.064	1
GC	Volatiles	ECY 97-602 NWTTPH-Gx	ug/l	ug/l	ug/l	
08273	NWTTPH-Gx water C7-C12	n.a.	N.D.	50	250	1
GC	Petroleum Hydrocarbons	ECY 97-602 NWTTPH-Dx modified	ug/l	ug/l	ug/l	
12899	DX DRO C12-C24	n.a.	N.D.	47	100	1
12899	DX HRO C24-C40	n.a.	N.D.	100	260	1

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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	Y161681AA	06/16/2016 21:09	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y161681AA	06/16/2016 21:09	Matthew S Krause	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16163WAB026	06/20/2016 17:21	Catherine E Bachman	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16163WAB026	06/13/2016 09:00	Jessica M Cook	1
08273	NWTTPH-Gx water C7-C12	ECY 97-602 NWTTPH-Gx	1	16167A53A	06/16/2016 21:16	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030B	1	16167A53A	06/16/2016 21:16	Jeremy C Giffin	1
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTTPH-Dx modified	1	161680030A	06/20/2016 13:55	Christine E Dolman	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTTPH-Dx 06/97	1	161680030A	06/17/2016 08:00	Kayla Yuditsky	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-6 Water
WA-5544 COC: R215936
19918 68th Ave South - Kent, WA

LL Sample # WW 8417320
LL Group # 1670059
Account # 13255

Project Name: WA-5544

Collected: 06/07/2016 13:20 by EK

Atlantic Richfield c/o ARCADIS
 Suite 600
 630 Plaza Drive
 Highlands Ranch CO 80129

Submitted: 06/09/2016 09:50

Reported: 06/27/2016 15:52

KNT06

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles SW-846 8260B						
10335	Benzene	71-43-2	2.4	1.0	2.0	2
10335	Ethylbenzene	100-41-4	100	1.0	2.0	2
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	1.0	2.0	2
10335	Toluene	108-88-3	3.2	1.0	2.0	2
10335	Xylene (Total)	1330-20-7	1,100	1.0	2.0	2
Reporting limits were raised due to sample foaming.						
GC/MS Semivolatiles SW-846 8270C SIM						
08357	1-Methylnaphthalene	90-12-0	29	0.21	1.1	20
08357	2-Methylnaphthalene	91-57-6	26	0.21	1.1	20
08357	Naphthalene	91-20-3	120	0.63	1.3	20
GC Volatiles ECY 97-602 NWTTPH-Gx						
08273	NWTTPH-Gx water C7-C12	n.a.	22,000	250	1,300	5
GC Petroleum Hydrocarbons ECY 97-602 NWTTPH-Dx modified						
12899	DX DRO C12-C24	n.a.	2,300	46	100	1
12899	DX HRO C24-C40	n.a.	200 J	100	260	1

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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	Y161681AA	06/17/2016 01:15	Matthew S Krause	2
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y161681AA	06/17/2016 01:15	Matthew S Krause	2
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16163WAB026	06/22/2016 00:06	Catherine E Bachman	20
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16163WAB026	06/13/2016 09:00	Jessica M Cook	1
08273	NWTTPH-Gx water C7-C12	ECY 97-602 NWTTPH-Gx	1	16167A53A	06/16/2016 23:34	Jeremy C Giffin	5
01146	GC VOA Water Prep	SW-846 5030B	1	16167A53A	06/16/2016 23:34	Jeremy C Giffin	5
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTTPH-Dx modified	1	161680030A	06/20/2016 15:49	Christine E Dolman	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTTPH-Dx 06/97	1	161680030A	06/17/2016 08:00	Kayla Yuditsky	1

*=This limit was used in the evaluation of the final result

Sample Description: **MW-2 Water**
WA-5544 COC: R215936
19918 68th Ave South - Kent, WA

LL Sample # **WW 8417321**
 LL Group # **1670059**
 Account # **13255**

Project Name: **WA-5544**

Collected: 06/07/2016 13:55 by EK

Atlantic Richfield c/o ARCADIS
 Suite 600
 630 Plaza Drive
 Highlands Ranch CO 80129

Submitted: 06/09/2016 09:50

Reported: 06/27/2016 15:52

KNT02

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles SW-846 8260B						
10335	Benzene	71-43-2	3.9	1.0	2.0	2
10335	Ethylbenzene	100-41-4	930	10	20	20
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	1.0	2.0	2
10335	Toluene	108-88-3	2.4	1.0	2.0	2
10335	Xylene (Total)	1330-20-7	1,900	10	20	20
GC/MS Semivolatiles SW-846 8270C SIM						
08357	1-Methylnaphthalene	90-12-0	47	0.21	1.0	20
08357	2-Methylnaphthalene	91-57-6	60	0.21	1.0	20
08357	Naphthalene	91-20-3	390	3.1	6.3	100
GC Volatiles ECY 97-602 NWT PH-Gx						
08273	NWT PH-Gx water C7-C12	n.a.	28,000	500	2,500	10
GC Petroleum ECY 97-602 NWT PH-Dx						
Hydrocarbons modified						
12899	DX DRO C12-C24	n.a.	3,100	46	100	1
12899	DX HRO C24-C40	n.a.	N.D.	100	250	1

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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	Y161681AA	06/17/2016 02:00	Matthew S Krause	2
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	Y161681AA	06/17/2016 02:22	Matthew S Krause	20
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y161681AA	06/17/2016 02:00	Matthew S Krause	2
01163	GC/MS VOA Water Prep	SW-846 5030B	2	Y161681AA	06/17/2016 02:22	Matthew S Krause	20
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16163WAB026	06/22/2016 00:38	Catherine E Bachman	20
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16163WAB026	06/22/2016 10:39	Catherine E Bachman	100
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16163WAB026	06/13/2016 09:00	Jessica M Cook	1
08273	NWT PH-Gx water C7-C12	ECY 97-602 NWT PH-Gx	1	16168A53A	06/18/2016 03:31	Marie D Beamenderfer	10
01146	GC VOA Water Prep	SW-846 5030B	1	16168A53A	06/18/2016 03:31	Marie D Beamenderfer	10
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWT PH-Dx modified	1	161680030A	06/20/2016 15:26	Christine E Dolman	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-2 Water
 WA-5544 COC: R215936
 19918 68th Ave South - Kent, WA

LL Sample # WW 8417321
 LL Group # 1670059
 Account # 13255

Project Name: WA-5544

Collected: 06/07/2016 13:55 by EK

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 06/09/2016 09:50

630 Plaza Drive

Reported: 06/27/2016 15:52

Highlands Ranch CO 80129

KNT02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTPH-Dx 06/97	1	161680030A	06/17/2016 08:00	Kayla Yuditsky	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-5 Water
WA-5544 COC: R215936
19918 68th Ave South - Kent, WA

