ARCADIS Design & Consultancy for natural and built assets

Chevron Environmental Management Company

PROGRESS REPORT NO. 130
FIRST SEMI-ANNUAL 2021

Former Unocal Seattle

Marketing Terminal 0724

3001 Elliott Avenue

Seattle, Washington

29 September 2021

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FIRST SEMI-ANNUAL 2021

Former Unocal Seattle Marketing Terminal 0724

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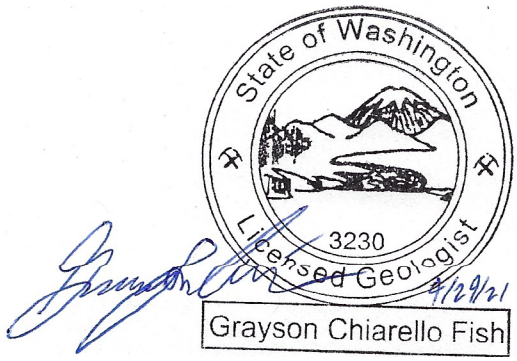

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1 INTRODUCTION

On behalf of Chevron Environmental Management Company (Chevron), Arcadis U.S., Inc. (Arcadis) has prepared this report to document the first semi-annual 2021 groundwater sampling results for the former Seattle Marketing Terminal (Unocal 0724) located at 3001 Elliott Avenue in Seattle, Washington (site). A site location map is included as Figure 1. This report summarizes the results of the groundwater gauging and sampling events conducted on March 15-16, and June 7-9, 2021 by Arcadis.

The site is formally known as Unocal Seattle Marketing Terminal in Ecology's database. Identifiers are:

- Facility Site Identification Number (FSID): 2208
- Cleanup Site Identification Number (CSID): 1428

Chevron is conducting cleanup of the site as required by the Washington State Department of Ecology (Ecology) pursuant to Order on Consent DE88-N223 and Amendments 1 through 5. Order on Consent DE88-N223 and its amendments require quarterly/semi-annual groundwater monitoring and quarterly light non-aqueous phase liquid (LNAPL) monitoring. The site is defined in Order on Consent DE88-N223 and is divided into four contiguous areas: Upper Yard, Elliott Avenue, Lower Yard and the Offsite Area. The Upper Yard consists of the approximate area between Elliott Avenue and Western Avenue to the east and west, and Bay Street and Broad Street to the north and south. The Elliott Avenue area includes the length of Elliott Avenue between Bay Street and Broad Street. The Lower Yard consists of the area between Elliott Avenue and the Burlington Northern Santa Fe (BNSF) railroad tracks to the east and west, and Bay Street and Broad Street to the north and south. The Offsite Area generally comprises the BNSF railroad tracks right-of-way and Alaskan Way between Bay Street and Broad Street. A site map is included as Figure 2.

Site history, historical LNAPL monitoring, and historical remedial activities are summarized in Appendix A. Monitoring well history is summarized in Table 1.

2 GROUNDWATER MONITORING

2.1 Methodology

During both quarters, gauging activities were conducted to ensure that groundwater levels were within the monitoring well screen intervals. Gauging activities were conducted using an oil/water interface probe to determine depth to water and LNAPL thickness. Groundwater elevation data are summarized in Table 2. Groundwater elevations are shown on Figures 3a and 3b.

During both quarters, monitoring wells were purged and sampled with a peristaltic pump in general accordance with the procedures outlined in *Low-Flow Groundwater Purging and Sampling Procedures for Monitoring Wells* (Arcadis, 2009). This standard operating procedure (SOP) is included in Appendix B. Note that at the request of site stakeholders, tubing placement deviated from specifications in the SOP; tubing was placed within 6-inches of the groundwater surface in each monitoring well. Groundwater levels were conducted from each well prior to purging to assure the tubing was placed correctly. New, disposable polyethylene tubing was used for sampling. Water quality parameters including temperature, pH, electrical conductivity, dissolved oxygen oxidation/reduction potential, and turbidity were measured approximately every three minutes using an In-Situ® Aqua Troll 600 low-flow groundwater sampling system and were recorded on the field data sheets included in Appendix C.

Samples were collected in clean, laboratory-supplied containers with appropriate preservatives and were stored in iced coolers. Samples were then shipped via overnight delivery, under chain-of-custody procedures, to Eurofins Lancaster Laboratories in Lancaster, Pennsylvania. Groundwater samples were analyzed for the following:

- Total petroleum hydrocarbons as gasoline (TPH-G) by Northwest Method NWTPH-Gx;
- Total petroleum hydrocarbons as diesel and heavy oil (TPH-D and TPH-O) by Northwest Method NWTPH-Dx with silica gel cleanup;
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) by United States Environmental Protection Agency (USEPA) Method 8260D/UST; and
- Benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, indeno(1,2,3-c,d)pyrene collectively referred to as carcinogenic polycyclic aromatic hydrocarbons (cPAHs) by USEPA Method 8270D SIM.

Analytical results are summarized in Table 3. Analytical results for TPH-G, TPH-D, TPH-O, and BTEX, are summarized on Figure 4a. Analytical results for cPAH are summarized on Figure 4b. The laboratory report and chains of custody are provided in Appendix D.

2.2 First Quarter 2021 Groundwater Monitoring

On March 15 and 16, 2021, Arcadis conducted a groundwater gauging and sampling event at the site.

On March 15, 2021, Arcadis gauged monitoring wells MW-61A-R, MW-70R, MW-200 through MW-207, and MW-209 through MW-211 according to the methodology described in Section 2.1. Monitoring well MW-30 could not be gauged due to the presence of viscous substance, suspected to be LNAPL,

interfering with the oil/water interface probe. No measurable LNAPL thickness was observed during this event.

Depths to groundwater measured during the first quarter 2021 groundwater monitoring event ranged from 8.81 feet below top of casing (btoc) in monitoring well MW-210 to 22.67 feet btoc in monitoring well MW-205. Groundwater levels during the first quarter 2021 gauging event were within screened intervals for all wells gauged. Groundwater elevations ranged from 3.09 feet above mean sea level (amsl) in monitoring well MW-206 to 9.56 feet amsl in monitoring well MW-61A-R. These measurements indicate groundwater is generally flowing in a southwesterly direction, towards Elliott Bay, and is consistent with historical data.

On March 15 and 16, 2021, monitoring wells MW-70R, MW-209, MW-210 and MW-211 were sampled according to the methodology described in Section 2.1. Groundwater levels during the first quarter 2021 sampling event were within screened intervals for all wells sampled.

Groundwater analytical results for the first quarter 2021 event indicate that no exceedances of the applicable BTEX, TPH-G, TPH-D, TPH-O and cPAHs remedial action levels (RALs) were detected.

2.3 Second Quarter 2021 Groundwater Monitoring

On June 7-9, 2021, Arcadis conducted a groundwater gauging and sampling event at the site.

On June 9, 2021, Arcadis gauged monitoring wells MW-30, MW-61A-R, MW-70R, MW-200 through MW-207, and MW-209 through MW-211 according to the methodology described in Section 2.1. No measurable LNAPL thickness was observed during this event. A sheen was observed on monitoring wells MW-30 and MW-61A-R.

Depths to groundwater measured during the second quarter 2021 groundwater monitoring event ranged from 9.05 feet btoc in monitoring well MW-201 to 23.23 feet btoc in monitoring well MW-205. Groundwater elevations ranged from 2.21 feet amsl in monitoring well MW-206 to 7.74 feet amsl in monitoring well MW-61A-R. Groundwater levels during the second quarter 2021 gauging event were within screened intervals for all wells gauged.

On June 7-9, 2021, monitoring wells MW-70R, MW-200 through MW-207, and MW-209 through MW-211 were sampled according to the methodology described in Section 2.1. Groundwater levels during the second quarter 2021 sampling event were within screened intervals for all wells sampled.

Groundwater analytical results for the second quarter 2021 event indicate that no exceedances of the applicable BTEX, TPH-D, TPH-O or cPAHs RALs were detected in the samples collected from any of the monitoring wells.

2.4 Laboratory Data Verification Results

A trip blank sample for BTEX and TPH-G analysis was submitted with the groundwater samples for the first quarter 2021 and second quarter 2021 sampling events. Analyte concentrations did not exceed their respective method detection limits (MDLs) in the trip blanks.

During the first quarter and second quarter 2021 sampling events, a duplicate sample was collected from monitoring well MW-70R for quality assurance purposes. The duplicate sample was submitted for the same

analyses as the parent sample. The duplicate analytical results were comparable to the parent sample analytical results for both quarters.

All coolers were received in good condition within temperature requirements.

2.5 Groundwater Monitoring Compliance Summary

Historical trend graphs for MW-30, MW-70R, MW-200 through MW-207, and MW-209 through MW-211 are provided in Appendix F. Historical analytical results are presented in Appendix E.

As of the June 2021 event, eight monitoring wells (MW-70R, MW-201, MW-202, MW-203, MW-205, MW-206, MW-207 and MW-211) have met a minimum of eight consecutive sampling events in compliance with the RALs established for the site. A summary of groundwater compliance as of the June 2021 event is included in Table 4.

3 CONCLUSIONS

Gauging and groundwater monitoring were conducted on March 15 to 16, and June 7 to 9, 2021. During the first and second quarters sampling events, there were no exceedances of BTEX, TPH-G, TPH-D, TPH-O, or cPAHs RALs in the samples collected. As of the June 2021 event, eight monitoring wells (MW-70R, MW-201, MW-202, MW-203, MW-205, MW-206, MW-207 and MW-211) have met a minimum of eight consecutive sampling events in compliance with the RALs established for the site. The next groundwater event is planned for third quarter 2021.

TABLES

Table 1

Monitoring Well History
Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well ID	Installation Date	Compliance Parameters	Compliance/Removal Date
Upper Yard			
MW-37	06/1990	**LNAPL-TPH - BTEX (MW-61A-R)**	12/1995
MW-38	06/1990		1992
MW-39	06/1990		1992
MW-40	06/1990		1992
MW-58	09/1995		01/2004
MW-61	1995		1997
MW-61A	01/1998		01/2004
MW-61A-R	**03/2006**		**not sampled**
MW-62	1995		1997
MW-62A	01/1998		01/2004
MW-63	1995		1997
MW-63A	01/1998		01/2004
MW-64	1995		01/2004
Elliott Avenue			
MW-30	**1989**	**LNAPL - TPH - BTEX (MW-30)**	**not sampled**
MW-31	1989		12/2003
MW-32	1989		04/1991
MW-59	03/1998		*no data*
MW-65	03/1998		ABANDONED 12/07
MW-66	03/1998		ABANDONED 12/07
MW-69	*no data*		*no data*
Lower Yard			
MW-1	*no data*	**No wells in Lower Yard currently sampled for compliance parameters**	1998
MW-2	*no data*		1998
MW-18	*no data*		1998
MW-22	*no data*		1998
MW-23	*no data*		1998
MW-33	*no data*		1998
MW-34	*no data*		1998
MW-35	*no data*		1998
MW-49	*no data*		1998
MW-50	*no data*		1998
MW-51	*no data*		1998
MW-53	*no data*		1998
MW-54	*no data*		1998
MW-55	*no data*		1998
MW-56	*no data*		1998
MW-57	*no data*		1998
MW-60	*no data*		1998
MW-81	09/1998		06/2002
MW-82	09/1998		06/2002
MW-83	09/1998		06/2002
MW-84	09/1998		06/2002
MW-85	09/1998		06/2002
MW-86	09/1998		06/2002

Table 1

Monitoring Well History
Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well ID	Installation Date	Compliance Parameters	Compliance/Removal Date
Offsite Area			
MW-8	01/1989	**LNAPL - TPH - BTEX - PAHs (MW-70R)**	10/2005
MW-9	*no data*		07/2005
MW-10	01/1989		10/2005
MW-20	01/1989		10/2005
MW-25	01/1989		10/2005
MW-26	01/1989		10/2005
MW-27	01/1989		damaged 2006
MW-27R	12/2006		ABANDONED 12/07
MW-34	10/1989		*no data*
MW-35	10/1989		*no data*
MW-36	10/1989		07/2005
MW-41	10/1990		12/2002
MW-42	10/1990		12/1991
MW-43	10/1990		12/1991
MW-44	*no data*		*no data*
MW-52	06/1998		10/2005
MW-67	03/1998		10/2005
MW-68	03/1998		07/2005
MW-69	03/1998		*no data*
MW-70	03/1998		10/2005
MW-70R	**09/2016**		**sampled**
MW-71	03/1998		10/2005
MW-72	03/1998		07/2005
MW-76	03/1998		10/2005
Offsite Area- Amendment No. 4 Point of Compliance monitoring wells			
MW-200	**10/2006**	**LNAPL - TPH - BTEX - PAHs (MW-200 to MW-207, MW-209 to MW-11)**	**sampled**
MW-201	**10/2006**		**sampled**
MW-202	**10/2006**		**sampled**
MW-203	**10/2006**		**sampled**
MW-204	**10/2006**		**sampled**
MW-205	**10/2006**		**sampled**
MW-206	**10/2006**		**sampled**
MW-207	**10/2006**		**sampled**
MW-209	**09/2016**		**sampled**
MW-210	**09/2016**		**sampled**
MW-211	**09/2016**		**sampled**

Notes:
LNAPL = Light non-aqueous phase liquid
TPH = Total petroleum hydrocarbons
BTEX = Benzene, Toluene, Ethylbenzene and Xylenes (Total)
PAHs = Polycyclic Aromatic Hydrocarbons
Items in bold represent compliance wells sampled in the most recent sampling event.

Table 2
Summary of Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number	Date	Time (hh:min)	Depth to Groundwater (feet btoc)	Depth to LNAPL (feet btoc)	LNAPL Thickness (feet)	Top of Casing Elevation (feet amsl)	Groundwater Elevation[1] (feet[2])	Top of Screen Elevation[3] (feet[2])
MW-30	03/15/21	13:15	--*	--	--	20.85	--	15.85
MW-30	06/09/21	12:08	14.00	--	LNAPL	20.85	6.85	15.85
MW-61A-R	03/15/21	14:32	12.88	--	--	22.44	9.56	--
MW-61A-R	06/09/21	12:02	14.70	14.70	0.00	22.44	7.74	--
MW-200	03/15/21	13:33	9.06	--	--	14.36	5.30	9.36
MW-200	06/09/21	11:31	9.40	--	--	14.36	4.96	9.36
MW-201	03/15/21	13:37	9.81	--	--	14.86	5.05	9.86
MW-201	06/09/21	11:26	9.05	--	--	14.86	5.81	9.86
MW-202	03/15/21	13:29	9.81	--	--	14.58	4.77	6.78
MW-202	06/09/21	11:21	10.41	--	--	14.58	4.17	6.78
MW-203	03/15/21	13:42	12.83	--	--	17.55	4.72	7.05
MW-203	06/09/21	11:36	13.41	--	--	17.55	4.14	7.05
MW-204	03/15/21	13:49	18.70	--	--	23.93	5.23	6.58
MW-204	06/09/21	11:41	19.26	--	--	23.93	4.67	6.58
MW-205	03/15/21	13:57	22.67	--	--	27.89	5.22	9.89
MW-205	06/09/21	11:49	23.23	--	--	27.89	4.66	9.89
MW-206	03/15/21	13:26	12.06	--	--	15.15	3.09	4.15
MW-206	06/09/21	11:15	12.94	--	--	15.15	2.21	4.15
MW-207	03/15/21	13:18	11.82	--	--	15.40	3.58	5.90
MW-207	06/09/21	11:10	13.03	--	--	15.40	2.37	5.90
MW-209	03/15/21	14:20	9.53	--	--	15.53	6.00	12.53
MW-209	06/09/21	12:43	10.14	--	--	15.53	5.39	12.53
MW-210	03/15/21	14:16	8.81	--	--	15.13	6.32	12.13
MW-210	06/09/21	12:49	9.29	--	--	15.13	5.84	12.13
MW-211	03/15/21	14:14	9.02	--	--	15.02	6.00	12.02
MW-211	06/09/21	12:54	9.66	--	--	15.02	5.36	12.02
MW-70R	03/15/21	13:15	11.56	--	--	15.61	4.05	11.61
MW-70R	06/09/21	12:49	12.49	--	--	15.61	3.12	11.61

Notes:

btoc = below top of casing.

LNAPL = light non-aqueous phase liquid

"--" = not measured or not obtainable

* MW-30 could not be gauged due to the presence of viscous substance, suspected to be LNAPL, interfering with the oil/water interface probe.

[1]If LNAPL is present, groundwater elevation is corrected per the formula: (Top of casing elevation - Depth to Groundwater) + (0.8 x LNAPL thickness)

[2]Elevation referenced to city of Seattle datum.

[3]Top of well screen elevation data from historic records.