LL Sample # WW 8417322
LL Group # 1670059
Account # 13255

Project Name: WA-5544

Collected: 06/07/2016 14:30 by EK

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 06/09/2016 09:50

Reported: 06/27/2016 15:52

KNT05

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	2.2	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC/MS	Semivolatiles	SW-846 8270C SIM	ug/l	ug/l	ug/l	
08357	1-Methylnaphthalene	90-12-0	0.16	0.010	0.052	1
08357	2-Methylnaphthalene	91-57-6	0.012 J	0.010	0.052	1
08357	Naphthalene	91-20-3	1.7	0.031	0.062	1
GC	Volatiles	ECY 97-602 NWTTPH-Gx	ug/l	ug/l	ug/l	
08273	NWTTPH-Gx water C7-C12	n.a.	370	50	250	1
GC	Petroleum Hydrocarbons	ECY 97-602 NWTTPH-Dx modified	ug/l	ug/l	ug/l	
12899	DX DRO C12-C24	n.a.	1,500	47	110	1
12899	DX HRO C24-C40	n.a.	N.D.	110	260	1

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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	Y161681AA	06/16/2016 21:31	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y161681AA	06/16/2016 21:31	Matthew S Krause	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16163WAB026	06/20/2016 18:55	Catherine E Bachman	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16163WAB026	06/13/2016 09:00	Jessica M Cook	1
08273	NWTTPH-Gx water C7-C12	ECY 97-602 NWTTPH-Gx	1	16168A53A	06/17/2016 22:00	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030B	1	16168A53A	06/17/2016 22:00	Marie D Beamenderfer	1
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTTPH-Dx modified	1	161680030A	06/20/2016 14:18	Christine E Dolman	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTTPH-Dx 06/97	1	161680030A	06/17/2016 08:00	Kayla Yuditsky	1

*=This limit was used in the evaluation of the final result

Sample Description: **MW-3 Water**
WA-5544 COC: R215936
19918 68th Ave South - Kent, WA

LL Sample # **WW 8417323**
 LL Group # **1670059**
 Account # **13255**

Project Name: **WA-5544**

Collected: 06/07/2016 15:00 by EK

Atlantic Richfield c/o ARCADIS
 Suite 600

Submitted: 06/09/2016 09:50

630 Plaza Drive

Reported: 06/27/2016 15:52

Highlands Ranch CO 80129

KNT03

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC/MS	Semivolatiles	SW-846 8270C SIM	ug/l	ug/l	ug/l	
08357	1-Methylnaphthalene	90-12-0	N.D.	0.011	0.053	1
08357	2-Methylnaphthalene	91-57-6	N.D.	0.011	0.053	1
08357	Naphthalene	91-20-3	N.D.	0.032	0.064	1
GC	Volatiles	ECY 97-602 NWT PH-Gx	ug/l	ug/l	ug/l	
08273	NWT PH-Gx water C7-C12	n.a.	N.D.	50	250	1
GC	Petroleum Hydrocarbons	ECY 97-602 NWT PH-Dx modified	ug/l	ug/l	ug/l	
12899	DX DRO C12-C24	n.a.	N.D.	46	100	1
12899	DX HRO C24-C40	n.a.	N.D.	100	250	1

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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	Y161681AA	06/16/2016 21:54	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y161681AA	06/16/2016 21:54	Matthew S Krause	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16163WAB026	06/20/2016 19:27	Catherine E Bachman	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16163WAB026	06/13/2016 09:00	Jessica M Cook	1
08273	NWT PH-Gx water C7-C12	ECY 97-602 NWT PH-Gx	1	16168A53A	06/17/2016 22:28	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030B	1	16168A53A	06/17/2016 22:28	Marie D Beamenderfer	1
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWT PH-Dx modified	1	161680030A	06/20/2016 14:41	Christine E Dolman	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWT PH-Dx 06/97	1	161680030A	06/17/2016 08:00	Kayla Yuditsky	1

*=This limit was used in the evaluation of the final result

Sample Description: DUP-1 Water
WA-5544 COC: R215936
19918 68th Ave South - Kent, WA

LL Sample # WW 8417324
LL Group # 1670059
Account # 13255

Project Name: WA-5544

Collected: 06/07/2016 by EK

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 06/09/2016 09:50

Reported: 06/27/2016 15:52

KNTFD

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles SW-846 8260B						
10335	Benzene	71-43-2	2.6	ug/l 0.50	ug/l 1.0	1
10335	Ethylbenzene	100-41-4	120	0.50	1.0	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	0.54 J	0.50	1.0	1
10335	Toluene	108-88-3	3.7	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	1,100	5.0	10	10
GC Volatiles ECY 97-602 NWTPH-Gx						
08273	NWTPH-Gx water C7-C12	n.a.	21,000	ug/l 250	ug/l 1,300	5

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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	Y161681AA	06/17/2016 02:44	Matthew S Krause	1
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	Y161681AA	06/17/2016 03:07	Matthew S Krause	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Y161681AA	06/17/2016 02:44	Matthew S Krause	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	Y161681AA	06/17/2016 03:07	Matthew S Krause	10
08273	NWTPH-Gx water C7-C12	ECY 97-602	1	16168A53A	06/18/2016 03:59	Marie D	5
		NWTPH-Gx				Beamenderfer	
01146	GC VOA Water Prep	SW-846 5030B	1	16168A53A	06/18/2016 03:59	Marie D	5
						Beamenderfer	

*=This limit was used in the evaluation of the final result

Sample Description: Trip Blank Water
WA-5544 COC: R215936
19918 68th Ave South - Kent, WA

LL Sample # WW 8417325
LL Group # 1670059
Account # 13255

Project Name: WA-5544

Collected: 06/07/2016

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 06/09/2016 09:50

Reported: 06/27/2016 15:52

KNTTB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC Volatiles						
	ECY 97-602	NWTPH-Gx	ug/l	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	250	1

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
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16168A53A	06/17/2016 18:47	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030B	1	16168A53A	06/17/2016 18:47	Marie D Beamenderfer	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS
Reported: 06/27/2016 15:52

Group Number: 1670059

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.

Method Blank

Analysis Name	Result	MDL**	LOQ
	ug/l	ug/l	ug/l
Batch number: Y161681AA	Sample number(s): 8417315-8417324		
Benzene	N.D.	0.50	1.0
Ethylbenzene	N.D.	0.50	1.0
Methyl Tertiary Butyl Ether	N.D.	0.50	1.0
Toluene	N.D.	0.50	1.0
Xylene (Total)	N.D.	0.50	1.0
Batch number: 16163WAB026	Sample number(s): 8417315-8417323		
1-Methylnaphthalene	N.D.	0.010	0.050
2-Methylnaphthalene	N.D.	0.010	0.050
Naphthalene	N.D.	0.030	0.060
Batch number: 16167A53A	Sample number(s): 8417315-8417320		
NWTPH-Gx water C7-C12	N.D.	50	250
Batch number: 16168A53A	Sample number(s): 8417321-8417325		
NWTPH-Gx water C7-C12	N.D.	50	250
Batch number: 161680030A	Sample number(s): 8417315-8417323		
DX DRO C12-C24	N.D.	45	100
DX HRO C24-C40	N.D.	100	250