Table 3
Summary of Groundwater Analytical Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

		Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Indeno(1,2,3-cd) Pyrene	Gasoline (C7-C12)	Diesel (C12-C24 w/Si Gel)	Heavy Oil (C24-C40 w/Si Gel)	Benzene	Ethylbenzene	Toluene	Xylene (total)
Remedial Action Levels		**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**1**	**10**	**15**	**40**	**1,400**	**14,300**	**4,400**
Location	**Sample Date**	**(µg/L)**	**(µg/L)**	**(µg/L)**	**(µg/L)**	**(µg/L)**	**(µg/L)**	**(µg/L)**	**(mg/L)**	**(mg/L)**	**(mg/L)**	**(µg/L)**	**(µg/L)**	**(µg/L)**	**(µg/L)**
MW-200	06/07/21	<0.010	<0.010	<0.010	<0.010	<0.010	<0.021	<0.021	0.210 J	<0.047	<0.110	<0.30	<0.40	<0.30	<1.4
MW-201	06/08/21	<0.010	<0.010	<0.010	<0.010	<0.010	<0.021	<0.021	0.170 J	<0.047	<0.100	<0.30	<0.40	<0.30	<1.4
MW-202	06/08/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.021	<0.021	0.039 J	<0.048	<0.110	<0.30	<0.40	<0.30	<1.4
MW-203	06/08/21	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	<0.020	0.063 J	<0.046	<0.100	<0.30	<0.40	<0.30	<1.4
MW-204	06/08/21	<0.010	<0.010	<0.010	<0.010	<0.010	<0.021	<0.021	0.900	0.067 J	<0.100	<0.30	<0.40	0.31 J	<1.4
MW-205	06/08/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.022	<0.022	0.093 J	<0.051	<0.110	<0.30	<0.40	<0.30	<1.4
MW-206	06/08/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.022	<0.022	<0.019	<0.045	<0.100	<0.30	<0.40	<0.30	<1.4
MW-207	06/07/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.021	<0.021	<0.019	<0.048	<0.110	<0.30	<0.40	<0.30	<1.4
MW-209	03/15/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.023	<0.023	0.69	0.083 J *1	<0.110	<0.20	<0.40	0.47 J	<1.4
MW-209	06/09/21	<0.010	<0.010	<0.010	<0.010	<0.010	<0.021	<0.021	0.510	<0.048	<0.110	<0.30	<0.40	0.32 J	<1.4
MW-210	03/15/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.023	<0.023	0.038 J	<0.051 *1	<0.110	<0.20	<0.40	<0.20	<1.4
MW-210	06/09/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.021	<0.021	0.045 J	<0.049	<0.110	<0.30	<0.40	<0.30	<1.4
MW-211	03/15/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.022	<0.022	0.055 J	<0.051 *1	<0.110	<0.20	<0.40	<0.20	<1.4
MW-211	06/09/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.021	<0.021	0.052 J	<0.048	<0.110	<0.30	<0.40	<0.30	<1.4
MW-30	06/09/21	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-61 A-R	06/09/21	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-70R	03/16/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.021	<0.021	<0.019	<0.048	<0.110	<0.20	<0.40	<0.20	<1.4
MW-70R (Dup)	03/16/21	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	<0.020	<0.019	<0.048 *1	<0.110	<0.20	<0.40	<0.20	<1.4
MW-70R	06/07/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.022	<0.022	<0.019	<0.049 H	<0.110 H	<0.30	<0.40	<0.30	<1.4
MW-70R (Dup)	06/07/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.023	<0.023	<0.019	<0.049	<0.110	<0.30	<0.40	<0.30	<1.4

Notes:
-- = Not analyzed/ Not Sampled
Highlighted = value exceeds Remedial Action Levels
<0.51 = Not detected at or above the laboratory Method Detection Limit (MDL)
µg/L = Micrograms per liter
mg/L = Miligrams per liter
Dup = duplicate
NE = Not Established
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
* = LCS or LCSD is outside acceptance limits.
*1 = LCS/LCSD RPD exceeds control limits.
H = Sample was prepped or analyzed beyond the specified holding time

Table 4
Summary of Groundwater Compliance as of First Semi-Annual 2020

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well	Petroleum Constituents and Sheen (BTEX, Gasoline-range, Diesel-range)		cPAHs		Lead	
	Current Sampling Interval	Consecutive Sampling Events in Compliance[1]	Current Sampling Interval	Consecutive Sampling Events in Compliance[1]	Current Sampling Interval	Consecutive Sampling Events in Compliance[1]
Upper Yard						
MW-61A-R	semi-annually	0	none	N/A [11]	none	N/A
Elliott Avenue						
MW-30	semi-annually	0	none	N/A [12]	none	N/A
Offsite Area- Amendment No. 4 Point of Compliance monitoring wells						
MW-70R	quarterly	21	quarterly	21	none	N/A
MW-200	semi-annually	22 [7]	semi-annually[2]	7 [4,5,8]	none	13
MW-201	semi-annually	22 [7]	semi-annually[2]	10	none	13
MW-202	semi-annually	34	semi-annually[2]	30 [3, 4, 10]	none	13
MW-203	semi-annually	34	semi-annually[2]	34 [4,8]	none	13
MW-204	semi-annually	1	semi-annually[2]	34 [4,8,10]	none	13
MW-205	semi-annually	20	semi-annually[2]	20 [4,8]	none	13
MW-206	semi-annually	34	semi-annually[2]	34 [4,6,8]	none	13
MW-207	semi-annually	34	semi-annually[2]	10	none	13
MW-209	quarterly	6	quarterly	12	none	N/A
MW-210	quarterly	7	quarterly	3	none	N/A
MW-211	quarterly	12	quarterly	12	none	N/A

Notes:

[1] "Consecutive events" are number of consecutive sampling events prior to and including the current reporting period that are in compliance with the groundwater remediation action levels. Events prior to 3/97 are not counted. Refer to progress reports for results.

[2]Quarterly sampling beginning June 2007. Semi-annual sampling beginning 2010.

[3]Field-Filtered sample below RAL.

[4]Field-Filtered and Un-Filtered samples below RAL

[5]9/3/08 laboratory reporting limit above RAL

[6]Confirmation samples indicate erroneous 9/4/08 field-filtered data

[7]Sheen noted on groundwater during well redevelopment in August 2010

[8]First Semi-Annual 2011 laboratory reporting limit above RAL

[9]First Semi-Annual 2012 laboratory reporting limit above RAL

[10]Second Semi-Annual 2012 laboratory reporting limit above RAL

[11] MW-61A-R analyzed for cPAHs during the second semi-annual 2018 sampling event

[12] MW-30 analyzed for cPAHs during three sampling events (first semi annual 2013, second semi annual 2018, first semi annual 2019)

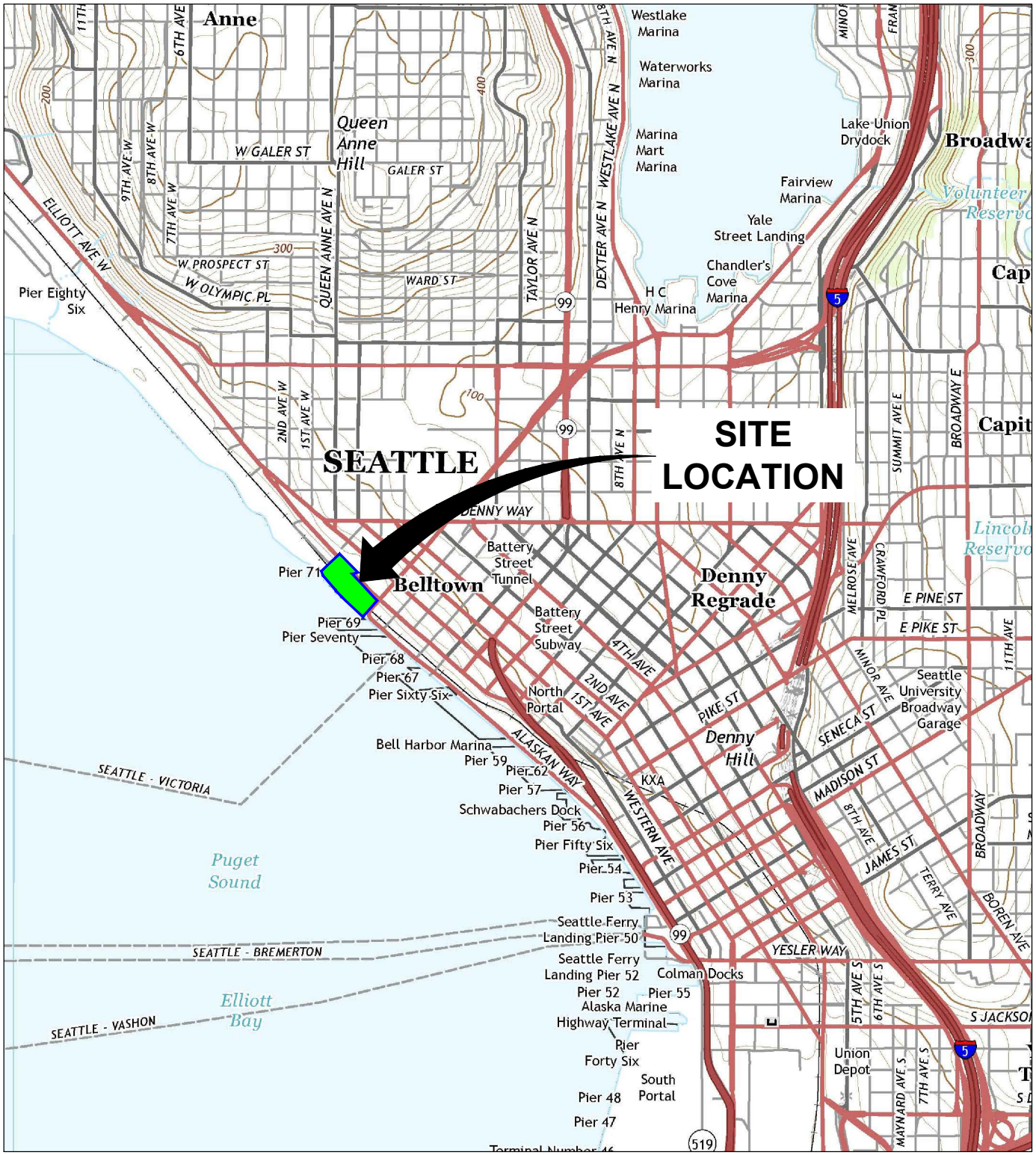
BTEX = benzene, toluene, ethylbenzene, xylenes

cPAHs = carcinogenic polycyclic aromatic hydrocarbons

N/A = not applicable

RAL = Remedial Action Level

FIGURES



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., SEATTLE SOUTH AND SEATTLE NORTH, WASHINGTON, 2014.

N

WASHINGTON

0 2,000' 4,000'

Approximate Scale: 1 in. = 2,000 ft.

FORMER UNOCAL SEATTLE MARKETING TERMINAL
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GROUNDWATER MONITORING REPORT
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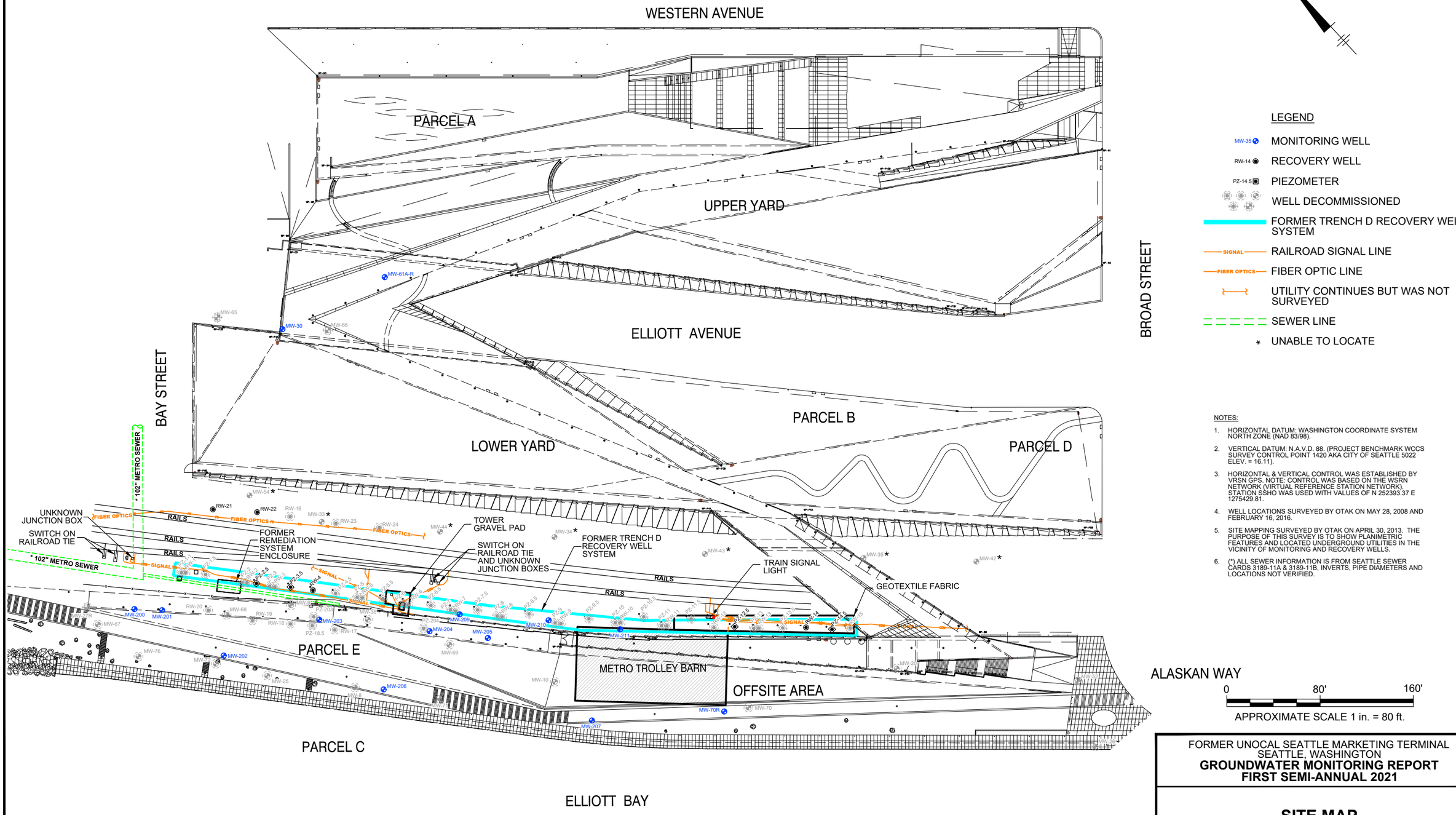
SITE LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE
1

CITY: SAN RAFAEL, CA DIV/GROUP: ENVCAD DB: J. HARRIS
C:\Users\YMB2640\BIM 360\Arcadis\ANA - CHEVRON CORPORATION\Project Files\SEATTLE TERMINAL\2021\300627\80\01-DWG\GEN-F01-SITE LOCATION MAP.dwg LAYOUT: 1 SAVED: 3/31/2021 2:55 PM ACADVER: 23.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 3/31/2021 2:58 PM BY: Y M. BABU



N

LEGEND

- MW-35 MONITORING WELL
- RW-14 RECOVERY WELL
- PZ-14.5 PIEZOMETER
- WELL DECOMMISSIONED
- FORMER TRENCH D RECOVERY WELL SYSTEM
- SIGNAL RAILROAD SIGNAL LINE
- FIBER OPTICS FIBER OPTIC LINE
- UTILITY CONTINUES BUT WAS NOT SURVEYED
- SEWER LINE
- * UNABLE TO LOCATE

NOTES:

1. HORIZONTAL DATUM: WASHINGTON COORDINATE SYSTEM NORTH ZONE (NAD 83/98).
2. VERTICAL DATUM: N.A.V.D. 88. (PROJECT BENCHMARK WCCS SURVEY CONTROL POINT 1420 AKA CITY OF SEATTLE 5022 ELEV. = 16.11).
3. HORIZONTAL & VERTICAL CONTROL WAS ESTABLISHED BY VRSN GPS. NOTE: CONTROL WAS BASED ON THE WSRN NETWORK (VIRTUAL REFERENCE STATION NETWORK). STATION SSHO WAS USED WITH VALUES OF N 252393.37 E 1275429.81.
4. WELL LOCATIONS SURVEYED BY OTAK ON MAY 28, 2008 AND FEBRUARY 16, 2016.
5. SITE MAPPING SURVEYED BY OTAK ON APRIL 30, 2013. THE PURPOSE OF THIS SURVEY IS TO SHOW PLANIMETRIC FEATURES AND LOCATED UNDERGROUND UTILITIES IN THE VICINITY OF MONITORING AND RECOVERY WELLS.
6. (*) ALL SEWER INFORMATION IS FROM SEATTLE SEWER CARDS 3189-11A & 3189-11B, INVERTS, PIPE DIAMETERS AND LOCATIONS NOT VERIFIED.

0 80' 160'

APPROXIMATE SCALE 1 in. = 80 ft.