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	ug/l	ug/l	ug/l	ug/l					
Batch number: Y161681AA	Sample number(s): 8417315-8417324								
Benzene	20	21.37	20	21.51	107	108	78-120	1	30
Ethylbenzene	20	21.03	20	21.2	105	106	78-120	1	30
Methyl Tertiary Butyl Ether	20	21.63	20	21.98	108	110	75-120	2	30
Toluene	20	20.96	20	21.05	105	105	80-120	0	30
Xylene (Total)	60	59.07	60	59.65	98	99	80-120	1	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 16163WAB026	Sample number(s): 8417315-8417323								
1-Methylnaphthalene	1.00	0.901			90		68-112		
2-Methylnaphthalene	1.00	0.904			90		59-124		
Naphthalene	1.00	0.852			85		61-112		
	ug/l	ug/l	ug/l	ug/l					

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS
Reported: 06/27/2016 15:52

Group Number: 1670059

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 16167A53A NWTPH-Gx water C7-C12	Sample number(s): 8417315-8417320								
	1100	1112.48	1100	1083.77	101	99	79-120	3	30
Batch number: 16168A53A NWTPH-Gx water C7-C12	Sample number(s): 8417321-8417325								
	1100	983.75	1100	1037.75	89	94	79-120	5	30
Batch number: 161680030A DX DRO C12-C24	Sample number(s): 8417315-8417323								
	600	421.87	600	399.6	70	67	32-115	5	20

MS/MSD

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

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 16163WAB026	Sample number(s): 8417315-8417323 UNSPK: P420056									
1-Methylnaphthalene	0.0456	1.01	0.969	1.02	0.977	92	91	68-112	1	30
2-Methylnaphthalene	0.0311	1.01	0.969	1.02	0.953	93	90	59-124	2	30
Naphthalene	N.D.	1.01	1.36	1.02	1.33	135*	130*	61-112	2	30

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: VOCs 8260 BTEX/MTBE
Batch number: Y161681AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8417315	101	103	103	102
8417316	101	105	103	102
8417317	100	103	103	106
8417318	98	101	106	108
8417319	101	102	103	103
8417320	98	101	105	107
8417321	97	101	104	107
8417322	100	103	103	103
8417323	101	104	104	102
8417324	97	101	106	107
Blank	100	104	104	103
LCS	98	102	104	105
LCSD	99	103	105	105

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS
Reported: 06/27/2016 15:52

Group Number: 1670059

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.

Limits: 80-116 77-113 80-113 78-113

Analysis Name: PAHs in waters by SIM
Batch number: 16163WAB026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
8417315	85	84	79
8417316	72	82	84
8417317	87	89	81
8417318	86	71	91
8417319	90	83	82
8417320	86	74	89
8417321	89	83	95
8417322	68	86	87
8417323	82	78	78
Blank	80	84	81
LCS	84	87	83
MS	84	85	86
MSD	82	86	86

Limits: 50-133 41-137 43-126

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 16167A53A

	Trifluorotoluene-F
8417315	102
8417316	114
8417317	101
8417318	98
8417319	123
8417320	100
Blank	115
LCS	118
LCSD	117

Limits: 63-135

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 16168A53A

	Trifluorotoluene-F
8417321	95
8417322	100
8417323	102
8417324	99
8417325	118
Blank	112
LCS	110
LCSD	109

Limits: 63-135

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

- (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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS
Reported: 06/27/2016 15:52

Group Number: 1670059

Surrogate Quality Control (continued)

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

Analysis Name: DRO/DX Mini-extraction Master
Batch number: 161680030A

	Orthoterphenyl
8417315	118
8417316	102
8417317	109
8417318	113
8417319	111
8417320	95
8417321	93
8417322	109
8417323	117
Blank	118
LCS	106
LCSD	108

Limits: 50-150

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.



13255 1670054 8417315-25
Laboratory Management Program LaMP Chain of Custody Record

R215936

Page 1 of 2

BP Site Node Path: _____

Req Due Date (mm/dd/yy): STAT

Rush TAT: Yes ___ No X

BP Facility No: 6544

Lab Work Order Number: _____

Lab Name: <u>Euro Fins Lancaster Labs Environmental</u>	Facility Address: <u>19918 68th Ave South</u>	Consultant/Contractor: <u>Arcadis</u>
Lab Address: <u>2425 New Holland Pike, Lancaster, PA 17601</u>	City, State, ZIP Code: <u>Lent, WA 98032</u>	Consultant/Contractor Project No: <u>6P09BPWA.WA39</u>
Lab PM: <u>Stacy Hess</u>	Lead Regulatory Agency: <u>Ecology</u>	Address: <u>1100 Olive Way, Suite 800, Seattle WA 98108</u>
Lab Phone: <u>717-556-7236</u>	California Global ID No.:	Consultant/Contractor PM: <u>Brian Marcum</u>
Lab Shipping Acct:	Enfos Proposal No:	Phone: <u>503-220-8201 x1137</u> Email: <u>brian.marcum@arcadis.com</u>
Lab Bottle Order No:	Accounting Mode: Provision ___ OOC-BU ___ OOC-RM ___	Email EDD To: <u>ryan.brawchla@arcadis.com</u> and to <u>lab.enfosdoc@bp.com</u> <u>Richard.cabrera@arcadis.com</u>
Other Info:	Stage: Activity:	Invoice To: BP ___ Contractor <u>X</u>

BP Project Manager (PM):				Matrix		No. Containers / Preservative							Requested Analyses							Report Type & QC Level							
BP PM Phone:				Soil / Solid	Water / Liquid	Air / Vapor	Is this location a well?	Total Number of Containers	Unpreserved	H2SO4	HNO3	HCl	Methanol	GZO by NWTPH-GX	DRO/TC NWTPH-DX	BTEX/MDE 82-60B	Naphthalenes 8270C 510A									Standard <u>X</u>	Full Data Package ___
BP PM Email:																											
Lab No.	Sample Description	Date	Time																								
	MW-11	6/7/16	0455	X				10	2																		
	MW-9		1035																								
	MW-12		1110																								
	MW-13		1145																								
	MW-10		1240																								
	MW-6		1320																								
	MW-2		1355																								
	MW-5		1430																								
	MW-3		1500																								

Sampler's Name: <u>Eric Krueger (EK)</u>	Relinquished By / Affiliation		Date	Time	Accepted By / Affiliation		Date	Time
Sampler's Company: <u>Arcadis</u>	<u>Ryan Brawchla / Arcadis</u>		<u>6/8/16</u>	<u>11:10</u>	<u>[Signature] / BMD</u>		<u>6/8/16</u>	<u>11:10</u>
Shipment Method: _____ Ship Date: _____	/		/	/	<u>[Signature] / ELLE</u>		<u>6-9-16</u>	<u>950</u>
Shipment Tracking No: _____	/		/	/	/		/	/

Special Instructions:

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes/No | Temp Blank Yes/No | Cooler Temp on Receipt: 1.0-(-7) °C | Trip Blank: Yes/No | MS/MSD Sample Submitted: Yes/No

Client: BP
Delivery and Receipt Information

Delivery Method:	<u>UPS</u>	Arrival Timestamp:	<u>06/09/2016 9:50</u>
Number of Packages:	<u>2</u>	Number of Projects:	<u>1</u>
State/Province of Origin:	<u>WA</u>		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace \geq 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	2
Paperwork Enclosed:	Yes	Trip Blank Type:	HCL
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Joseph Huber (7831) at 11:53 on 06/09/2016