FORMER UNOCAL SEATTLE MARKETING TERMINAL
SEATTLE, WASHINGTON
GROUNDWATER MONITORING REPORT
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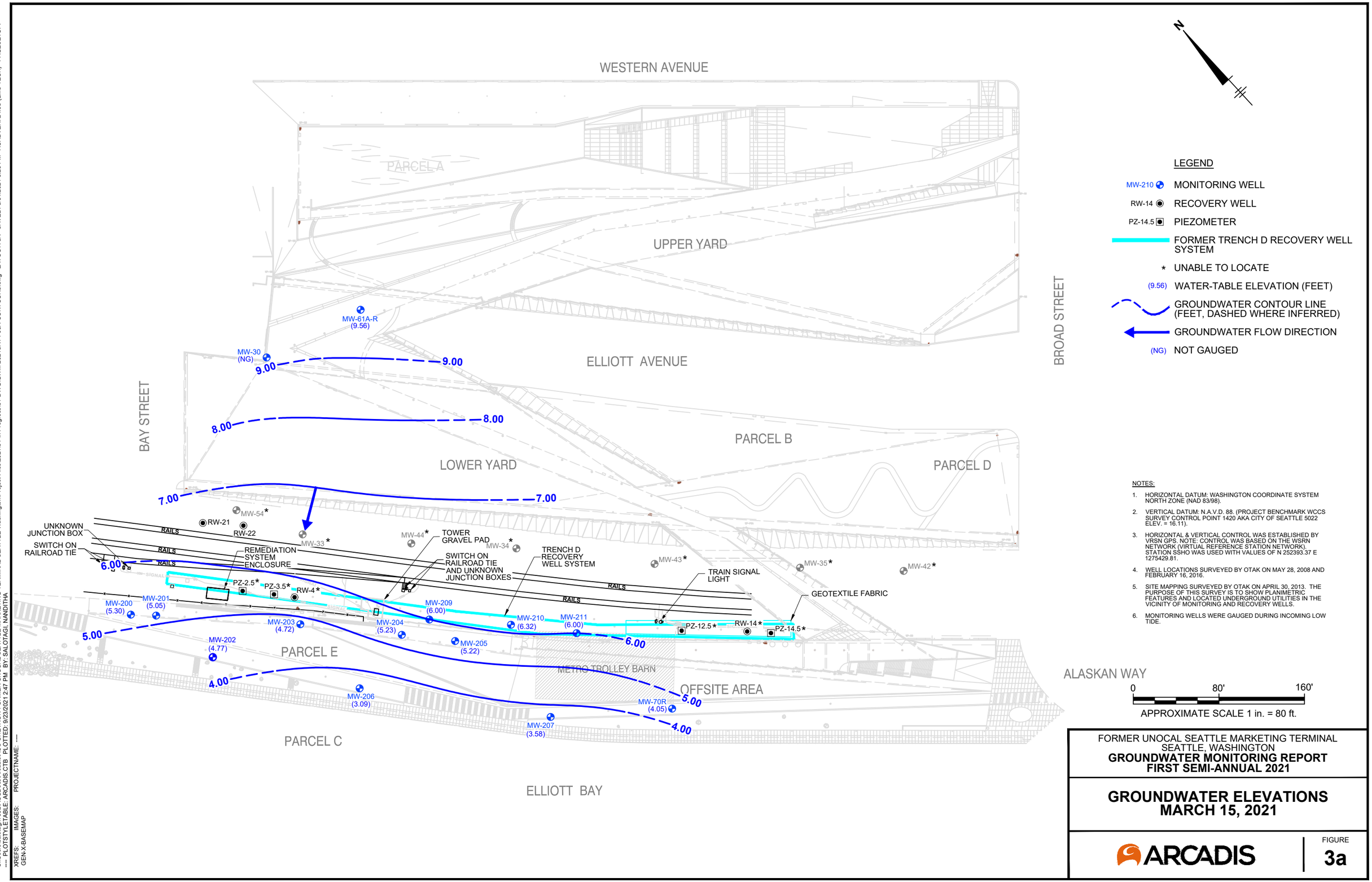
SITE MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE
2

CITY: SAN RAFAEL, CA DIV/GROUP: ENV/CAD DB: J. HARRIS LD: E. MURESAN
C:\Users\YMB2640\Bim 360\Arcadis\ANA - CHEVRON CORPORATION\Project Files\SEATTLE TERMINAL\2021\300627801-DWG\GEN-F02-SITE PLAN.dwg LAYOUT: 2 SAVED: 3/31/2021 2:56 PM ACADVER: 23.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 3/31/2021 2:58 PM BY: Y M, BABU



LEGEND

- MW-210 — MONITORING WELL
- RW-14 — RECOVERY WELL
- PZ-14.5 — PIEZOMETER
- FORMER TRENCH D RECOVERY WELL SYSTEM
- * — UNABLE TO LOCATE
- (9.56) — WATER-TABLE ELEVATION (FEET)
- GROUNDWATER CONTOUR LINE (FEET, DASHED WHERE INFERRED)
- GROUNDWATER FLOW DIRECTION
- (NG) — NOT GAUGED

NOTES:

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6. MONITORING WELLS WERE GAUGED DURING INCOMING LOW TIDE.

APPROXIMATE SCALE 1 in. = 80 ft.

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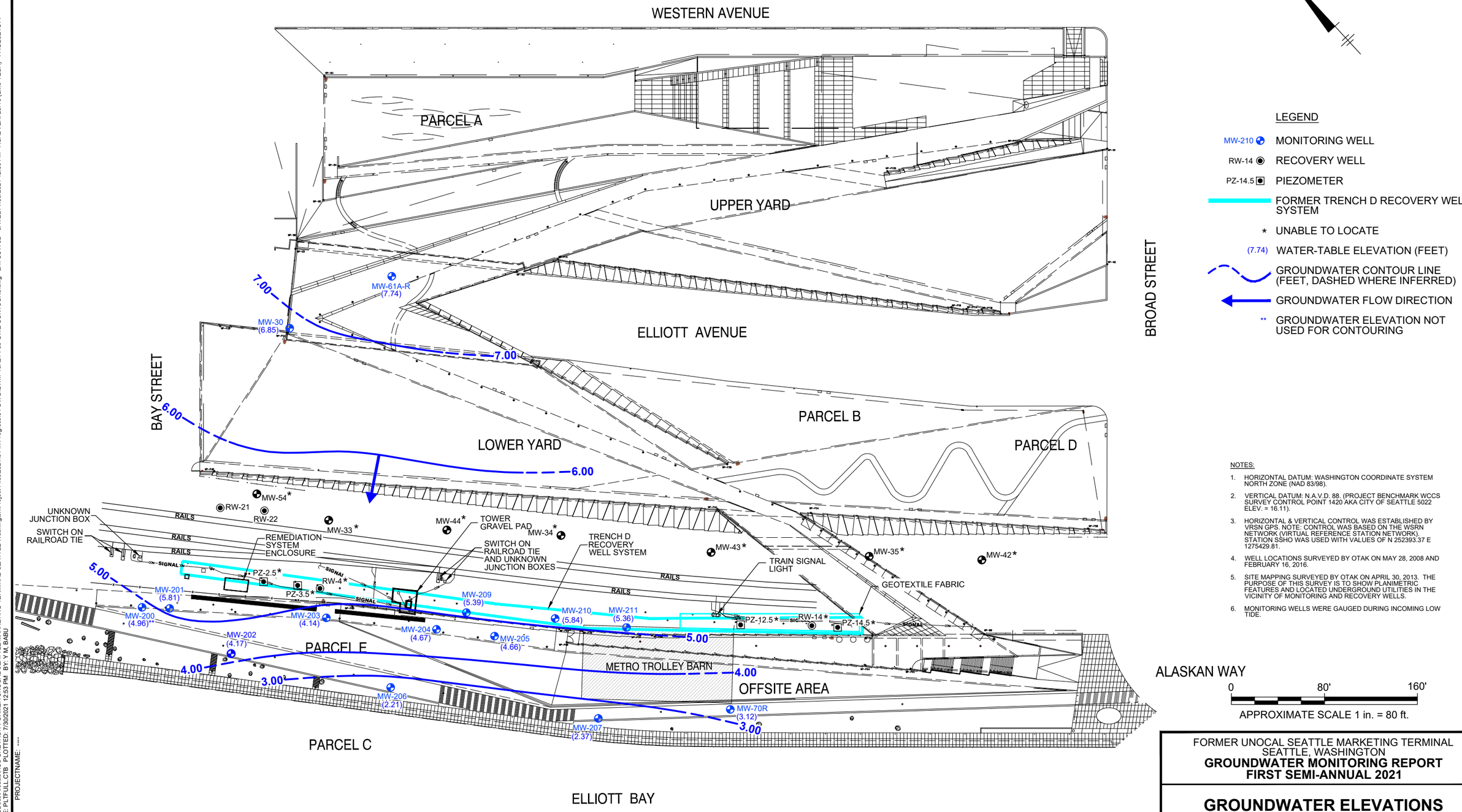
GROUNDWATER ELEVATIONS MARCH 15, 2021

ARCADIS

FIGURE
3a



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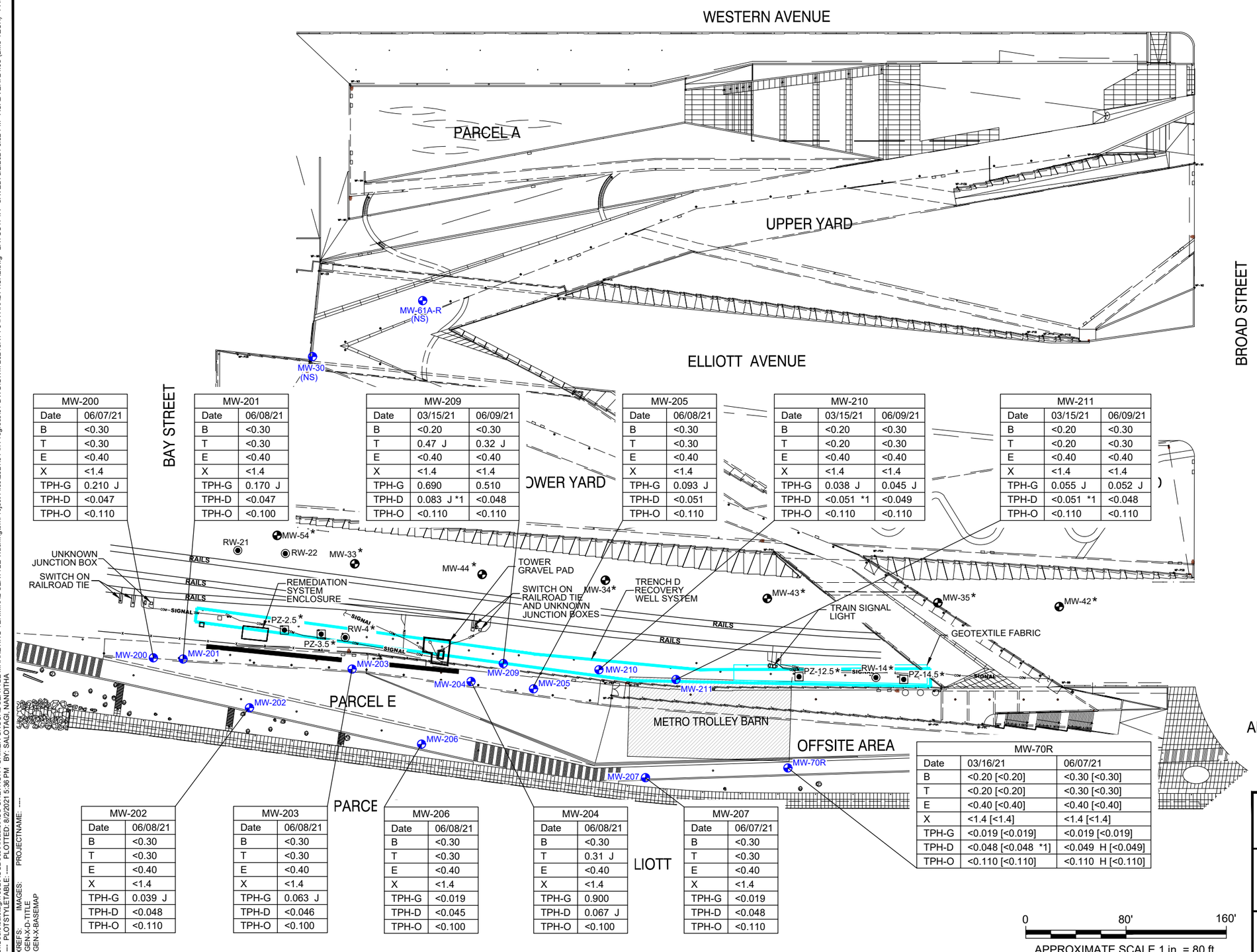
FIRST SEMI-ANNUAL 2021

GROUNDWATER ELEVATIONS JUNE 9, 2021

ARCADIS Design & Consultancy for natural and built assets

FIGURE **3b**



MW-200	
Date	06/07/21
B	<0.30
T	<0.30
E	<0.40
X	<1.4
TPH-G	0.210 J
TPH-D	<0.047
TPH-O	<0.110

MW-201	
Date	06/08/21
B	<0.30
T	<0.30
E	<0.40
X	<1.4
TPH-G	0.170 J
TPH-D	<0.047
TPH-O	<0.100

MW-209		
Date	03/15/21	06/09/21
B	<0.20	<0.30
T	0.47 J	0.32 J
E	<0.40	<0.40
X	<1.4	<1.4
TPH-G	0.690	0.510
TPH-D	0.083 J *1	<0.048
TPH-O	<0.110	<0.110

MW-205	
Date	06/08/21
B	<0.30
T	<0.30
E	<0.40
X	<1.4
TPH-G	0.093 J
TPH-D	<0.051
TPH-O	<0.110

MW-210		
Date	03/15/21	06/09/21
B	<0.20	<0.30
T	<0.20	<0.30
E	<0.40	<0.40
X	<1.4	<1.4
TPH-G	0.038 J	0.045 J
TPH-D	<0.051 *1	<0.049
TPH-O	<0.110	<0.110

MW-211		
Date	03/15/21	06/09/21
B	<0.20	<0.30
T	<0.20	<0.30
E	<0.40	<0.40
X	<1.4	<1.4
TPH-G	0.055 J	0.052 J
TPH-D	<0.051 *1	<0.048
TPH-O	<0.110	<0.110

MW-202	
Date	06/08/21
B	<0.30
T	<0.30
E	<0.40
X	<1.4
TPH-G	0.039 J
TPH-D	<0.048
TPH-O	<0.110

MW-203	
Date	06/08/21
B	<0.30
T	<0.30
E	<0.40
X	<1.4
TPH-G	0.063 J
TPH-D	<0.046
TPH-O	<0.100

MW-206	
Date	06/08/21
B	<0.30
T	<0.30
E	<0.40
X	<1.4
TPH-G	<0.019
TPH-D	<0.045
TPH-O	<0.100

MW-204	
Date	06/08/21
B	<0.30
T	0.31 J
E	<0.40
X	<1.4
TPH-G	0.900
TPH-D	0.067 J
TPH-O	<0.100

MW-207	
Date	06/07/21
B	<0.30
T	<0.30
E	<0.40
X	<1.4
TPH-G	<0.019
TPH-D	<0.048
TPH-O	<0.110

MW-70R		
Date	03/16/21	06/07/21
B	<0.20 [<0.20]	<0.30 [<0.30]
T	<0.20 [<0.20]	<0.30 [<0.30]
E	<0.40 [<0.40]	<0.40 [<0.40]
X	<1.4 [<1.4]	<1.4 [<1.4]
TPH-G	<0.019 [<0.019]	<0.019 [<0.019]
TPH-D	<0.048 [<0.048 *1]	<0.049 H [<0.049]
TPH-O	<0.110 [<0.110]	<0.110 H [<0.110]

LEGEND

- MW-210 MONITORING WELL
- RW-14 RECOVERY WELL
- PZ-14.5 PIEZOMETER
- FORMER TRENCH D RECOVERY WELL SYSTEM
- * UNABLE TO LOCATE
- (NS) NOT SAMPLED, NO ACCESS

SAMPLE LOCATION	
DATE	SAMPLE DATE
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
TPH-G	TPH GASOLINE
TPH-D	TPH DIESEL
TPH-O	TPH HEAVY OIL

BTEX RESULTS REPORTED IN MICROGRAMS PER LITER (µg/L). TPH-G, TPH-D, AND TPH-O RESULTS REPORTED IN MILLIGRAMS PER LITER (mg/L).

TPH = TOTAL PETROLEUM HYDROCARBON

<1.4/ [<1.4] = DUPLICATE SAMPLE

J = RESULT IS LESS THAN THE REPORTING LIMIT (RL) BUT GREATER THAN OR EQUAL TO THE METHOD DETECTION LIMIT (MDL) AND THE CONCENTRATION IS AN APPROXIMATE VALUE.

<0.2 = NOT DETECTED AT OR ABOVE THE MDL

*1 = LCS/LCSD RPD EXCEEDS CONTROL LIMITS.