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

<u>Cooler #</u>	<u>Thermometer ID</u>	<u>Corrected Temp</u>	<u>Therm. Type</u>	<u>Ice Type</u>	<u>Ice Present?</u>	<u>Ice Container</u>	<u>Elevated Temp?</u>
1	DT121	1.0	DT	Wet	Y	Bagged	N
2	DT121	1.7	DT	Wet	Y	Bagged	N

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, and ISO 17025) 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.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:

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

Prepared for:

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Report Date: October 19, 2016

Project: WA-5544

Submittal Date: 09/21/2016
Group Number: 1711302
PO Number: GP09BPNA.WA39
State of Sample Origin: WA

Client Sample Description

	Lancaster Labs (LL) #
MW-2 Grab Water	8601784
MW-3 Grab Water	8601785
MW-5 Grab Water	8601786
MW-6 Grab Water	8601787
MW-9 Grab Water	8601788
MW-10 Grab Water	8601789
MW-11 Grab Water	8601790
MW-12 Grab Water	8601791
MW-13 Grab Water	8601792
DUP-1 Grab Water	8601793

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 current scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>. To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To	ARCADIS U.S., Inc.	Attn: Ryan Brauchla
Electronic Copy To	Atlantic Richfield c/o ARCADIS	Attn: Ophelie Encelle
Electronic Copy To	ARCADIS U.S., Inc.	Attn: Brian Marcum
Electronic Copy To	ARCADIS U.S., Inc.	Attn: Ross LaGrandeur

Respectfully Submitted,



Stacy L. Hess
Project Manager

(717) 556-7236

Project Name: WA-5544
LL Group #: 1711302

General Comments:

Through our technical processes and second person review of data, we have established that our data/deliverables are in compliance with the methods and project requirements unless otherwise noted or previously resolved with the client. The compliance signature is located on the cover page of the Analysis Reports.

See the Laboratory Sample Analysis Record section of the Analysis Report for the method references.

All QC met criteria unless otherwise noted in an Analysis Specific Comment below. Refer to the QC Summary for specific values and acceptance criteria.

Project specific QC samples are not included in this data set

Matrix QC may not be reported if 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.

Surrogate recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in an Analysis Specific Comment below.

The samples were received at the appropriate temperature and in accordance with the chain of custody unless otherwise noted.

Analysis Specific Comments:**SW-846 8270C SIM, GC/MS Semivolatiles**

Sample #s: 8601784, 8601785, 8601786, 8601787, 8601788, 8601789, 8601790, 8601791, 8601792

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:
The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

Batch #: 16268WAD026 (Sample number(s): 8601784-8601792)

The recovery(ies) for the following analyte(s) in the LCS and/or LCSD were below the acceptance window: Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene
ECY 97-602 NWTPH-DX modified, GC Petroleum Hydrocarbons

Sample #s: 8601787

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:
The sample was re-extracted outside of the method required holding time, and surrogate recoveries are within the QC acceptance limits. Since the hold time had expired prior to the second extraction all results are reported from the original extract. Similar results were obtained in both extracts.

Batch #: 162740020A (Sample number(s): 8601784-8601792)

The recovery(ies) for one or more surrogates were outside of the QC window for sample(s) 8601787

Sample Description: MW-2 Grab Water
WA-5544 COC: R215949
19918 68th Ave South - Kent, WA

LL Sample # WW 8601784
LL Group # 1711302
Account # 13255

Project Name: WA-5544

Collected: 09/19/2016 17:20 by AP

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 09/21/2016 09:30

Reported: 10/19/2016 09:15

68KM2

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	5.2	0.50	1.0	1
10335	Ethylbenzene	100-41-4	320	5.0	10	10
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	1.7	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	200	0.50	1.0	1
GC/MS	Semivolatiles	SW-846 8270C SIM	ug/l	ug/l	ug/l	
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.050	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.050	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.050	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.050	1
08357	Chrysene	218-01-9	N.D.	0.010	0.050	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.050	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.050	1
<p>The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.</p>						
GC	Volatiles	ECY 97-602 NWT PH-Gx	ug/l	ug/l	ug/l	
08273	NWT PH-Gx water C7-C12	n.a.	7,900	500	2,500	10
GC	Petroleum Hydrocarbons	ECY 97-602 NWT PH-Dx modified	ug/l	ug/l	ug/l	
12899	DX DRO C12-C24	n.a.	2,300	48	110	1
12899	DX HRO C24-C40	n.a.	N.D.	110	270	1

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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	4162741AA	09/30/2016 13:50	Linda C Pape	1
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	4162742AA	09/30/2016 22:37	Kevin D Kelly	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4162741AA	09/30/2016 13:50	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	4162742AA	09/30/2016 22:37	Kevin D Kelly	10
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16268WAD026	09/26/2016 13:37	Catherine E Bachman	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-2 Grab Water
WA-5544 COC: R215949
19918 68th Ave South - Kent, WA

LL Sample # WW 8601784
LL Group # 1711302
Account # 13255

Project Name: WA-5544

Collected: 09/19/2016 17:20 by AP

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/21/2016 09:30

630 Plaza Drive

Reported: 10/19/2016 09:15

Highlands Ranch CO 80129

68KM2

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16268WAD026	09/25/2016 09:45	Nicholas W Shroyer	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16271A20A	09/27/2016 19:53	Brett W Kenyon	10
01146	GC VOA Water Prep	SW-846 5030B	1	16271A20A	09/27/2016 19:53	Brett W Kenyon	10
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTPH-Dx modified	1	162740020A	10/04/2016 22:12	Amy Lehr	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTPH-Dx 06/97	1	162740020A	10/01/2016 10:00	Ryan J Dowdy	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-3 Grab Water
WA-5544 COC: R215949
19918 68th Ave South - Kent, WA

LL Sample # WW 8601785
LL Group # 1711302
Account # 13255

Project Name: WA-5544

Collected: 09/19/2016 18:00 by AP

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 09/21/2016 09:30

Reported: 10/19/2016 09:15

68KM3

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles SW-846 8260B ug/l						
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC/MS Semivolatiles SW-846 8270C SIM ug/l						
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.051	1
08357	Chrysene	218-01-9	N.D.	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.051	1
The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.						
GC Volatiles ECY 97-602 NWTPH-Gx ug/l						
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	250	1
GC Petroleum ECY 97-602 NWTPH-Dx ug/l						
Hydrocarbons modified						
12899	DX DRO C12-C24	n.a.	N.D.	48	110	1
12899	DX HRO C24-C40	n.a.	N.D.	110	260	1

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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	4162741AA	09/30/2016 14:12	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4162741AA	09/30/2016 14:12	Linda C Pape	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16268WAD026	09/26/2016 14:34	Catherine E Bachman	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16268WAD026	09/25/2016 09:45	Nicholas W Shroyer	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-3 Grab Water
WA-5544 COC: R215949
19918 68th Ave South - Kent, WA

LL Sample # WW 8601785
LL Group # 1711302
Account # 13255

Project Name: WA-5544

Collected: 09/19/2016 18:00 by AP

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/21/2016 09:30

630 Plaza Drive

Reported: 10/19/2016 09:15

Highlands Ranch CO 80129

68KM3

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16271A20A	09/27/2016 16:40	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	16271A20A	09/27/2016 16:40	Brett W Kenyon	1
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTPH-Dx modified	1	162740020A	10/04/2016 22:35	Amy Lehr	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTPH-Dx 06/97	1	162740020A	10/01/2016 10:00	Ryan J Dowdy	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-5 Grab Water
WA-5544 COC: R215949
19918 68th Ave South - Kent, WA

LL Sample # WW 8601786
LL Group # 1711302
Account # 13255

Project Name: WA-5544

Collected: 09/19/2016 14:50 by AP

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 09/21/2016 09:30

Reported: 10/19/2016 09:15

68KM5

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles SW-846 8260B ug/l						
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	1.5	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC/MS Semivolatiles SW-846 8270C SIM ug/l						
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.051	1
08357	Chrysene	218-01-9	N.D.	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.051	1
The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.						
GC Volatiles ECY 97-602 NWTPH-Gx ug/l						
08273	NWTPH-Gx water C7-C12	n.a.	750	50	250	1
GC Petroleum ECY 97-602 NWTPH-Dx ug/l						
Hydrocarbons modified						
12899	DX DRO C12-C24	n.a.	2,300	48	110	1
12899	DX HRO C24-C40	n.a.	N.D.	110	270	1

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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	4162741AA	09/30/2016 14:35	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4162741AA	09/30/2016 14:35	Linda C Pape	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16268WAD026	09/26/2016 15:03	Catherine E Bachman	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16268WAD026	09/25/2016 09:45	Nicholas W Shroyer	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-5 Grab Water
WA-5544 COC: R215949
19918 68th Ave South - Kent, WA

LL Sample # WW 8601786
LL Group # 1711302
Account # 13255

Project Name: WA-5544

Collected: 09/19/2016 14:50 by AP

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 09/21/2016 09:30

Reported: 10/19/2016 09:15

68KM5

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16271A20A	09/27/2016 17:08	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	16271A20A	09/27/2016 17:08	Brett W Kenyon	1
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTPH-Dx modified	1	162740020A	10/04/2016 22:58	Amy Lehr	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTPH-Dx 06/97	1	162740020A	10/01/2016 10:00	Ryan J Dowdy	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-6 Grab Water
WA-5544 COC: R215949
19918 68th Ave South - Kent, WA

LL Sample # WW 8601787
LL Group # 1711302
Account # 13255

Project Name: WA-5544

Collected: 09/19/2016 16:45 by AP

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 09/21/2016 09:30

Reported: 10/19/2016 09:15

68KM6

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/l	ug/l	ug/l	
10335	Benzene	71-43-2	3.7	0.50	1.0	1
10335	Ethylbenzene	100-41-4	65	0.50	1.0	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	1.5	0.50	1.0	1
10335	Toluene	108-88-3	3.6	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	300	0.50	1.0	1

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C SIM	ug/l	ug/l	ug/l	
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.051	1
08357	Chrysene	218-01-9	0.015 J	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.051	1

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:

The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC	Volatiles	ECY 97-602 NWT PH-Gx	ug/l	ug/l	ug/l	
08273	NWT PH-Gx water C7-C12	n.a.	11,000	250	1,300	5

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC	Petroleum Hydrocarbons	ECY 97-602 NWT PH-Dx modified	ug/l	ug/l	ug/l	
12899	DX DRO C12-C24	n.a.	510	47	110	1
12899	DX HRO C24-C40	n.a.	N.D.	110	260	1

The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken:

The sample was re-extracted outside of the method required holding time, and surrogate recoveries are within the QC acceptance limits. Since the hold time had expired prior to the second extraction all results are reported from the original extract. Similar results were obtained in both extracts.

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.

*=This limit was used in the evaluation of the final result

Sample Description: MW-6 Grab Water
WA-5544 COC: R215949
19918 68th Ave South - Kent, WA

LL Sample # WW 8601787
LL Group # 1711302
Account # 13255

Project Name: WA-5544

Collected: 09/19/2016 16:45 by AP

Atlantic Richfield c/o ARCADIS
Suite 600

Submitted: 09/21/2016 09:30

630 Plaza Drive

Reported: 10/19/2016 09:15

Highlands Ranch CO 80129

68KM6

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	4162741AA	09/30/2016 14:57	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4162741AA	09/30/2016 14:57	Linda C Pape	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16268WAD026	09/26/2016 15:31	Catherine E Bachman	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16268WAD026	09/25/2016 09:45	Nicholas W Shroyer	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16271A20A	09/27/2016 20:21	Brett W Kenyon	5
01146	GC VOA Water Prep	SW-846 5030B	1	16271A20A	09/27/2016 20:21	Brett W Kenyon	5
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTPH-Dx modified	1	162740020A	10/04/2016 23:21	Amy Lehr	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTPH-Dx 06/97	1	162740020A	10/01/2016 10:00	Ryan J Dowdy	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-9 Grab Water
WA-5544 COC: R215949
19918 68th Ave South - Kent, WA

LL Sample # WW 8601788
LL Group # 1711302
Account # 13255

Project Name: WA-5544

Collected: 09/19/2016 13:40 by AP

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 09/21/2016 09:30

Reported: 10/19/2016 09:15

68KM9

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles SW-846 8260B ug/l						
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC/MS Semivolatiles SW-846 8270C SIM ug/l						
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.051	1
08357	Chrysene	218-01-9	N.D.	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.051	1
The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.						
GC Volatiles ECY 97-602 NWTPH-Gx ug/l						
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	250	1
GC Petroleum ECY 97-602 NWTPH-Dx ug/l						
Hydrocarbons modified						
12899	DX DRO C12-C24	n.a.	N.D.	47	110	1
12899	DX HRO C24-C40	n.a.	N.D.	110	260	1

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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	4162741AA	09/30/2016 15:20	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4162741AA	09/30/2016 15:20	Linda C Pape	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16268WAD026	09/26/2016 15:59	Catherine E Bachman	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16268WAD026	09/25/2016 09:45	Nicholas W Shroyer	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-9 Grab Water
WA-5544 COC: R215949
19918 68th Ave South - Kent, WA

LL Sample # WW 8601788
LL Group # 1711302
Account # 13255

Project Name: WA-5544

Collected: 09/19/2016 13:40 by AP

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 09/21/2016 09:30

Reported: 10/19/2016 09:15

68KM9

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16271A20A	09/27/2016 17:35	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	16271A20A	09/27/2016 17:35	Brett W Kenyon	1
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTPH-Dx modified	1	162740020A	10/04/2016 23:44	Amy Lehr	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTPH-Dx 06/97	1	162740020A	10/01/2016 10:00	Ryan J Dowdy	1

*=This limit was used in the evaluation of the final result

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Sample Description: MW-10 Grab Water
WA-5544 COC: R215949
19918 68th Ave South - Kent, WA