H = SAMPLE WAS PREPPED OR ANALYZED BEYOND THE SPECIFIED HOLDING TIME

NOTES:

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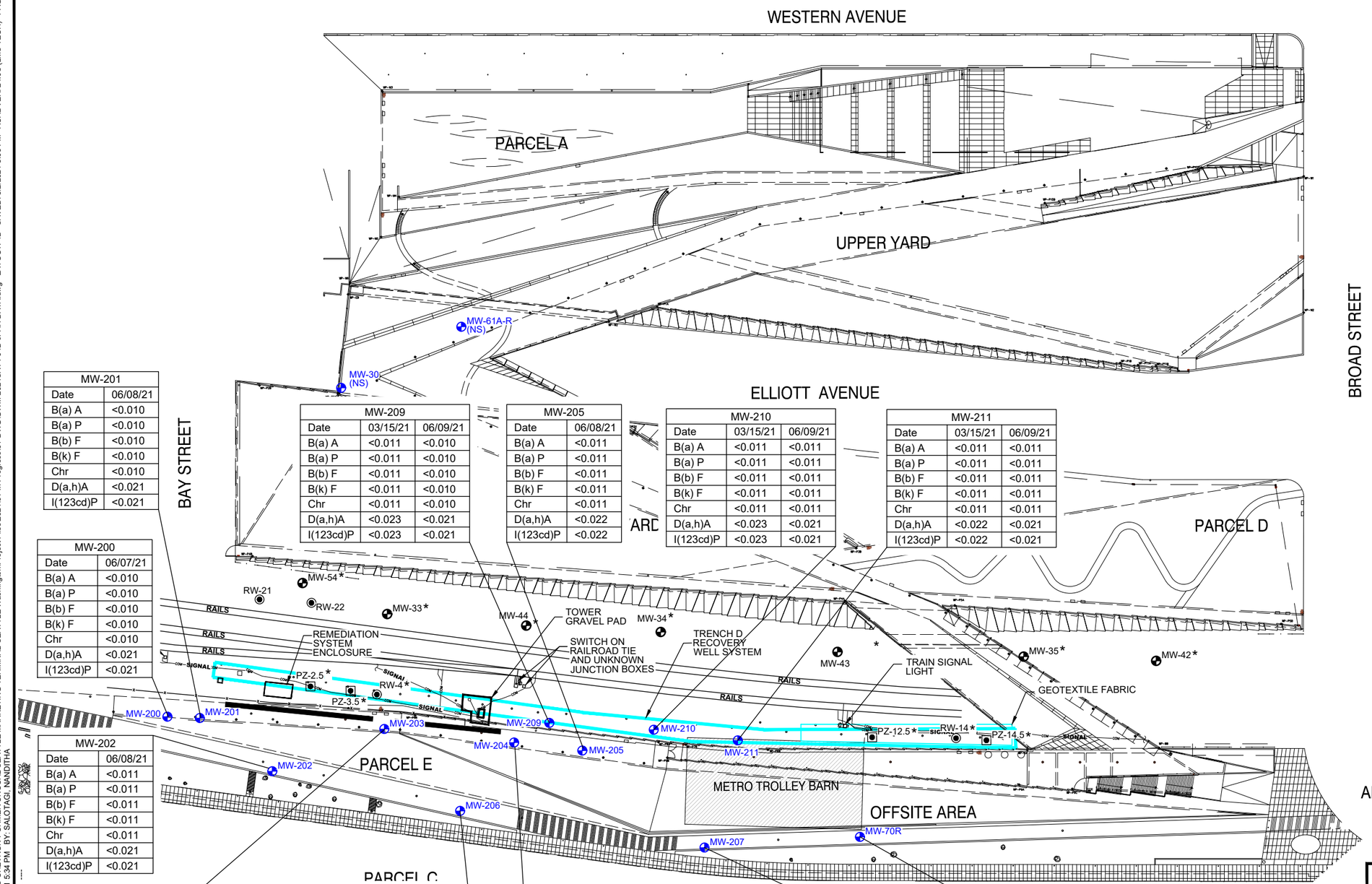
FORMER UNOCAL SEATTLE MARKETING TERMINAL
SEATTLE, WASHINGTON
GROUNDWATER MONITORING REPORT
SECOND SEMI-ANNUAL 2021

GROUNDWATER ANALYTICAL SUMMARY MAP MARCH AND JUNE, 2021

ARCADIS

FIGURE
4a



MW-201	
Date	06/08/21
B(a) A	<0.010
B(a) P	<0.010
B(b) F	<0.010
B(k) F	<0.010
Chr	<0.010
D(a,h)A	<0.021
I(123cd)P	<0.021

MW-200	
Date	06/07/21
B(a) A	<0.010
B(a) P	<0.010
B(b) F	<0.010
B(k) F	<0.010
Chr	<0.010
D(a,h)A	<0.021
I(123cd)P	<0.021

MW-202	
Date	06/08/21
B(a) A	<0.011
B(a) P	<0.011
B(b) F	<0.011
B(k) F	<0.011
Chr	<0.011
D(a,h)A	<0.021
I(123cd)P	<0.021

MW-209		
Date	03/15/21	06/09/21
B(a) A	<0.011	<0.010
B(a) P	<0.011	<0.010
B(b) F	<0.011	<0.010
B(k) F	<0.011	<0.010
Chr	<0.011	<0.010
D(a,h)A	<0.023	<0.021
I(123cd)P	<0.023	<0.021

MW-205	
Date	06/08/21
B(a) A	<0.011
B(a) P	<0.011
B(b) F	<0.011
B(k) F	<0.011
Chr	<0.011
D(a,h)A	<0.022
I(123cd)P	<0.022

MW-210		
Date	03/15/21	06/09/21
B(a) A	<0.011	<0.011
B(a) P	<0.011	<0.011
B(b) F	<0.011	<0.011
B(k) F	<0.011	<0.011
Chr	<0.011	<0.011
D(a,h)A	<0.023	<0.021
I(123cd)P	<0.023	<0.021

MW-211		
Date	03/15/21	06/09/21
B(a) A	<0.011	<0.011
B(a) P	<0.011	<0.011
B(b) F	<0.011	<0.011
B(k) F	<0.011	<0.011
Chr	<0.011	<0.011
D(a,h)A	<0.022	<0.021
I(123cd)P	<0.022	<0.021

MW-203	
Date	06/08/21
B(a) A	<0.010
B(a) P	<0.010
B(b) F	<0.010
B(k) F	<0.010
Chr	<0.010
D(a,h)A	<0.020
I(123cd)P	<0.020

MW-206	
Date	06/08/21
B(a) A	<0.011
B(a) P	<0.011
B(b) F	<0.011
B(k) F	<0.011
Chr	<0.011
D(a,h)A	<0.022
I(123cd)P	<0.022

MW-204	
Date	06/08/21
B(a) A	<0.010
B(a) P	<0.010
B(b) F	<0.010
B(k) F	<0.010
Chr	<0.010
D(a,h)A	<0.021
I(123cd)P	<0.021

MW-207	
Date	06/07/21
B(a) A	<0.011
B(a) P	<0.011
B(b) F	<0.011
B(k) F	<0.011
Chr	<0.011
D(a,h)A	<0.021
I(123cd)P	<0.021

MW-70R		
Date	03/16/21	06/07/21
B(a) A	<0.011 [<0.010]	<0.011 [<0.011]
B(a) P	<0.011 [<0.010]	<0.011 [<0.011]
B(b) F	<0.011 [<0.010]	<0.011 [<0.011]
B(k) F	<0.011 [<0.010]	<0.011 [<0.011]
Chr	<0.011 [<0.010]	<0.011 [<0.011]
D(a,h)A	<0.021 [<0.020]	<0.022 [<0.023]
I(123cd)P	<0.021 [<0.020]	<0.022 [<0.023]

N

LEGEND

- MW-210 — MONITORING WELL
- RW-14 — RECOVERY WELL
- PZ-14.5 — PIEZOMETER
- FORMER TRENCH D RECOVERY WELL SYSTEM
- * UNABLE TO LOCATE
- (NS) NOT SAMPLED, NO ACCESS

SAMPLE LOCATION	
DATE	SAMPLE DATE
B(a)A	Benzo(a)anthracene
B(a)P	Benzo(a)pyrene
B(b)F	Benzo(b)fluoranthene
B(k)F	Benzo(k)fluoranthene
Chr	Chrysene
D(a,h)A	Dibenzo(a,h)anthracene
I(123cd)P	Indeno(1,2,3-cd)pyrene

RESULTS REPORTED IN MICROGRAMS PER LITER (µg/L)

<0.010 / [<0.010] = DUPLICATE SAMPLE

cPAH = CARCINOGENIC POLYNUCLEAR AROMATIC HYDROCARBONS

<0.011 = NOT DETECTED AT OR ABOVE THE MDL

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APPROXIMATE SCALE 1 in. = 80 ft.

FORMER UNOCAL SEATTLE MARKETING TERMINAL
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GROUNDWATER MONITORING REPORT
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GROUNDWATER cPAH DATA MARCH AND JUNE, 2021

ARCADIS

FIGURE
4b

APPENDIX A

Site History

SITE HISTORY

The site was operated by the Union Oil Company of California (Unocal) as a bulk fuel distribution facility from the early 1900s to approximately 1975. Leaded and unleaded gasoline, diesel, lube oil, motor oils and petroleum-based solvents (non-chlorinated) were stored at the site. In the 1980s, the above-ground site structures were demolished.

Chevron, on behalf of Unocal, is conducting cleanup of the site as required by Order on Consent DE88-N223 and Amendments 1 through 5. The initial Order on Consent was signed by Unocal and the Washington State Department of Ecology (Ecology) in December 1988. In July 1995, Amendment No. 4 was signed and contains cleanup targets and remedial action levels (RALs) for groundwater in the Upper Yard, Elliott Avenue, Lower Yard, and Offsite Area. Cleanup activities conducted by Unocal at the site included: an excavation with onsite treatment and offsite disposal of approximately 50,000 tons of soil from the Upper Yard; light non-aqueous phase liquid (LNAPL) recovery; and groundwater remediation (pump and treat) and excavation and disposal of approximately 45,000 tons of soil from Elliott Avenue and the Offsite Area.

In addition, Unocal excavated approximately 60,000 tons of soil exceeding the total petroleum hydrocarbon (TPH) RAL and removed and treated petroleum-containing groundwater (GeoEngineers, 1998). Petroleum-containing soils were typically excavated to depths of 15 to 20 feet below ground surface. The Lower Yard excavation was backfilled with clean fill material and moderately impacted petroleum-containing soils from the Upper and Lower Yards. The upper 95 percent confidence level of the mean for TPH concentrations remaining in these impacted Lower Yard soils used for backfill was below the RAL of 7,500 milligrams per kilogram (mg/kg) (GeoEngineers, 1998). Several feet of imported rock were placed at the base of the excavation. According to Unocal, the average TPH concentration in these backfill soils was approximately 1,000 mg/kg (SAM, 1999).

The Upper Yard and Lower Yard properties of the site were sold by Unocal to the Trust for Public Land for the Seattle Art Museum (SAM) in 1999. In 2004, SAM began construction for redevelopment of the property, including the Offsite Area (which is owned by the City of Seattle Parks and Recreation), as the Olympic Sculpture Park (OSP). SAM entered a Pre-Purchaser Agreement with Ecology prior to their purchase of the property. As part of the agreement, SAM submitted remediation design reports to Ecology for the OSP. As provided in a January 17, 2008, letter, Ecology indicated that the terms of the Pre-Purchaser Agreement were satisfied. A Stipulation and Order of Dismissal (No. 99-2-50226-4SEA) was issued on October 31, 2008.

In conjunction with the OSP construction in the Offsite Area, Unocal conducted a “hot spot” excavation from July to October of 2005. The goal of this remedial action was to remove a source area of petroleum hydrocarbons and LNAPL in soil. Approximately 4,435 tons of petroleum-impacted soils were removed during the “hot spot” excavation (GeoEngineers, January 2006). Following the soil removal, the excavation was backfilled and the surface was restored with asphalt pavement.

On October 4, 2009, Arcadis submitted the *Work Plan for LNAPL Mobility Assessment, Natural Attenuation Monitoring and Surfactant Application Pilot Testing* to Ecology (October 2009 Work Plan). The October 2009 Work Plan was prepared in response to a letter from Ecology to Chevron dated June 8, 2009, requesting that Chevron assess the monitoring well network, address options for active remediation in the Offsite Area, conduct several short-term multiphase extraction (MPE) events on monitoring well MW-204

and on wells where LNAPL is observed in the Elliott Avenue Area and the Offsite Area and to further evaluate unfiltered/filtered samples of carcinogenic polycyclic aromatic hydrocarbons (cPAHs). This October 2009 Work Plan outlined proposed activities to evaluate the monitoring well network, evaluate remedial alternatives for the site, and discussed the potential risk of cPAHs concentrations remaining in groundwater in the Offsite Area. Specific areas addressed included LNAPL located in the Elliott Avenue Area, LNAPL along the railroad tracks and dissolved-phase concentrations in the Offsite Area.

Ecology approved the October 2009 Work Plan, with specific comments, on November 16, 2009. Following meetings with stakeholders and Ecology, Arcadis submitted the *Revised Work Plan for LNAPL Mobility Assessment, Natural Attenuation Monitoring and Surfactant Application Pilot Testing* (January 2010 Revised Work Plan) to Ecology on January 19, 2010.

On December 8, 2009, Ecology submitted a letter to Chevron approving the cancellation of fourth quarter 2009 groundwater compliance monitoring. In addition, Ecology recommended conducting semi-annual groundwater compliance monitoring for 2010 and quarterly monitoring for visual inspection, measurement and removal (if applicable) at monitoring wells MW-30 and MW-61A-R and recovery wells RW-1 through RW-3 and RW-21. Monitoring well MW-61A-R is a replacement for well MW-61A, which was originally an Upper Yard monitoring well. However, MW-61A-R is located in the Elliott Avenue right-of-way (ROW) and is currently referred to as an Elliott Avenue Area monitoring well.

On March 19, 2010, Ecology approved the January 2010 Revised Work Plan with additional specific comments. Following additional meetings, Arcadis submitted the *Addendum to the Revised Work Plan for LNAPL Mobility Assessment, Natural Attenuation Monitoring and Surfactant Application Pilot Testing* (May 2010 Addendum to the Revised Work Plan) on May 3, 2010, to address the additional stakeholder and Ecology comments on the January 2010 Revised Work Plan. On May 18, 2010, Ecology approved the May 2010 Addendum to the Revised Work Plan via electronic mail. Field work to implement the May 2010 Addendum to the Revised Work Plan began in the summer of 2010.

Arcadis submitted the *2010 Summary Report and Risk Evaluation* on February 1, 2011 with the following recommendations and responses from Ecology:

- Continue quarterly gauging and semi-annual groundwater monitoring of wells MW-30, MW-61A-R, RW-3 and RW-21. Ecology concurred; both gauging and groundwater monitoring are ongoing for monitoring wells MW-30 and MW-61A-R. Recovery wells RW-3 and RW-21 were decommissioned with Ecology approval in June 2014 (discussed below).
- Continue semi-annual groundwater monitoring of wells MW-200 through MW-207. Ecology concurred: semi-annual groundwater monitoring is ongoing.
- Remove dissolved lead from the list of site constituents of concern. Dissolved lead has not been detected at the site since November 2007 and monitoring wells in the Offsite Area have at least 12 consecutive monitoring events without a dissolved-lead concentration exceedance. The few concentrations that were detected remained more than two orders of magnitude below the site RAL. Ecology concurred: effective second semi-annual 2011 monitoring event, lead is no longer a constituent of concern.
- Abandon piezometers PZ-61A-R, PZ-203, and PZ-204 in place. Ecology recommended maintaining and gauging piezometers through quarterly gauging during next two semi-annual monitoring events,

then to re-evaluate. Piezometers PZ-61A-R, PZ-203, and PZ-204 were decommissioned in June 2014 with the approval of Ecology (discussed below).

- Abandon Trench D extraction wells RW-1, RW-2, RW-5 through RW-13 and RW-15 in place. Ecology recommended maintaining and quarterly gauging of Trench D extraction wells through the next two semi-annual monitoring events, then to re-evaluate. Quarterly gauging of extraction wells RW-1, RW-2, RW-5 through RW-13 and RW-15 for two additional semi-annual monitoring events was fulfilled. The Trench D extraction wells were decommissioned in June 2014, as discussed below.
- The LNAPL occasionally observed in wells RW-3, RW-21 or MW-30 is not mobile. Arcadis does not recommend further remedial operations on these wells unless quarterly gauging activities indicates a change in the volume or type of LNAPL present in the wells compared to historical observations. Ecology concurred and recommended continuing quarterly gauging through two semi-annual monitoring events and then to re-evaluate. Quarterly gauging of RW-3, RW-21 and MW-30 for two semi-annual monitoring events was fulfilled. Recovery wells RW-3 and RW-21 were decommissioned in June 2014 with the approval of Ecology (discussed below).
- Add monitoring well MW-205 to the quarterly gauging program. Ecology concurred: MW-205 was gauged quarterly as part of the quarterly gauging program ending in 2014.
- If LNAPL is observed and is recoverable, submit a sample for chemical testing and possible mobility parameter analysis. Ecology concurred. Recoverable thicknesses of LNAPL were observed in Trench D wells PZ-4.5, PZ-6, PZ-10.5, PZ-11.5, and PZ-13 in February 2014. Samples of the LNAPL were submitted for chemical analysis and in some cases, mobility parameter analysis. The results of these analyses were submitted in the Trench D Recovery System Decommissioning Summary and Recommendation for Replacement Well Installation" (Arcadis July, 2014).