LL Sample # WW 8601789
LL Group # 1711302
Account # 13255

Project Name: WA-5544

Collected: 09/19/2016 18:35 by AP

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 09/21/2016 09:30

Reported: 10/19/2016 09:15

68K10

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles SW-846 8260B ug/l						
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC/MS Semivolatiles SW-846 8270C SIM ug/l						
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.050	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.050	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.050	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.050	1
08357	Chrysene	218-01-9	N.D.	0.010	0.050	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.050	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.050	1
The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.						
GC Volatiles ECY 97-602 NWTPH-Gx ug/l						
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	250	1
GC Petroleum ECY 97-602 NWTPH-Dx ug/l						
Hydrocarbons modified						
12899	DX DRO C12-C24	n.a.	N.D.	49	110	1
12899	DX HRO C24-C40	n.a.	N.D.	110	270	1

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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	4162741AA	09/30/2016 15:42	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4162741AA	09/30/2016 15:42	Linda C Pape	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16268WAD026	09/26/2016 16:26	Catherine E Bachman	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16268WAD026	09/25/2016 09:45	Nicholas W Shroyer	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-10 Grab Water
 WA-5544 COC: R215949
 19918 68th Ave South - Kent, WA

LL Sample # WW 8601789
 LL Group # 1711302
 Account # 13255

Project Name: WA-5544

Collected: 09/19/2016 18:35 by AP

Atlantic Richfield c/o ARCADIS
 Suite 600
 630 Plaza Drive
 Highlands Ranch CO 80129

Submitted: 09/21/2016 09:30

Reported: 10/19/2016 09:15

68K10

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16271A20A	09/27/2016 18:03	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	16271A20A	09/27/2016 18:03	Brett W Kenyon	1
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTPH-Dx modified	1	162740020A	10/05/2016 01:16	Amy Lehr	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTPH-Dx 06/97	1	162740020A	10/01/2016 10:00	Ryan J Dowdy	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-11 Grab Water
WA-5544 COC: R215949
19918 68th Ave South - Kent, WA

LL Sample # WW 8601790
LL Group # 1711302
Account # 13255

Project Name: WA-5544

Collected: 09/19/2016 14:15 by AP

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 09/21/2016 09:30

Reported: 10/19/2016 09:15

68K11

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles SW-846 8260B ug/l						
10335	Benzene	71-43-2	N.D.	0.50	1.0	1
10335	Ethylbenzene	100-41-4	N.D.	0.50	1.0	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	N.D.	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	N.D.	0.50	1.0	1
GC/MS Semivolatiles SW-846 8270C SIM ug/l						
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.051	1
08357	Chrysene	218-01-9	N.D.	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.051	1
The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.						
GC Volatiles ECY 97-602 NWT PH-Gx ug/l						
08273	NWT PH-Gx water C7-C12	n.a.	N.D.	50	250	1
GC Petroleum ECY 97-602 NWT PH-Dx ug/l						
Hydrocarbons modified						
12899	DX DRO C12-C24	n.a.	N.D.	47	110	1
12899	DX HRO C24-C40	n.a.	N.D.	110	260	1

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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	4162741AA	09/30/2016 16:05	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4162741AA	09/30/2016 16:05	Linda C Pape	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16268WAD026	09/26/2016 16:54	Catherine E Bachman	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16268WAD026	09/25/2016 09:45	Nicholas W Shroyer	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-11 Grab Water
WA-5544 COC: R215949
19918 68th Ave South - Kent, WA

LL Sample # WW 8601790
LL Group # 1711302
Account # 13255

Project Name: WA-5544

Collected: 09/19/2016 14:15 by AP

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 09/21/2016 09:30

Reported: 10/19/2016 09:15

68K11

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16271A20A	09/27/2016 18:31	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	16271A20A	09/27/2016 18:31	Brett W Kenyon	1
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTPH-Dx modified	1	162740020A	10/05/2016 01:39	Amy Lehr	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTPH-Dx 06/97	1	162740020A	10/01/2016 10:00	Ryan J Dowdy	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-12 Grab Water
WA-5544 COC: R215949
19918 68th Ave South - Kent, WA

LL Sample # WW 8601791
LL Group # 1711302
Account # 13255

Project Name: WA-5544

Collected: 09/19/2016 15:25 by AP

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 09/21/2016 09:30

Reported: 10/19/2016 09:15

68K12

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles SW-846 8260B ug/l						
10335	Benzene	71-43-2	12	0.50	1.0	1
10335	Ethylbenzene	100-41-4	240	0.50	1.0	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	0.93 J	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	54	0.50	1.0	1
GC/MS Semivolatiles SW-846 8270C SIM ug/l						
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.051	1
08357	Chrysene	218-01-9	N.D.	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.051	1
The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.						
GC Volatiles ECY 97-602 NWTPH-Gx ug/l						
08273	NWTPH-Gx water C7-C12	n.a.	1,900	50	250	1
GC Petroleum ECY 97-602 NWTPH-Dx ug/l						
Hydrocarbons modified						
12899	DX DRO C12-C24	n.a.	1,200	48	110	1
12899	DX HRO C24-C40	n.a.	N.D.	110	270	1

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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	4162741AA	09/30/2016 16:27	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4162741AA	09/30/2016 16:27	Linda C Pape	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16268WAD026	09/26/2016 17:22	Catherine E Bachman	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16268WAD026	09/25/2016 09:45	Nicholas W Shroyer	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-12 Grab Water
WA-5544 COC: R215949
19918 68th Ave South - Kent, WA

LL Sample # WW 8601791
LL Group # 1711302
Account # 13255

Project Name: WA-5544

Collected: 09/19/2016 15:25 by AP

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 09/21/2016 09:30

Reported: 10/19/2016 09:15

68K12

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16271A20A	09/27/2016 18:58	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	16271A20A	09/27/2016 18:58	Brett W Kenyon	1
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTPH-Dx modified	1	162740020A	10/05/2016 02:01	Amy Lehr	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTPH-Dx 06/97	1	162740020A	10/01/2016 10:00	Ryan J Dowdy	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-13 Grab Water
WA-5544 COC: R215949
19918 68th Ave South - Kent, WA

LL Sample # WW 8601792
LL Group # 1711302
Account # 13255

Project Name: WA-5544

Collected: 09/19/2016 16:00 by AP

Atlantic Richfield c/o ARCADIS
Suite 600
630 Plaza Drive
Highlands Ranch CO 80129

Submitted: 09/21/2016 09:30

Reported: 10/19/2016 09:15

68K13

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles SW-846 8260B ug/l						
10335	Benzene	71-43-2	2.3	0.50	1.0	1
10335	Ethylbenzene	100-41-4	110	0.50	1.0	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	3.3	0.50	1.0	1
10335	Toluene	108-88-3	1.4	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	290	0.50	1.0	1
GC/MS Semivolatiles SW-846 8270C SIM ug/l						
08357	Benzo(a)anthracene	56-55-3	N.D.	0.010	0.051	1
08357	Benzo(a)pyrene	50-32-8	N.D.	0.010	0.051	1
08357	Benzo(b)fluoranthene	205-99-2	N.D.	0.010	0.051	1
08357	Benzo(k)fluoranthene	207-08-9	N.D.	0.010	0.051	1
08357	Chrysene	218-01-9	N.D.	0.010	0.051	1
08357	Dibenz(a,h)anthracene	53-70-3	N.D.	0.010	0.051	1
08357	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.010	0.051	1
The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following corrective action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. All results are reported from the first trial. Similar results were obtained in both trials.						
GC Volatiles ECY 97-602 NWTPH-Gx ug/l						
08273	NWTPH-Gx water C7-C12	n.a.	6,000	500	2,500	10
GC Petroleum ECY 97-602 NWTPH-Dx ug/l						
Hydrocarbons modified						
12899	DX DRO C12-C24	n.a.	690	47	100	1
12899	DX HRO C24-C40	n.a.	N.D.	100	260	1

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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	4162741AA	09/30/2016 16:50	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4162741AA	09/30/2016 16:50	Linda C Pape	1
08357	PAHs in waters by SIM	SW-846 8270C SIM	1	16268WAD026	09/26/2016 17:51	Catherine E Bachman	1
10470	BNA Water Extraction (SIM)	SW-846 3510C	1	16268WAD026	09/25/2016 09:45	Nicholas W Shroyer	1

*=This limit was used in the evaluation of the final result

Sample Description: MW-13 Grab Water
WA-5544 COC: R215949
19918 68th Ave South - Kent, WA

LL Sample # WW 8601792
LL Group # 1711302
Account # 13255

Project Name: WA-5544

Collected: 09/19/2016 16:00 by AP

Atlantic Richfield c/o ARCADIS

Suite 600

Submitted: 09/21/2016 09:30

630 Plaza Drive

Reported: 10/19/2016 09:15

Highlands Ranch CO 80129

68K13

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16271A20A	09/27/2016 20:49	Brett W Kenyon	10
01146	GC VOA Water Prep	SW-846 5030B	1	16271A20A	09/27/2016 20:49	Brett W Kenyon	10
12899	DRO/DX Mini-extraction Master	ECY 97-602 NWTPH-Dx modified	1	162740020A	10/05/2016 02:24	Amy Lehr	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTPH-Dx 06/97	1	162740020A	10/01/2016 10:00	Ryan J Dowdy	1

*=This limit was used in the evaluation of the final result

Sample Description: DUP-1 Grab Water
WA-5544 COC: R215949
19918 68th Ave South - Kent, WA

LL Sample # WW 8601793
LL Group # 1711302
Account # 13255

Project Name: WA-5544

Collected: 09/19/2016 by AP

Atlantic Richfield c/o ARCADIS

Submitted: 09/21/2016 09:30

Suite 600

Reported: 10/19/2016 09:15

630 Plaza Drive

Highlands Ranch CO 80129

68KD1

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles SW-846 8260B						
10335	Benzene	71-43-2	5.1	ug/l 0.50	ug/l 1.0	1
10335	Ethylbenzene	100-41-4	400	5.0	10	10
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.50	1.0	1
10335	Toluene	108-88-3	1.6	0.50	1.0	1
10335	Xylene (Total)	1330-20-7	190	0.50	1.0	1
GC Volatiles ECY 97-602 NWTPH-Gx						
08273	NWTPH-Gx water C7-C12	n.a.	7,600	ug/l 500	ug/l 2,500	10

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
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	4162741AA	09/30/2016 17:12	Linda C Pape	1
10335	VOCs 8260 BTEX/MTBE	SW-846 8260B	1	4162741AA	09/30/2016 17:35	Linda C Pape	10
01163	GC/MS VOA Water Prep	SW-846 5030B	1	4162741AA	09/30/2016 17:12	Linda C Pape	1
01163	GC/MS VOA Water Prep	SW-846 5030B	2	4162741AA	09/30/2016 17:35	Linda C Pape	10
08273	NWTPH-Gx water C7-C12	ECY 97-602	1	16274C20A	09/30/2016 12:31	Marie D	10
		NWTPH-Gx				Beamenderfer	
01146	GC VOA Water Prep	SW-846 5030B	1	16274C20A	09/30/2016 12:31	Marie D	10
						Beamenderfer	

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS
Reported: 10/19/2016 09:15

Group Number: 1711302

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.

Method Blank

Analysis Name	Result	MDL**	LOQ
	ug/l	ug/l	ug/l
Batch number: 4162741AA	Sample number(s): 8601784-8601793		
Benzene	N.D.	0.50	1.0
Ethylbenzene	N.D.	0.50	1.0
Methyl Tertiary Butyl Ether	N.D.	0.50	1.0
Toluene	N.D.	0.50	1.0
Xylene (Total)	N.D.	0.50	1.0
Batch number: 4162742AA	Sample number(s): 8601784		
Ethylbenzene	N.D.	0.50	1.0
Batch number: 16268WAD026	Sample number(s): 8601784-8601792		
Benzo(a)anthracene	N.D.	0.010	0.050
Benzo(a)pyrene	N.D.	0.010	0.050
Benzo(b)fluoranthene	N.D.	0.010	0.050
Benzo(k)fluoranthene	N.D.	0.010	0.050
Chrysene	N.D.	0.010	0.050
Dibenz(a,h)anthracene	N.D.	0.010	0.050
Indeno(1,2,3-cd)pyrene	N.D.	0.010	0.050
Batch number: 16271A20A	Sample number(s): 8601784-8601792		
NWTPH-Gx water C7-C12	N.D.	50	250
Batch number: 16274C20A	Sample number(s): 8601793		
NWTPH-Gx water C7-C12	N.D.	50	250
Batch number: 162740020A	Sample number(s): 8601784-8601792		
DX DRO C12-C24	N.D.	45	100
DX HRO C24-C40	N.D.	100	250

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	ug/l	ug/l	ug/l	ug/l					
Batch number: 4162741AA	Sample number(s): 8601784-8601793								
Benzene	20	21.48	20	21.52	107	108	78-120	0	30
Ethylbenzene	20	21.25	20	20.9	106	105	78-120	2	30
Methyl Tertiary Butyl Ether	20	18.31	20	18.35	92	92	75-120	0	30
Toluene	20	21.87	20	21.52	109	108	80-120	2	30
Xylene (Total)	60	64.26	60	63.52	107	106	80-120	1	30
Batch number: 4162742AA	Sample number(s): 8601784								
Ethylbenzene	20	21.38			107		78-120		

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS
Reported: 10/19/2016 09:15

Group Number: 1711302

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 16268WAD026	Sample number(s): 8601784-8601792								
Benzo(a)anthracene	1.00	0.875	1.00	0.864	87	86	66-111	1	30
Benzo(a)pyrene	1.00	0.801	1.00	0.805	80	80	66-111	0	30
Benzo(b)fluoranthene	1.00	0.871	1.00	0.871	87	87	69-117	0	30
Benzo(k)fluoranthene	1.00	0.774	1.00	0.765	77	77	65-111	1	30
Chrysene	1.00	0.825	1.00	0.802	82	80	66-105	3	30
Dibenz(a,h)anthracene	1.00	0.466	1.00	0.446	47*	45*	52-122	4	30
Indeno(1,2,3-cd)pyrene	1.00	0.545	1.00	0.535	54*	53*	55-115	2	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 16271A20A	Sample number(s): 8601784-8601792								
NWTPH-Gx water C7-C12	1100	1091.5	1100	1113.34	99	101	79-120	2	30
Batch number: 16274C20A	Sample number(s): 8601793								
NWTPH-Gx water C7-C12	1100	1040.81	1100	1034.69	95	94	79-120	1	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 162740020A	Sample number(s): 8601784-8601792								
DX DRO C12-C24	600	359.88	600	381.11	60	64	32-115	6	20

MS/MSD

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

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 4162742AA	Sample number(s): 8601784 UNSPK: P600374									
Ethylbenzene	N.D.	20	21.81	20	22.06	109	110	78-120	1	30

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: VOCs 8260 BTEX/MTBE
Batch number: 4162741AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8601784	100	103	98	98
8601785	100	103	99	94
8601786	99	103	99	96
8601787	98	102	99	99

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS
Reported: 10/19/2016 09:15

Group Number: 1711302

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.