In December 2012, Chevron submitted a revised Draft Amendment to the Order to Ecology. The proposed Amendment, which was prepared with the input of the City of Seattle and the SAM, recommended abandonment of the Trench D recovery wells and piezometers, installation of up to five replacement wells along the Trench D area, and additional groundwater monitoring. At the request of Ecology, Arcadis submitted the "Work Plan for Decommissioning Trench D Recovery System and Three Piezometers Installed in 2010" (Arcadis, May 2013). This work plan describes a scope of work to decommission remaining wells and equipment associated with Trench D, as well as the piezometers installed as part of the 2010 site assessment activities. This work plan was approved by Ecology in email correspondence dated July 29, 2013.

The decommissioning work was conducted in two phases. Phase I was conducted from February 21 to 25, 2014 and included the following activities:

- Prepared the site to allow access for equipment and vehicles.
- Removed the remediation system compound and equipment.
- Attempted to locate missing piezometers and recovery wells.
- Gauged recovery wells and piezometers.
- Received variance approval for well abandonment.

Separate LNAPL sampling events were completed between the two phases of decommissioning work on February 26 and May 5, 2014.

Phase II was conducted from June 9 to 13, 2014 and included the following activities:

- Gauged recovery wells and piezometers.
- Vacuum extraction of fluids from each recovery well and piezometer located along Trench D.
- Decommissioned recovery wells, piezometers, 2-inch lateral remediation system piping, and a 6-foot long by 4-foot wide recovery vault where the piping entered the former remediation system.
- Decommissioned of piezometers installed in 2010 (PZ-61A-R, PZ-203, and PZ-204).
- Disposed of waste materials generated by the above activities.

A report of the Trench D decommissioning activities, LNAPL summary and work plan for the installation of the replacement monitoring wells was submitted under separate cover “Trench D Recovery System Decommissioning Summary and Recommendation for Replacement Well Installation” (Arcadis July, 2014).

At the request of Ecology, Arcadis submitted a work plan for the installation of up to six additional monitoring wells in the Offsite Area. The work plan was approved by Ecology in correspondence dated May 29, 2015. The work plan was implemented in January 2016. A report documenting installation activities was submitted to Ecology on April 29, 2016.

REMEDIAL ACTIVITIES

Offsite Area Remediation System

A groundwater extraction system was installed in the offsite area in 1989. The system included 24 extraction wells located along the BNSF right-of-way. In November and December 2006, the underground piping was severely damaged during the construction of the OSP, rendering the system inoperable.

From 1989 to November 2006, approximately 29,244,966 gallons of water and 4,809 gallons of LNAPL were recovered and treated by the groundwater extraction system. The extraction system last recovered LNAPL in fourth quarter 2004; no LNAPL was recovered during the last two years of operation. The associated Trench D recovery wells were gauged semi-annually until they were decommissioned in June 2014. The oil water separator was rehabilitated in May 2010 for use in disposal of purge water generated from routine groundwater sampling events and for well redevelopment and hydraulic conductivity testing approved by Ecology. The oil water separator was decommissioned during the June 2014 Trench D decommissioning activities and the King County Major Discharge Authorization Number 529-04 was discontinued.

Throughout the third and fourth quarter of 2011, monitoring well MW-205 was gauged on a bi-weekly (every other week) basis. During these events, no LNAPL or sheen was observed. Gauging was reduced to quarterly as of the first semi-annual 2012 reporting period at this location and continued on a quarterly basis since.

Upper Yard and Elliott Avenue LNAPL Removal

Monitoring well MW-61A-R was re-developed on September 3, 2008 using a disposable bailer and a vacuum truck to remove sediment and LNAPL which may have accumulated in the well and/or sand pack. Approximately ten well volumes of groundwater and residual LNAPL were removed. The re-development water and recovered LNAPL were collected in the vacuum truck and transported to an approved facility for recycling. The amount of LNAPL recovered was not quantified. Mobile multi-phase extraction (MPE) was initiated in August 2009 in monitoring wells MW-30 and MW-61A-R. Observations made during MPE operations indicate that short term MPE does not influence the groundwater table and subsurface vapor flow. MPE was determined to be an ineffective method to address the remaining LNAPL and dissolved-phase impacts at the site due to the minimal remaining hydrocarbon impacts at the site and associated low MPE mass removal rate.

To assess persistent measurable LNAPL observed during groundwater monitoring, a surfactant-enhanced LNAPL recovery pilot test was performed on monitoring well MW-61A-R in July 2010. Approximately 200 gallons of surfactant were injected into MW-61A-R. The surfactant solution was allowed to remain in the formation for approximately 24 hours and then approximately 900 gallons of fluids were extracted. Monitoring was completed weekly for the first month after extraction. After weekly monitoring was completed, monthly monitoring was initiated and quarterly monitoring is ongoing. A complete summary of the surfactant-enhanced LNAPL recovery pilot test was submitted in the *2010 Summary Report and Risk Evaluation* on February 1, 2011.

Lower Yard LNAPL Recovery

LNAPL was observed in recovery well RW-21 during the September 2013 groundwater monitoring event (visually observed on oil/water interface probe, a measurable thickness was not present). This recovery well, as well as the downgradient Trench D recovery wells (RW-1 through RW-3), were included in the quarterly gauging program. Manual LNAPL recovery from RW-21 had been unsuccessful due to the highly-viscous nature of the LNAPL. LNAPL has not been observed in recovery wells RW-1 and RW-2 since the gauging program was implemented and has not been observed in RW-3 since the first semi-annual groundwater monitoring event of 2013. Wells RW-1, RW-2 and RW-21 were decommissioned in 2014 during the Trench D decommissioning activities.

REFERENCES

Arcadis. 2009. Low-Flow Groundwater Purging and Sampling Procedures for Monitoring Wells. March 9.

Arcadis. 2013. Work Plan for Decommissioning Trench D Recovery System and Three Piezometers Installed in 2010. May 31.

Arcadis. 2014. Trench D Recovery System Decommissioning Summary and Recommendation for Replacement Well Installation. July.

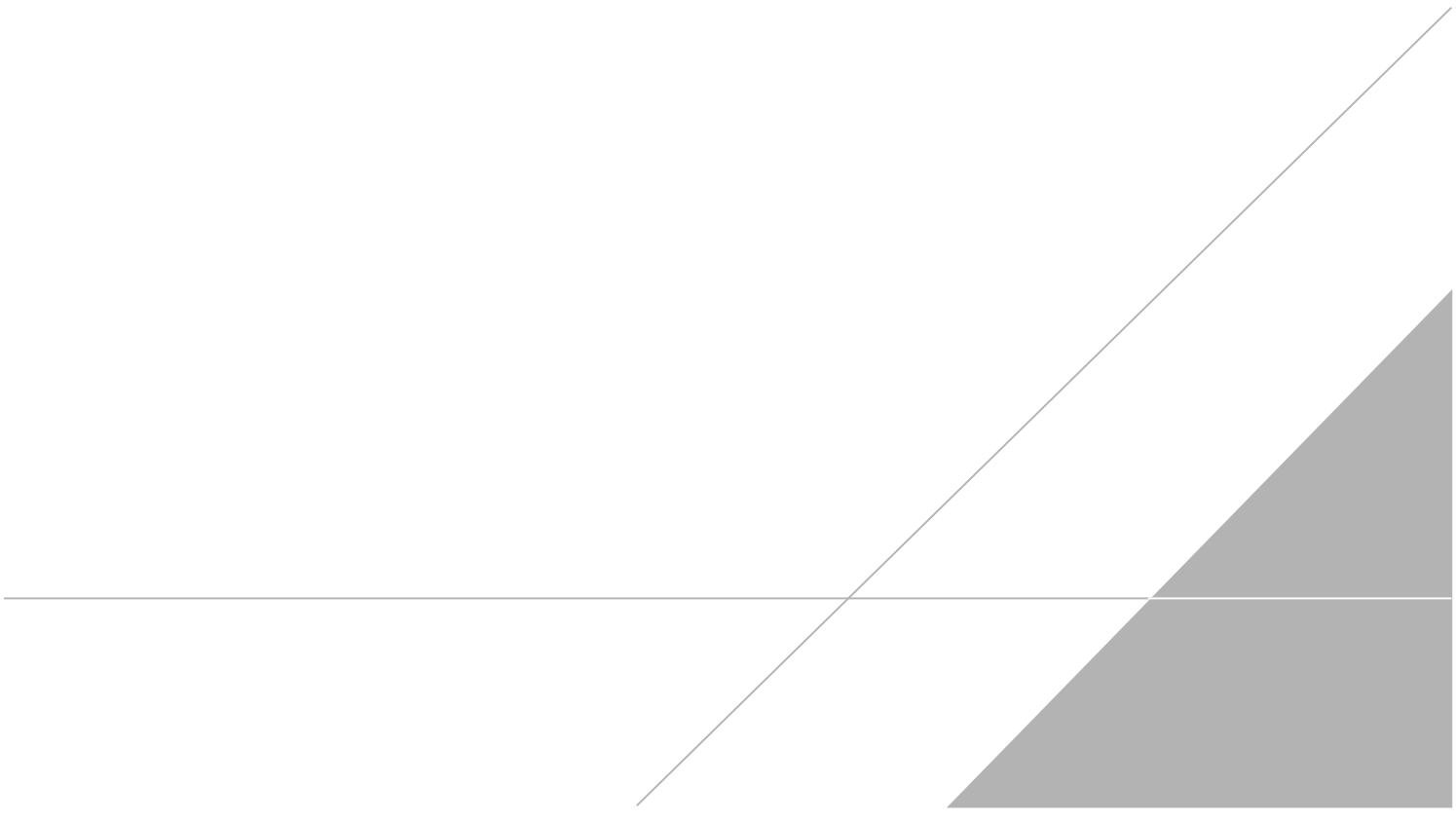
Arcadis. 2015. Work Plan for Additional Well Installation in Former Trench D Area and Offsite Area, Former Unocal Seattle Marketing Terminal. May.

GeoEngineers, 1998. Final Cleanup Report – Lower Yard, Unocal Former Seattle Marketing Terminal Property. September 23.

Seattle Art Museum (SAM). 1999. Draft Cleanup Action Plan, Former Unocal Seattle Marketing Property. October 6. Numbered Heading Level 2

APPENDIX B

Standard Operating Procedure



ARCADIS
Infrastructure, environment, facilities

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Low-Flow Groundwater Purging and Sampling Procedures for Monitoring Wells

Rev. #: 3

Rev Date: March 9, 2009

Approval Signatures

Prepared by:  Date: 3/9/2009

Reviewed by:  Date: 3/9/2009

(Technical Expert)

I. Scope and Application

Groundwater samples will be collected from monitoring wells to evaluate groundwater quality. The protocol presented in this standard operating procedure (SOP) describes the procedures to be used to purge monitoring wells and collect groundwater samples. This protocol has been developed in accordance with the United States Environmental Protection Agency (USEPA) Region I Low Stress (Low Flow) Purging and Sampling Procedures for the Collection of Groundwater Samples from Monitoring Wells (USEPA SOP No. GW0001; July 30, 1996). Both filtered and unfiltered groundwater samples may be collected using this low-flow sampling method. Filtered samples will be obtained using a 0.45-micron disposable filter. No wells will be sampled until well development has been performed in accordance with the procedures presented in the SOP titled Monitoring Well Development, unless that well has been sampled or developed within the prior 1-year time period. Groundwater samples will not be collected within 1 week following well development.

II. Personnel Qualifications

ARCADIS personnel directing, supervising, or leading groundwater sample collection activities should have a minimum of 2 years of previous groundwater sampling experience. ARCADIS personnel providing assistance to groundwater sample collection and associated activities should have a minimum of 6 months of related experience or an advanced degree in environmental sciences, engineering, hydrogeology, or geology.

The supervisor of the groundwater sampling team will have at least 1 year of previous supervised groundwater sampling experience.

Prior to mobilizing to the field, the groundwater sampling team should review and be thoroughly familiar with relevant site-specific documents including but not limited to the site work plan, field sampling plan, QAPP, HASP, and historical information. Additionally, the groundwater sampling team should review and be thoroughly familiar with documentation provided by equipment manufacturers for all equipment that will be used in the field prior to mobilization.

III. Equipment List

Specific to this activity, the following materials (or equivalent) will be available:

- Health and safety equipment (as required in the site Health and Safety Plan [HASP]).

- Site Plan, well construction records, prior groundwater sampling records (if available).
- Sampling pump, which may consist of one or more of the following:
  - submersible pump (e.g., Grundfos Redi-Flo 2);
  - peristaltic pump (e.g., ISCO Model 150); and/or
  - bladder pump (e.g., Marschalk System 1, QED Well Wizard, etc.).
- Appropriate controller and power source for pump:
  - Submersible and peristaltic pumps require electric power from either a generator or a deep cell battery.
  - Submersible pumps such as Grundfos require a pump controller to run the pump
  - Bladder pumps require a pump controller and a gas source (e.g., air compressor or compressed N_2 or CO_2 gas cylinders).
- Teflon® tubing or Teflon®-lined polyethylene tubing of an appropriate size for the pump being used. For peristaltic pumps, dedicated Tygon® tubing (or other type as specified by the manufacturer) will also be used through the pump apparatus.
- Water-level probe (e.g., Solinist Model 101).
- Water-quality (temperature/pH/specific conductivity/ORP/turbidity/dissolved oxygen) meter and flow-through measurement cell. Several brands may be used, including:
  - YSI 6-Series Multi-Parameter Instrument;
  - Hydrolab Series 3 or Series 4a Multiprobe and Display; and/or
  - Horiba U-10 or U-22 Water Quality Monitoring System.
- Supplemental turbidity meter (e.g., Horiba U-10, Hach 2100P, LaMotte 2020). Turbidity measurements collected with multi-parameter meters have been shown to sometimes be unreliable due to fouling of the optic lens of the

turbidity meter within the flow-through cell. A supplemental turbidity meter will be used to verify turbidity data during purging if such fouling is suspected. Note that industry improvements may eliminate the need for these supplemental measurements in the future.

- Appropriate water sample containers (supplied by the laboratory).
- Appropriate blanks (trip blank supplied by the laboratory).
- 0.45-micron disposable filters (if field filtering is required).
- Large glass mixing container (if sampling with a bailer).
- Teflon® stirring rod (if sampling with a bailer).
- Cleaning equipment.
- Groundwater sampling log (attached) or bound field logbook.

Note that in the future, the client may acquire different makes/models of some of this equipment if the listed makes/models are no longer available, or as a result of general upgrades or additional equipment acquisitions. In the event that the client uses a different make/model of the equipment listed, the client will use an equivalent type of equipment (e.g., pumps, flow-through analytical cells) and note the specific make/model of the equipment used during a sampling event on the groundwater sampling log. In addition, should the client desire to change to a markedly different sampling methodology (e.g., discrete interval samplers, passive diffusion bags, or a yet to be developed technique), the client will submit a proposed SOP for the new methodology for USEPA approval prior to implementing such a change.

The maintenance requirements for the above equipment generally involve decontamination or periodic cleaning, battery charging, and proper storage, as specified by the manufacturer. For operational difficulties, the equipment will be serviced by a qualified technician.

IV. Cautions

If heavy precipitation occurs and no cover over the sampling area and monitoring well can be erected, sampling must be discontinued until adequate cover is provided. Rain water could contaminate groundwater samples.

Do not use permanent marker or felt-tip pens for labels on sample container or sample coolers – use indelible ink. The permanent markers could introduce volatile constituents into the samples.

It may be necessary to field filter some parameters (e.g., metals) prior to collection, depending on preservation, analytical method, and project quality objectives.

Store and/or stage empty and full sample containers and coolers out of direct sunlight.

To mitigate potential cross-contamination, groundwater samples are to be collected in a pre-determined order from least impacted to impacted based on previous analytical data. If no analytical data are available, samples are collected in order of upgradient, then furthest downgradient to source area locations.

Be careful not to over-tighten lids with Teflon liners or septa (e.g., 40 mL vials). Over-tightening can cause the glass to shatter or impair the integrity of the Teflon seal.

V. Health and Safety Considerations

Use caution and appropriate cut resistant gloves when tightening lids to 40 mL vials. These vials can break while tightening and can lacerate hand. Amber vials (thinner glass) are more prone to breakage.

If thunder or lighting is present, discontinue sampling and take cover until 30 minutes have passed after the last occurrence of thunder or lighting.

Use caution when removing well caps as well may be under pressure, cap can dislodge forcefully and cause injury.