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8601788	99	102	99	95
8601789	99	104	99	95
8601790	100	103	99	93
8601791	100	103	99	100
8601792	98	103	99	99
8601793	97	104	98	98
Blank	98	102	100	95
LCS	98	102	99	100
LCSD	97	103	99	99
Limits:	80-116	77-113	80-113	78-113

Analysis Name: PAHs in waters by SIM
Batch number: 16268WAD026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
8601784	67	65	110
8601785	91	80	88
8601786	71	78	86
8601787	92	72	81
8601788	90	70	84
8601789	93	77	90
8601790	88	61	85
8601791	71	76	72
8601792	76	72	84
Blank	93	82	90
LCS	90	79	89
LCSD	91	79	91
Limits:	51-128	34-130	45-119

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 16271A20A

	Trifluorotoluene-F
8601784	86
8601785	89
8601786	90
8601787	81
8601788	87
8601789	83
8601790	86
8601791	89
8601792	87
Blank	88
LCS	80
LCSD	85
Limits:	63-135

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 16274C20A

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

- (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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Atlantic Richfield c/o ARCADIS
Reported: 10/19/2016 09:15

Group Number: 1711302

Surrogate Quality Control (continued)

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

Trifluorotoluene-F	
8601793	89
Blank	89
LCS	101
LCSD	100
Limits: 63-135	

Analysis Name: DRO/DX Mini-extraction Master
Batch number: 162740020A

Orthoterphenyl	
8601784	83
8601785	99
8601786	72
8601787	39*
8601788	125
8601789	101
8601790	100
8601791	80
8601792	105
Blank	103
LCS	100
LCSD	106
Limits: 50-150	

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.



13255 (1711302) 8601784-94

Laboratory Management Program LaMP Chain of Custody Record

R215949

Page ____ of ____

BP Site Node Path: _____

Req Due Date (mm/dd/yy): STAT

Rush TAT: Yes ___ No X

BP Facility No: 5544

Lab Work Order Number: _____

Lab Name: <u>Eurofins Lancaster Labz Env.</u>	Facility Address: <u>19918 68th Ave. South</u>	Consultant/Contractor: <u>Arcadis</u>
Lab Address: <u>2425 New Holland Pike Lancaster, PA, 17601</u>	City, State, ZIP Code: <u>Kent, WA</u>	Consultant/Contractor Project No: <u>GPO9BPNA.WA.39</u>
Lab PM: <u>Stacy Hess</u>	Lead Regulatory Agency: <u>Ecology</u>	Address: <u>1100 Olive Way, Suite 800, Seattle, WA 98101</u>
Lab Phone: <u>717-656-2300</u>	California Global ID No.: _____	Consultant/Contractor PM: <u>Brian Marcum</u>
Lab Shipping Acct: _____	Enfos Proposal No: _____	Phone: <u>503-220-8201</u> Email: <u>brian.marcum@arcadis.com</u>
Lab Bottle Order No: _____	Accounting Mode: Provision ___ OOC-BU ___ OOC-RM ___	Email EDD To: <u>brian.marcum@arcadis.com</u> and <u>lab.enfosdoc@bp.com</u>
Other Info: _____	Stage: _____ Activity: _____	Invoice To: BP ___ Contractor <u>X</u>

BP Project Manager (PM):				Matrix		No. Containers / Preservative						Requested Analyses						Report Type & QC Level			
BP PM Phone:				Soil / Solid	Water / Liquid	Air / Vapor	Is this location a well?	Total Number of Container:	Unpreserved	H2SO4	HNO3	HCl	Methanol	GRO by MWTPH-6	DRO/HCl by MWTPH-D6	BTEX/MTBE by 82008	CPAHs by 82702 SIM	Standard <u>X</u>		Full Data Package ___	
BP PM Email:																		Comments			
Lab No.	Sample Description	Date	Time																		
	MW-2	9/19/16	1720	X	Y	10	2				8		X	X	X	X					
	MW-3		1800	X	Y	10	2				8		X	X	X	X					
	MW-5		1450	X	Y	10	2				8		X	X	X	X					
	MW-6		1645	X	Y	10	2				8		X	X	X	X					
	MW-9		1340	X	Y	10	2				8		X	X	X	X					
	MW-10		1835	X	Y	10	2				8		X	X	X	X					
	MW-11		1415	X	Y	10	2				8		X	X	X	X					
	MW-12		1525	X	Y	10	2				8		X	X	X	X					
	MW-13		1600	X	Y	10	2				8		X	X	X	X					
	DVP-1		—	X	Y	6					6		X	X	X	X				2 Trip Blank VOAs included	

Sampler's Name: <u>Alex Pink</u>	Relinquished By / Affiliation: <u>Ross Laboratories / Arcadis</u>	Date: <u>9/20/16</u>	Time: <u>11:50</u>	Accepted By / Affiliation: <u>V. White / BUE</u>	Date: <u>9/20/16</u>	Time: <u>11:56</u>
Sampler's Company: <u>Arcadis</u>	Shipment Method: _____ Ship Date: _____		Shipment Tracking No: _____		Signature: <u>[Signature]</u> / ELLE	

Special Instructions: questions or concerns call Alex Pink - 906-440-8394

Client: BP

Delivery and Receipt Information

Delivery Method: Fed Ex Arrival Timestamp: 09/21/2016 9:30
 Number of Packages: 2 Number of Projects: 1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	2
Paperwork Enclosed:	Yes	Trip Blank Type:	HCL
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Timothy Cubberley (6520) at 11:48 on 09/21/2016

Samples Chilled Details

Thermometer Types: *DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.*

<u>Cooler #</u>	<u>Thermometer ID</u>	<u>Corrected Temp</u>	<u>Therm. Type</u>	<u>Ice Type</u>	<u>Ice Present?</u>	<u>Ice Container</u>	<u>Elevated Temp?</u>
1	DT131	1.7	DT	Wet	Y	Bagged	N
2	DT131	3.1	DT	Wet	Y	Bagged	N

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, and ISO 17025) 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.

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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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A decorative graphic consisting of three thin orange lines. One is a horizontal line extending across the width of the page. Two others are parallel diagonal lines sloping upwards from left to right, intersecting the horizontal line.