Use caution when opening protective casing on stickup wells as wasps frequently nest inside the tops of the covers. Also watch for fire ant mounds near well pads when sampling in the south or western U.S.

VI. Procedure

Groundwater will be purged from the wells using an appropriate pump. Peristaltic pumps will initially be used to purge and sample all wells when applicable. If the depth to water is below the sampling range of a peristaltic pump (approximately 25 feet), submersible pumps or bladder pumps will be used provided the well is constructed with a casing diameter greater than or equal to 2 inches (the minimum well diameter capable of accommodating such pumps). Bladder pumps are preferred over peristaltic and submersible pumps if sampling of VOCs is required to prevent volatilization. For

smaller diameter wells where the depth to water is below the sampling range of a peristaltic pump, alternative sampling methods (i.e., bailing or small diameter bladder pumps) will be used to purge and sample the groundwater. Purge water will be collected and containerized.

1. Calibrate field instruments according to manufacturer procedures for calibration.

2. Measure initial depth to groundwater prior to placement of pumps.

3. Prepare and install pump in well: For submersible and non-dedicated bladder pumps, decontaminate pump according to site decontamination procedures. Non-dedicated bladder pumps will require a new Teflon® bladder and attachment of an air line, sample discharge line, and safety cable prior to placement in the well. Attach the air line tubing to the air port on the top of the bladder pump. Attach the sample discharge tubing to the water port on the top of the bladder pump. Care should be taken not to reverse the air and discharge tubing lines during bladder pump set-up as this could result in bladder failure or rupture. Attach and secure a safety cable to the eyebolt on the top of bladder pump (if present, depending on pump model used). Slowly lower pump, safety cable, tubing, and electrical lines into the well to a depth corresponding to the approximate center of the saturated screen section of the well. Take care to avoid twisting and tangling of safety cable, tubing, and electrical lines while lowering pump into well; twisted and tangled lines could result in the pump becoming stuck in the well casing. Also, make sure to keep tubing and lines from touching the ground or other surfaces while introducing them into the well as this could lead to well contamination. If a peristaltic pump is being used, slowly lower the sampling tubing into the well to a depth corresponding to the approximate center of the saturated screen section of the well. The pump intake or sampling tube must be kept at least 2 feet above the bottom of the well to prevent mobilization of any sediment present in the bottom of the well.

4. Connect the pump to other equipment. If using a bladder pump, the discharge water line should be connected to the bottom inlet port on the flow-through cell connected to the water quality meter. Connect the air line to the pump controller output port. The pump controller should then be connected to a supply line from an air compressor or compressed gas cylinder using an appropriate regulator and air hose. Take care to tighten the regulator connector onto the gas cylinder (if used) to prevent leaks. Teflon tape may be used on the threads of the cylinder to provide a tighter seal. Once the air compressor or gas cylinder is connected to the pump controller, turn on the compressor or open the valve on the cylinder to begin the gas flow. Turn on the pump controller if an on/off switch

is present and verify that all batteries are charged and fully operating before beginning to pump.

5. Measure the water level again with the pump in the well before starting the pump. Start pumping the well at 200 to 500 milliliters (mL) per minute (or at lower site-specific rate if specified). The pump rate should be adjusted to cause little or no water level drawdown in the well (less than 0.3 feet below the initial static depth to water measurement) and the water level should stabilize. The water level should be monitored every 3 to 5 minutes (or as appropriate, lower flow rates may require longer time between readings) during pumping if the well diameter is of sufficient size to allow such monitoring. Care should be taken not to break pump suction or cause entrainment of air in the sample. Record pumping rate adjustments and depths to water. If necessary, pumping rates should be reduced to the minimum capabilities of the pump to avoid pumping the well dry and/or to stabilize indicator parameters. A steady flow rate should be maintained to the extent practicable. Groundwater sampling records from previous sampling events (if available) should be reviewed prior to mobilization to estimate the optimum pumping rate and anticipated drawdown for the well in order to more efficiently reach a stabilized pumping condition.

   If the recharge rate of the well is very low, alternative purging techniques should be used, which will vary based on the well construction and screen position. For wells screened across the water table, the well should be pumped dry and sampling should commence as soon as the volume in the well has recovered sufficiently to permit collection of samples. For wells screened entirely below the water table, the well should be pumped until a stabilized level (which may be below the maximum displacement goal of 0.3 feet) can be maintained and monitoring for stabilization of field indicator parameters can commence. If a lower stabilization level cannot be maintained, the well should be pumped until the drawdown is at a level slightly higher than the bentonite seal above the well screen. Sampling should commence after one well volume has been removed and the well has recovered sufficiently to permit collection of samples.

   During purging, monitor the field indicator parameters (e.g., turbidity, temperature, specific conductance, pH, etc.) every 3 to 5 minutes (or as appropriate). Field indicator parameters will be measured using a flow-through analytical cell or a clean container such as a glass beaker. Record field indicator parameters on the groundwater sampling log. The well is considered stabilized and ready for sample collection when turbidity values remain within 10% (or within 1 NTU if the turbidity reading is less than 10 NTU), the specific conductance and temperature values remain within 3%, and pH remains within 0.1 units for three consecutive readings collected at 3- to 5-minute intervals (or

other appropriate interval, alternate stabilization goals may exist in different geographic regions, consult the site-specific Work Plan for stabilization criteria). If the field indicator parameters do not stabilize within 1 hour of the start of purging, but the groundwater turbidity is below the goal of 50 NTU and the values for all other parameters are within 10%, the well can be sampled. If the parameters have stabilized but the turbidity is not in the range of the 50 NTU goal, the pump flow rate should be decreased to a minimum rate of 100 mL/min to reduce turbidity levels as low as possible. If dissolved oxygen values are not within acceptable range for the temperature of groundwater (Attachment 1), then check for and remove air bubbles on probe or in tubing. If the dissolved oxygen value is 0.00 or less, then the meter should be serviced and re-calibrated.

During extreme weather conditions, stabilization of field indicator parameters may be difficult to obtain. Modifications to the sampling procedures to alleviate these conditions (e.g., measuring the water temperature in the well adjacent to the pump intake) will be documented in the field notes. If other field conditions exist that preclude stabilization of certain parameters, an explanation of why the parameters did not stabilize will also be documented in the field logbook.

6. Complete the sample label and cover the label with clear packing tape to secure the label onto the container.

7. After the indicator parameters have stabilized, collect groundwater samples by diverting flow out of the unfiltered discharge tubing into the appropriate labeled sample container. If a flow-through analytical cell is being used to measure field parameters, the flow-through cell should be disconnected after stabilization of the field indicator parameters and prior to groundwater sample collection. Under no circumstances should analytical samples be collected from the discharge of the flow-through cell. When the container is full, tightly screw on the cap. Samples should be collected in the following order: VOCs, TOC, SVOCs, metals and cyanide, and others (or other order as defined in the site-specific Work Plan).

8. If sampling for total and filtered metals and/or PCBs, a filtered and unfiltered sample will be collected. Install an in-line, disposable 0.45-micron particle filter on the discharge tubing after the appropriate unfiltered groundwater sample has been collected. Continue to run the pump until an initial volume of “flush” water has been run through the filter in accordance with the manufacturer’s directions (generally 100 to 300 mL). Collect filtered groundwater sample by diverting flow out of the filter into the appropriately labeled sample container. When the container is full, tightly screw on the cap.

9. Secure with packing material and store at 4°C in an insulated transport container provided by the laboratory.

10. Record on the groundwater sampling log or bound field logbook the time sampling procedures were completed, any pertinent observations of the sample (e.g., physical appearance, and the presence or lack of odors or sheens), and the values of the stabilized field indicator parameters as measured during the final reading during purging (Attachment 2 – Example Sampling Log).

11. Turn off the pump and air compressor or close the gas cylinder valve if using a bladder pump set-up. Slowly remove the pump, tubing, lines, and safety cable from the well. Do not allow the tubing or lines to touch the ground or any other surfaces which could contaminate them. .

12. If tubing is to be dedicated to a well, it should be folded to a length that will allow the well to be capped and also facilitate retrieval of the tubing during later sampling events. A length of rope or string should be used to tie the tubing to the well cap. Alternatively, if tubing and safety line are to be saved and reused for sampling the well at a later date they may be coiled neatly and placed in a clean plastic bag that is clearly labeled with the well ID. Make sure the bag is tightly sealed before placing it in storage.

13. Secure the well and properly dispose of personal protective equipment (PPE) and disposable equipment.

14. Complete the procedures for packaging, shipping, and handling with associated chain-of-custody.

15. Complete decontamination procedures for flow-through analytical cell and submersible or bladder pump, as appropriate.

16. At the end of the day, perform calibration check of field instruments.

If it is not technically feasible to use the low-flow sampling method, purging and sampling of monitoring wells may be conducted using the bailer method as outlined below:

1. Don appropriate PPE (as required by the HASP).

2. Place plastic sheeting around the well.

3. Clean sampling equipment.

4. Open the well cover while standing upwind of the well. Remove well cap and place on the plastic sheeting. Insert PID probe approximately 4 to 6 inches into the casing or the well headspace and cover with gloved hand. Record the PID reading in the field log. If the well headspace reading is less than 5 PID units, proceed; if the headspace reading is greater than 5 PID units, screen the air within the breathing zone. If the breathing zone reading is less than 5 PID units, proceed. If the PID reading in the breathing zone is above 5 PID units, move upwind from well for 5 minutes to allow the volatiles to dissipate. Repeat the breathing zone test. If the reading is still above 5 PID units, don appropriate respiratory protection in accordance with the requirements of the HASP. Record all PID readings. For wells that are part of the regular weekly monitoring program and prior PID measurements have not resulted in a breathing zone reading above 5 PID units, PID measurements will be taken monthly.

5. Measure the depth to water and determine depth of well by examining drilling log data or by direct measurement. Calculate the volume of water in the well (in gallons) by using the length of the water column (in feet), multiplying by 0.163 for a 2-inch well or by 0.653 for a 4-inch well. For other well diameters, use the formula:

   Volume (in gallons) = • TIMES well radius (in feet) squared TIMES length of water column (in feet) TIMES 7.481 (gallons per cubic foot)

6. Measure a length of rope or twine at least 10 feet greater than the total depth of the well. Secure one end of the rope to the well casing and secure the other end to the bailer. Test the knots and make sure the rope will not loosen. Check bailers so that all parts are intact and will not be lost in the well.

7. Lower bailer into well and remove one well volume of water. Contain all water in appropriate containers.

8. Monitor the field indicator parameters (e.g., turbidity, temperature, specific conductance, and pH). Measure field indicator parameters using a clean container such as a glass beaker or sampling cups provided with the instrument. Record field indicator parameters on the groundwater sampling log.

9. Repeat Steps 7 and 8 until three or four well volumes have been removed. Examine the field indicator parameter data to determine if the parameters have stabilized. The well is considered stabilized and ready for sample collection when turbidity values remain within 10% (or within 1 NTU if the turbidity reading is less than 10 NTU), the specific conductance and temperature values remain

within 3%, and pH remains within ±0.1 units for three consecutive readings collected once per well volume removed.

10. If the field indicator parameters have not stabilized, remove a maximum of five well volumes prior to sample collection. Alternatively, five well volumes may be removed without measuring the field indicator parameters.

11. If the recharge rate of the well is very low, wells screened across the water table may be bailed dry and sampling should commence as soon as the volume in the well has recovered sufficiently to permit collection of samples. For wells screened entirely below the water table, the well should only be bailed down to a level slightly higher than the bentonite seal above the well screen. The well should not be bailed completely dry, to maintain the integrity of the seal. Sampling should commence as soon as the well volume has recovered sufficiently to permit sample collection.

12. Following purging, allow water level in well to recharge to a sufficient level to permit sample collection.

13. Complete the sample label and cover the label with clear packing tape to secure the label onto the container.

14. Slowly lower the bailer into the screened portion of the well and carefully retrieve a filled bailer from the well causing minimal disturbance to the water and any sediment in the well.

15. The sample collection order (as appropriate) will be as follows:

    a. VOCs;

    b TOC;

    c. SVOCs;

    d. metals and cyanide; and

    e. others.

16. When sampling for volatiles, collect water samples directly from the bailer into 40-mL vials with Teflon®-lined septa.

17. For other analytical samples, remove the cap from the large glass mixing container and slowly empty the bailer into the large glass mixing container. The sample for dissolved metals and/or filtered PCBs should either be placed directly from the bailer into a pressure filter apparatus or pumped directly from the bailer with a peristaltic pump, through an in-line filter, into the pre-preserved sample bottle.

18. Continue collecting samples until the mixing container contains a sufficient volume for all laboratory samples.

19. Mix the entire sample volume with the Teflon® stirring rod and transfer the appropriate volume into the laboratory jar(s). Secure the sample jar cap(s) tightly.

20. If sampling for total and filtered metals and/or PCBs, a filtered and unfiltered sample will be collected. Sample filtration for the filtered sample will be performed in the field using a peristaltic pump prior to preservation. Install new medical-grade silicone tubing in the pump head. Place new Teflon® tubing into the sample mixing container and attach to the intake side of pump tubing. Attach (clamp) a new 0.45-micron filter (note the filter flow direction). Turn the pump on and dispense the filtered liquid directly into the laboratory sample bottles.

21. Secure with packing material and store at 4°C in an insulated transport container provided by the laboratory.

22. After sample containers have been filled, remove one additional volume of groundwater. Measure the pH, temperature, turbidity, and conductivity. Record on the groundwater sampling log or bound field logbook the time sampling procedures were completed, any pertinent observations of the sample (e.g., physical appearance, and the presence or lack of odors or sheens), and the values of the field indicator parameters.

23. Remove bailer from well, secure well, and properly dispose of PPE and disposable equipment.

24. If a bailer is to be dedicated to a well, it should be secured inside the well above the water table, if possible. Dedicated bailers should be tied to the well cap so that inadvertent loss of the bailer will not occur when the well is opened.

25. Complete the procedures for packaging, shipping, and handling with associated chain-of-custody.

VII. Waste Management

Materials generated during groundwater sampling activities, including disposable equipment, will be placed in appropriate containers. Containerized waste will be disposed of by the client consistent with the procedures identified in the HASP.

VIII. Data Recording and Management

Initial field logs and chain-of-custody records will be transmitted to the ARCADIS PM at the end of each day unless otherwise directed by the PM. The groundwater team leader retains copies of the groundwater sampling logs.

IX. Quality Assurance

In addition to the quality control samples to be collected in accordance with this SOP, the following quality control procedures should be observed in the field:

- Collect samples from monitoring wells in order of increasing concentration, to the extent known based on review of historical site information if available.
- Equipment blanks should include the pump and tubing (if using disposable tubing) or the pump only (if using tubing dedicated to each well).
- Collect equipment blanks after wells with higher concentrations (if known) have been sampled.
- Operate all monitoring instrumentation in accordance with manufacturer's instructions and calibration procedures. Calibrate instruments at the beginning of each day and verify the calibration at the end of each day. Record all calibration activities in the field notebook.
- Clean all groundwater sampling equipment prior to use in the first well and after each subsequent well using procedures for equipment decontamination.

X. References

United States Environmental Protection Agency (USEPA). 1986. RCRA Groundwater Monitoring Technical Enforcement Guidance Document (September 1986).

USEPA Region II. 1998. *Ground Water Sampling Procedure Low Stress (Low Flow) Purging and Sampling*.

USEPA. 1991. Handbook Groundwater, Volume II Methodology, Office of Research and Development, Washington, DC. USEPN62S, /6-90/016b (July, 1991).

U.S. Geological Survey (USGS). 1977. National Handbook of Recommended Methods for Water-Data Acquisition: USGS Office of Water Data Coordination. Reston, Virginia.

Attachment 1

Groundwater Sampling Log

ARCADIS
Infrastructure, environment, facilities

Low-Flow Groundwater Sampling Log

Project _____

Project Number _____ **Site Location** _____ **Well ID** _____

Date _____ **Sampled By** _____

Sampling Time _____ **Recorded By** _____

Weather _____ **Coded Replicate No.** _____

Instrument Identification

Water Quality Meter(s) _____ **Serial #** _____

Casing Material _____ **Purge Method** _____

Casing Diameter _____ **Screen Interval (ft bmp)** **Top** _____ **Bottom** _____

Sounded Depth (ft bmp) _____ **Pump Intake Depth (ft bmp)** _____ _____

Depth to Water (ft bmp) _____ **Purge Time** **Start** _____ **Finish** _____

Field Parameter Measurements During Purging

Time	Minutes Elasped	Flow Rate (mL/min)	Volume Purged	Temp (°C)	pH (s.u.)	Conductivity (umhos or mS/cm) 1)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Depth to Water (ft bmp)

Collected Sample Condition **Color**_____ **Odor**_____ **Appearance**_____

Parameter	Container	No.	Preservative

PID Reading _____

Comments _____

1) Circle one unit type

Attachment 2

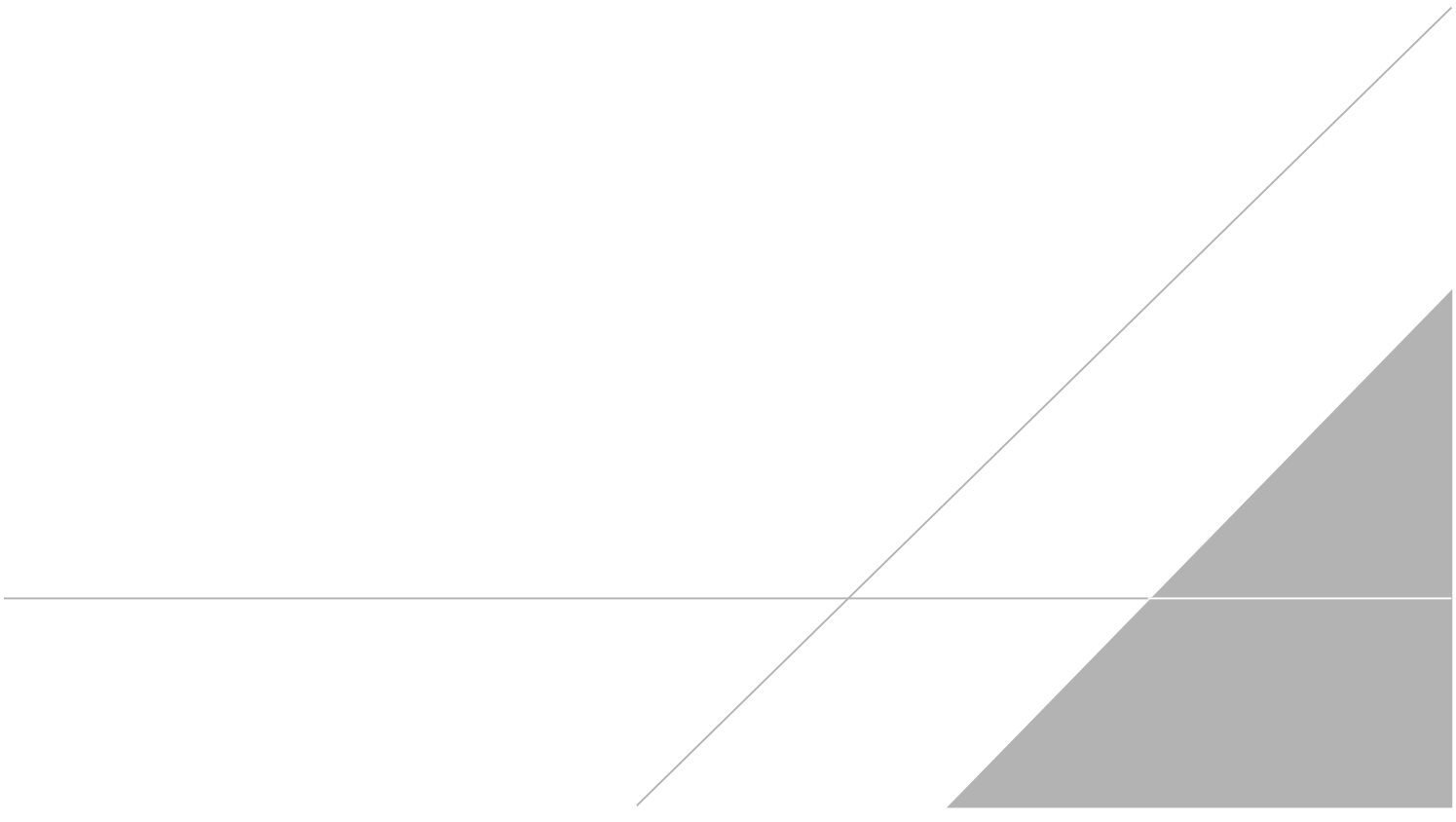
Oxygen Solubility in Fresh Water

Temperature (degrees C)	**Dissolved Oxygen** (mg/L)
0	14.6
1	14.19
2	13.81
3	13.44
4	13.09
5	12.75
6	12.43
7	12.12
8	11.83
9	11.55
10	11.27
11	11.01
12	10.76
13	10.52
14	10.29
15	10.07
16	9.85
17	9.65
18	9.45
19	9.26
20	9.07
21	8.9
22	8.72
23	8.56
24	8.4
25	8.24
26	8.09
27	7.95
28	7.81
29	7.67
30	7.54
31	7.41
32	7.28
33	7.16
34	7.05
35	6.93

Reference: Vesilind, P.A., *Introduction to Environmental Engineering*, PWS Publishing Company, Boston, 468 pages (1996).

APPENDIX C

Field Data Sheets



March 15, 2021 — 1Q21 GWM Day 1

K Zaubi
T. Bryant
35°F, Cloud

0830 - Arcadis arrives on site. Don PPE. Prepare carts for sampling.

0850 - H2S tailgate.

0920 - Meet BNSF Flagger at BNSF ROW. Stage equipment. Perform BNSF H2S tailgate.

0930 - Begin Sampling BNSF ROW wells

1024 - Ophélie Encelle on site (out in ROW) to sign HASP and meet DOE.

Sampled MW-210 @ 1051

Sampled MW-209 @ 1055

1120 - Trevor to continue sampling. Riley to uncover wells buried by gravel (MW-200 up)

Sampled MW-211 @ 1200

1310 Begin Ganging

Well ID	TIME	DTW ft btoc	DTP ft btoc	PID	NOTES
MW-202	1315	11.56	—	0.0	
MW-207	1318	11.82	—	0.0	
MW-206	1326	12.06	—	0.0	
MW-202	1329	9.81	—	0.0	
MW-200	1333	9.06	—	0.0	
MW-201	1337	9.81	—	0.0	
MW-203	1342	12.83	—	0.0	
MW-204	1349	18.70	—	0.0	
MW-205	1357	22.67	—	0.0	
MW-211	1414	9.02	—	0.0	
MW-210	1416	8.81	—	0.4	
MW-209	1420	9.53	—	0.0	
MW-01A-R	1432	12.88	—	72.2	HCLO
MW-30	1439	—	—	2.1	No DTW due to sludge

Low-Flow Test Report:

Test Date / Time: 3/15/2021 10:04:38 AM
Project: Seattle Terminal 1Q21
Operator Name: KZ

Location Name: MW-209 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 3 ft** **Total Depth: 18 ft** **Initial Depth to Water: 9.25 ft**	**Pump Type: Geotech Geopump Series 2** **Tubing Type: Polyethylene 0.170 x 1/4** **Pump Intake From TOC: 9.75 ft** **Estimated Total Volume Pumped: 6750 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 150 ml/min** **Final Draw Down: 0.03 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 466586**

Test Notes:

Weather Conditions:
40, overcast

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
3/15/2021 10:04 AM	00:00	6.50 pH	10.53 °C	386.65 µS/cm	2.44 mg/L	25.18 NTU	86.3 mV	9.25 ft	150.00 ml/min
3/15/2021 10:07 AM	03:00	6.57 pH	10.31 °C	392.03 µS/cm	0.76 mg/L	10.33 NTU	58.5 mV	9.25 ft	150.00 ml/min
3/15/2021 10:10 AM	06:00	6.59 pH	10.33 °C	391.52 µS/cm	0.53 mg/L	3.20 NTU	41.1 mV	9.25 ft	150.00 ml/min
3/15/2021 10:13 AM	09:00	6.61 pH	10.50 °C	396.21 µS/cm	0.38 mg/L	12.30 NTU	29.6 mV	9.25 ft	150.00 ml/min
3/15/2021 10:16 AM	12:00	6.63 pH	10.62 °C	399.54 µS/cm	0.38 mg/L	2.12 NTU	19.4 mV	9.25 ft	150.00 ml/min
3/15/2021 10:19 AM	15:00	6.66 pH	10.69 °C	412.05 µS/cm	0.33 mg/L	2.37 NTU	10.8 mV	9.25 ft	150.00 ml/min
3/15/2021 10:22 AM	18:00	6.69 pH	10.90 °C	414.37 µS/cm	0.24 mg/L	0.93 NTU	1.5 mV	9.25 ft	150.00 ml/min
3/15/2021 10:25 AM	21:00	6.71 pH	10.90 °C	423.39 µS/cm	0.21 mg/L	0.82 NTU	-4.9 mV	9.25 ft	150.00 ml/min
3/15/2021 10:28 AM	24:00	6.73 pH	10.88 °C	429.43 µS/cm	0.19 mg/L	0.63 NTU	-11.3 mV	9.25 ft	150.00 ml/min
3/15/2021 10:31 AM	27:00	6.76 pH	11.02 °C	439.87 µS/cm	0.19 mg/L	0.13 NTU	-17.7 mV	9.25 ft	150.00 ml/min
3/15/2021 10:34 AM	30:00	6.79 pH	10.87 °C	440.44 µS/cm	0.20 mg/L	0.00 NTU	-23.9 mV	9.25 ft	150.00 ml/min
3/15/2021 10:37 AM	33:00	6.80 pH	10.83 °C	443.75 µS/cm	0.15 mg/L	0.17 NTU	-28.6 mV	9.25 ft	150.00 ml/min

3/15/2021 10:40 AM	36:00	6.80 pH	10.94 °C	445.56 µS/cm	0.13 mg/L	0.48 NTU	-32.3 mV	9.25 ft	150.00 ml/min
3/15/2021 10:43 AM	39:00	6.81 pH	11.07 °C	449.43 µS/cm	0.14 mg/L	0.00 NTU	-35.7 mV	9.25 ft	150.00 ml/min
3/15/2021 10:46 AM	42:00	6.82 pH	11.07 °C	448.54 µS/cm	0.12 mg/L	0.00 NTU	-38.7 mV	9.25 ft	150.00 ml/min
3/15/2021 10:49 AM	45:00	6.84 pH	10.91 °C	450.92 µS/cm	0.11 mg/L	0.00 NTU	-41.0 mV	9.25 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-209	Sample Time: 1055 Methodology: Groundwater samples were collected using low flow purge techniques with dedicated tubing, a peristaltic pump, and an Aquatroll 600 multimeter. The polyethylene tubing was in each well such that the intake depth was within 6 inches of the water level. All wells were sampled within their screen interval. Samples were immediately stored on ice to be sampled for BTEX, DTP, HO and CPAHs.

Low-Flow Test Report:

Test Date / Time: 3/15/2021 10:02:25 AM
Project: Seattle Terminal 1Q21
Operator Name: TB

Location Name: MW-210 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 3 ft** **Total Depth: 18 ft** **Initial Depth to Water: 7.86 ft**	**Pump Type: Geotech Geopump Series 2** **Tubing Type: Polyethylene 0.170 by 0.25** **Pump Intake From TOC: 8.36 ft** **Estimated Total Volume Pumped: 6750 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 150 ml/min** **Final Draw Down: 3.35 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 467545**

Test Notes:

Weather Conditions:
Cloudy, 38

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
3/15/2021 10:02 AM	00:00	7.44 pH	9.74 °C	235.09 µS/cm	11.68 mg/L	81.09 NTU	119.7 mV	8.03 ft	150.00 ml/min
3/15/2021 10:05 AM	03:00	6.19 pH	10.20 °C	222.29 µS/cm	4.14 mg/L	3.97 NTU	105.4 mV	8.25 ft	150.00 ml/min
3/15/2021 10:08 AM	06:00	6.19 pH	10.34 °C	224.37 µS/cm	2.76 mg/L	24.43 NTU	98.0 mV	8.57 ft	150.00 ml/min
3/15/2021 10:11 AM	09:00	6.20 pH	10.39 °C	223.92 µS/cm	2.35 mg/L	8.83 NTU	94.8 mV	8.74 ft	150.00 ml/min
3/15/2021 10:14 AM	12:00	6.21 pH	10.45 °C	225.63 µS/cm	2.31 mg/L	0.00 NTU	92.3 mV	8.93 ft	150.00 ml/min
3/15/2021 10:17 AM	15:00	6.23 pH	10.34 °C	233.71 µS/cm	4.17 mg/L	53.62 NTU	84.3 mV	9.13 ft	150.00 ml/min
3/15/2021 10:20 AM	18:00	6.24 pH	10.77 °C	227.71 µS/cm	2.87 mg/L	225.32 NTU	78.5 mV	9.32 ft	150.00 ml/min
3/15/2021 10:23 AM	21:00	6.26 pH	10.85 °C	232.40 µS/cm	2.15 mg/L	87.53 NTU	68.7 mV	9.52 ft	150.00 ml/min
3/15/2021 10:26 AM	24:00	6.22 pH	10.80 °C	224.85 µS/cm	3.50 mg/L	793.80 NTU	66.1 mV	9.98 ft	150.00 ml/min
3/15/2021 10:29 AM	27:00	6.29 pH	10.92 °C	222.87 µS/cm	3.46 mg/L	43.81 NTU	59.7 mV	10.28 ft	150.00 ml/min
3/15/2021 10:32 AM	30:00	6.29 pH	11.00 °C	219.84 µS/cm	3.11 mg/L	73.22 NTU	57.3 mV	10.28 ft	150.00 ml/min
3/15/2021 10:35 AM	33:00	6.22 pH	10.87 °C	211.60 µS/cm	3.97 mg/L	241.69 NTU	61.5 mV	10.28 ft	150.00 ml/min

3/15/2021 10:38 AM	36:00	6.35 pH	10.32 °C	86.69 µS/cm	6.89 mg/L	384.19 NTU	57.9 mV	10.71 ft	150.00 ml/min
3/15/2021 10:41 AM	39:00	6.27 pH	10.79 °C	83.42 µS/cm	3.26 mg/L	146.93 NTU	57.2 mV	10.97 ft	150.00 ml/min
3/15/2021 10:44 AM	42:00	6.27 pH	11.06 °C	82.56 µS/cm	2.92 mg/L	398.48 NTU	57.7 mV	11.51 ft	150.00 ml/min
3/15/2021 10:47 AM	45:00	6.27 pH	11.15 °C	82.72 µS/cm	2.69 mg/L	139.85 NTU	58.5 mV	11.21 ft	150.00 ml/min

Samples

Sample ID:	Description:
MW-210	Sample Time: 10:51 Methodology: see notes on MW-209

Low-Flow Test Report:

Test Date / Time: 3/15/2021 11:33:51 AM
Project: Seattle Terminal 1Q21
Operator Name: TB

Location Name: MW-211 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 3 ft** **Total Depth: 18 ft** **Initial Depth to Water: 8.79 ft**	**Pump Type: Geotech Geopump Series 2** **Tubing Type: Polyethylene 0.170 by 0.25** **Pump Intake From TOC: 9.29 ft** **Estimated Total Volume Pumped: 3600 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 150 ml/min** **Final Draw Down: 0.05 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 467545**

Test Notes:

Weather Conditions:
Partly sunny, 42

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
3/15/2021 11:33 AM	00:00	7.09 pH	11.37 °C	600.83 µS/cm	5.58 mg/L	35.66 NTU	56.0 mV	8.79 ft	150.00 ml/min
3/15/2021 11:36 AM	03:00	7.55 pH	11.80 °C	604.41 µS/cm	0.36 mg/L	0.00 NTU	4.9 mV	8.80 ft	150.00 ml/min
3/15/2021 11:39 AM	06:00	7.58 pH	12.04 °C	600.01 µS/cm	0.26 mg/L	0.00 NTU	-11.8 mV	8.81 ft	150.00 ml/min
3/15/2021 11:42 AM	09:00	7.58 pH	12.07 °C	593.38 µS/cm	0.22 mg/L	0.00 NTU	-17.3 mV	8.82 ft	150.00 ml/min
3/15/2021 11:45 AM	12:00	7.58 pH	12.13 °C	571.10 µS/cm	0.19 mg/L	0.00 NTU	-16.7 mV	8.83 ft	150.00 ml/min
3/15/2021 11:48 AM	15:00	7.57 pH	12.05 °C	560.99 µS/cm	0.18 mg/L	0.00 NTU	-15.6 mV	8.84 ft	150.00 ml/min
3/15/2021 11:51 AM	18:00	7.57 pH	12.08 °C	526.37 µS/cm	0.16 mg/L	0.00 NTU	-17.6 mV	8.84 ft	150.00 ml/min
3/15/2021 11:54 AM	21:00	7.57 pH	12.08 °C	519.63 µS/cm	0.16 mg/L	0.00 NTU	-19.6 mV	8.84 ft	150.00 ml/min
3/15/2021 11:57 AM	24:00	7.57 pH	11.97 °C	519.28 µS/cm	0.16 mg/L	0.00 NTU	-21.6 mV	8.84 ft	150.00 ml/min

Samples

Sample ID:	Description:

MW-211	Sample Time: 12:00 Methodology: see notes for MW-209

Low-Flow Test Report:

Test Date / Time: 3/16/2021 1:31:22 PM
Project: Seattle Terminal 1Q21
Operator Name: TB

Location Name: MW-70R **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 12 ft** **Top of Screen: 4 ft** **Total Depth: 16 ft** **Initial Depth to Water: 11.66 ft**	**Pump Type: Geotech Geopump Series 2** **Tubing Type: Polyethylene 0.170 by 0.25** **Pump Intake From TOC: 12.16 ft** **Estimated Total Volume Pumped: 2770 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 150 ml/min** **Final Draw Down: 0.25 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 467545**

Test Notes:

Weather Conditions:
Sunny, 45

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
3/16/2021 1:31 PM	00:00	7.15 pH	10.71 °C	13,402 µS/cm	4.75 mg/L		147.9 mV	11.66 ft	150.00 ml/min
3/16/2021 1:34 PM	03:00	7.23 pH	11.40 °C	12,755 µS/cm	0.67 mg/L		114.8 mV	11.79 ft	150.00 ml/min
3/16/2021 1:37 PM	06:00	7.24 pH	11.67 °C	12,676 µS/cm	0.58 mg/L	0.00 NTU	100.9 mV	11.81 ft	150.00 ml/min
3/16/2021 1:40 PM	09:28	7.23 pH	11.83 °C	11,534 µS/cm	0.83 mg/L	16.03 NTU	91.3 mV	11.83 ft	150.00 ml/min
3/16/2021 1:43 PM	12:28	7.24 pH	11.91 °C	11,308 µS/cm	0.52 mg/L	0.00 NTU	84.5 mV	11.85 ft	150.00 ml/min
3/16/2021 1:46 PM	15:28	7.24 pH	11.97 °C	11,270 µS/cm	0.51 mg/L	0.00 NTU	79.5 mV	11.89 ft	150.00 ml/min
3/16/2021 1:49 PM	18:28	7.25 pH	12.03 °C	11,060 µS/cm	0.49 mg/L	0.00 NTU	75.8 mV	11.91 ft	150.00 ml/min

Samples

Sample ID:	Description:

MW-70R	Sample Time: 1350 Methodology: See notes for MW-209 Additional sample: DUP-1

June 9 2021 Seattle Terminal 2Q21 GWM Day 3

DS Gilbert
J Sepiol
Sunny

0900 - Arrive on site, don PPE, conduct H+S tailgate

0930 - BNSF in process of replacing broad st crossing call Sam to inform. Instructed to keep him updated with what the flagger determine

1000 - Checked MW-201 with a bailer. Bailer clean with no product observed. well confirmed to have no product.

1030 - called and met with BNSF flagger, Wells are accessible via next crossing to the North

1045 - call Sam to inform of new parking location and BNSF access point. Also discussed the clean bailer check of MW-201

1055 - Relocate vehicles to BNSF property.

1107 - Begin gauging round

Well ID	Time	DTW ft btoc	DTP ft btoc	PID	Notes
MW-70R	1107	12.49	—	0.0	
MW-207	1110	13.03	—	0.0	
MW-206	1115	12.94	—	0.6	
MW-202	1121	10.41	—	0.0	
MW-201	1126	9.05	—	0.0	
MW-200	1131	9.40	—	0.0	
MW-203	1136	13.41	—	0.0	
MW-204	1141	19.26	—	0.0	
MW-205	1149	23.23	—	0.0	
MW-61A-R	1202	14.70	14.70	175	sheen, product on probe
MW-30	1208	14.00	—	0.0	weathered product on probe
MW-209	1243	10.14	—	0.0	
MW-210	1249	9.29	—	0.0	
MW-211	1254	9.66	—	0.0	

1215 Meet with BNSF flagger for tailgate, prepare for sampling

Low-Flow Test Report:

Test Date / Time: 6/7/2021 4:06:56 PM
Project: Seattle Terminal 2Q21
Operator Name: Daniel Sly Gilbert

Location Name: MW-200 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 18.9 ft** **Top of Screen: 5 ft** **Total Depth: 23.9 ft** **Initial Depth to Water: 9.6 m**	**Pump Type: Geotechnical Geopump Series 2** **Tubing Type: Polyethylene** **Pump Intake From TOC: 10 ft** **Estimated Total Volume Pumped: 9000 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.02 m**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 466586**

Test Notes:

Weather Conditions:
Sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10		
6/7/2021 4:06 PM	00:00	7.14 pH	16.99 °C	2,600.5 µS/cm	2.67 mg/L	140.46 NTU	-55.3 mV	9.60 m	200.00 ml/min
6/7/2021 4:09 PM	03:00	7.02 pH	15.91 °C	1,903.2 µS/cm	0.72 mg/L	45.40 NTU	-71.7 mV	9.60 m	200.00 ml/min
6/7/2021 4:12 PM	06:00	6.96 pH	16.06 °C	1,533.2 µS/cm	0.34 mg/L	38.60 NTU	-76.2 mV	9.60 m	200.00 ml/min
6/7/2021 4:15 PM	09:00	6.95 pH	15.92 °C	1,470.4 µS/cm	0.29 mg/L	23.85 NTU	-82.1 mV	9.60 m	200.00 ml/min
6/7/2021 4:18 PM	12:00	6.95 pH	16.04 °C	1,000.0 µS/cm	0.25 mg/L	98.67 NTU	-83.5 mV	9.60 m	200.00 ml/min
6/7/2021 4:21 PM	15:00	6.95 pH	15.91 °C	1,257.3 µS/cm	0.23 mg/L	0.13 NTU	-88.4 mV	9.60 m	200.00 ml/min
6/7/2021 4:24 PM	18:00	6.96 pH	15.80 °C	1,290.4 µS/cm	0.26 mg/L	2.14 NTU	-92.0 mV	9.60 m	200.00 ml/min
6/7/2021 4:27 PM	21:00	6.96 pH	15.90 °C	1,194.2 µS/cm	0.23 mg/L	6.23 NTU	-94.2 mV	9.60 m	200.00 ml/min
6/7/2021 4:30 PM	24:00	6.97 pH	15.78 °C	1,210.2 µS/cm	0.23 mg/L	39.18 NTU	-96.2 mV	9.60 m	200.00 ml/min
6/7/2021 4:33 PM	27:00	6.98 pH	16.04 °C	1,486.9 µS/cm	0.22 mg/L	36.76 NTU	-97.9 mV	9.60 m	200.00 ml/min
6/7/2021 4:36 PM	30:00	6.99 pH	16.03 °C	969.45 µS/cm	0.25 mg/L	48.61 NTU	-100.2 mV	9.60 m	200.00 ml/min
6/7/2021 4:39 PM	33:00	7.00 pH	16.05 °C	681.55 µS/cm	0.27 mg/L	49.39 NTU	-101.6 mV	9.60 m	200.00 ml/min

6/7/2021 4:42 PM	36:00	7.01 pH	16.00 °C	1,697.0 µS/cm	0.26 mg/L	42.52 NTU	-103.6 mV	9.60 m	200.00 ml/min
6/7/2021 4:45 PM	39:00	7.01 pH	15.98 °C	1,398.1 µS/cm	0.22 mg/L	4.98 NTU	-105.4 mV	9.60 m	200.00 ml/min
6/7/2021 4:48 PM	42:00	7.02 pH	15.93 °C	1,253.7 µS/cm	0.20 mg/L	5.20 NTU	-106.6 mV	9.60 m	200.00 ml/min
6/7/2021 4:51 PM	45:00	7.03 pH	16.10 °C	1,101.0 µS/cm	0.19 mg/L	415.61 NTU	-109.7 mV	9.60 m	200.00 ml/min

Samples

Sample ID:	Description:
MW-200	Sample time: 17:00 Parameters did not stabilize after 45 minutes Methodology: Groundwater samples were collected using low flow purge techniques with dedicated tubin, a peristaltic pump, and an Aquatroll 600 multimeter. The polyethylene tubing was in each well such that the intake depth was within 6 inches of the water level. All wells were sampled within their screened interval. Samples were immediately stored on ice.

Low-Flow Test Report:

Test Date / Time: 6/8/2021 12:42:45 PM
Project: Seattle Terminal (4)
Operator Name: Joseph Sepiol

Location Name: MW-201 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 14.8 ft** **Top of Screen: 5 ft** **Total Depth: 19.8 ft** **Initial Depth to Water: 10.21 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Pump Intake From TOC: 10.64 ft** **Estimated Total Volume Pumped: 600 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 20 ml/min** **Final Draw Down: 10.45 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 467545**

Test Notes:
Methodology: Groundwater samples were collected using low flow purge techniques with dedicated tubing,a peristaltic pump,and an Aquatroll 600 Multimeter. The polyethylene tubing was in each well such that the intake depth was within 6 inches of the water level. All wells were sampled within their screened interval. Samples were immediately stored on ice to be sampled for BTEX, DTP, HO,and CPAHs.

PID 0.0

Weather Conditions:
60F partly cloudy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 0.1	
6/8/2021 12:42 PM	00:00	6.79 pH	21.11 °C	1,163.6 µS/cm	2.60 mg/L	330.57 NTU	-13.7 mV		20.00 ml/min
6/8/2021 12:45 PM	03:00	6.70 pH	20.64 °C	1,000.8 µS/cm	0.36 mg/L	303.03 NTU	-17.9 mV		20.00 ml/min
6/8/2021 12:48 PM	06:00	6.70 pH	19.94 °C	956.61 µS/cm	0.23 mg/L	287.82 NTU	-20.2 mV		20.00 ml/min
6/8/2021 12:51 PM	09:00	6.70 pH	19.50 °C	922.90 µS/cm	0.20 mg/L		-17.9 mV		20.00 ml/min
6/8/2021 12:54 PM	12:00	6.69 pH	19.22 °C	914.91 µS/cm	0.20 mg/L		-15.3 mV		20.00 ml/min
6/8/2021 12:57 PM	15:00	6.70 pH	19.09 °C	908.95 µS/cm	0.20 mg/L		-13.4 mV		20.00 ml/min
6/8/2021 1:00 PM	18:00	6.70 pH	18.98 °C	912.10 µS/cm	0.19 mg/L		-11.7 mV		20.00 ml/min
6/8/2021 1:03 PM	21:00	6.70 pH	18.87 °C	902.62 µS/cm	0.18 mg/L		-11.6 mV		20.00 ml/min
6/8/2021 1:06 PM	24:00	6.70 pH	18.81 °C	902.06 µS/cm	0.16 mg/L		-11.4 mV		20.00 ml/min
6/8/2021 1:09 PM	27:00	6.71 pH	18.80 °C	899.86 µS/cm	0.16 mg/L		-10.4 mV		20.00 ml/min

6/8/2021 1:12 PM	30:00	6.71 pH	18.77 °C	897.17 µS/cm	0.16 mg/L		-9.2 mV		20.00 ml/min

Samples

Sample ID:	Description:
MW-201	

Low-Flow Test Report:

Test Date / Time: 6/8/2021 10:52:55 AM
Project: Seattle Terminal (3)
Operator Name: Joseph Sepiol

Location Name: MW-202 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 19.55 ft** **Top of Screen: 7.8 ft** **Total Depth: 27.35 ft** **Initial Depth to Water: 10.14 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Pump Intake From TOC: 10.64 ft** **Estimated Total Volume Pumped: 613.333 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 20 ml/min** **Final Draw Down: 10.45 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 467545**

Test Notes:
PID 0.0

Methodology: Groundwater samples were collected using low flow purge techniques with dedicated tubing, a peristaltic pump, and an Aquatroll 600 multimeter. The polyethylene tubing was in each well such that the intake depth was within 6 inches of the water level. All wells were sampled within their screen interval. Samples were immediately stored on ice to be sampled for BTEX, DTP, HO, and CPAHs.

Weather Conditions:
57F cloudy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 0.1	
6/8/2021 10:52 AM	00:00	6.76 pH	19.15 °C	27,244 µS/cm	2.51 mg/L	0.00 NTU	27.6 mV		20.00 ml/min
6/8/2021 10:55 AM	03:00	6.77 pH	16.93 °C	26,524 µS/cm	0.87 mg/L	0.00 NTU	6.1 mV		20.00 ml/min
6/8/2021 10:58 AM	06:00	6.81 pH	16.08 °C	26,756 µS/cm	0.27 mg/L	0.00 NTU	-6.3 mV		20.00 ml/min
6/8/2021 11:02 AM	09:40	6.81 pH	15.49 °C	27,035 µS/cm	0.26 mg/L	4.37 NTU	-10.8 mV		20.00 ml/min
6/8/2021 11:05 AM	12:40	6.85 pH	15.22 °C	25,371 µS/cm	0.18 mg/L	0.86 NTU	-18.1 mV		20.00 ml/min
6/8/2021 11:08 AM	15:40	6.86 pH	15.05 °C	25,290 µS/cm	0.16 mg/L	0.55 NTU	-21.3 mV		20.00 ml/min
6/8/2021 11:11 AM	18:40	6.87 pH	15.05 °C	25,234 µS/cm	0.18 mg/L	0.41 NTU	-23.5 mV		20.00 ml/min
6/8/2021 11:14 AM	21:40	6.87 pH	14.99 °C	25,158 µS/cm	0.16 mg/L	0.79 NTU	-25.4 mV		20.00 ml/min
6/8/2021 11:17 AM	24:40	6.87 pH	14.95 °C	25,152 µS/cm	0.15 mg/L	0.00 NTU	-26.9 mV		20.00 ml/min
6/8/2021 11:20 AM	27:40	6.88 pH	15.01 °C	25,060 µS/cm	0.15 mg/L	0.00 NTU	-27.6 mV		20.00 ml/min

6/8/2021 11:23 AM	30:40	6.88 pH	14.91 °C	24,979 µS/cm	0.15 mg/L	0.00 NTU	-28.0 mV		20.00 ml/min

Samples

Sample ID:	Description:
MW-202	

Low-Flow Test Report:

Test Date / Time: 6/8/2021 12:13:27 PM
Project: Seattle Terminal 2Q21 (2)
Operator Name: Daniel Sly Gilbert

Location Name: MW-203 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 10.5 ft** **Total Depth: 25.5 ft** **Initial Depth to Water: 13.79 m**	**Pump Type: Geotechnical Geopump Series 2** **Tubing Type: Polyethylene** **Pump Intake From TOC: 14 ft** **Estimated Total Volume Pumped: 9066.667 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.16 m**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 466586**

Test Notes:

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 5 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10		
6/8/2021 12:13 PM	00:00	7.08 pH	16.94 °C	2,947.5 µS/cm	1.13 mg/L	34.27 NTU	-32.4 mV	13.79 m	200.00 ml/min
6/8/2021 12:13 PM	00:20	7.08 pH	16.87 °C	2,826.7 µS/cm	0.94 mg/L	6.24 NTU	-42.2 mV	13.79 m	200.00 ml/min
6/8/2021 12:16 PM	03:20	7.11 pH	16.63 °C	2,992.2 µS/cm	0.39 mg/L	0.00 NTU	-71.9 mV	13.79 m	200.00 ml/min
6/8/2021 12:19 PM	06:20	7.12 pH	16.61 °C	3,132.3 µS/cm	0.33 mg/L	0.00 NTU	-85.6 mV	13.79 m	200.00 ml/min
6/8/2021 12:22 PM	09:20	7.11 pH	16.69 °C	3,347.1 µS/cm	0.43 mg/L	0.00 NTU	-93.4 mV	13.79 m	200.00 ml/min
6/8/2021 12:25 PM	12:20	7.11 pH	16.47 °C	3,672.7 µS/cm	0.41 mg/L	0.00 NTU	-99.6 mV	13.79 m	200.00 ml/min
6/8/2021 12:28 PM	15:20	7.11 pH	16.41 °C	3,951.7 µS/cm	0.39 mg/L	0.00 NTU	-105.1 mV	13.79 m	200.00 ml/min
6/8/2021 12:31 PM	18:20	7.10 pH	16.41 °C	4,326.7 µS/cm	0.36 mg/L	0.00 NTU	-109.7 mV	13.79 m	200.00 ml/min
6/8/2021 12:34 PM	21:20	7.10 pH	16.59 °C	4,612.0 µS/cm	0.36 mg/L	0.00 NTU	-114.4 mV	13.79 m	200.00 ml/min
6/8/2021 12:37 PM	24:20	7.09 pH	16.71 °C	4,815.0 µS/cm	0.33 mg/L	7.05 NTU	-118.2 mV	13.79 m	200.00 ml/min
6/8/2021 12:40 PM	27:20	7.11 pH	16.95 °C	4,867.4 µS/cm	1.17 mg/L	1.68 NTU	-121.3 mV	13.79 m	200.00 ml/min
6/8/2021 12:43 PM	30:20	7.10 pH	16.39 °C	5,028.7 µS/cm	0.36 mg/L	35.94 NTU	-123.7 mV	13.79 m	200.00 ml/min
6/8/2021 12:46 PM	33:20	7.09 pH	16.42 °C	5,246.8 µS/cm	0.34 mg/L	23.66 NTU	-127.6 mV	13.79 m	200.00 ml/min
6/8/2021 12:49 PM	36:20	7.09 pH	16.45 °C	5,402.3 µS/cm	0.41 mg/L	110.24 NTU	-131.1 mV	13.79 m	200.00 ml/min
6/8/2021 12:52 PM	39:20	7.09 pH	16.52 °C	5,665.9 µS/cm	0.46 mg/L	0.97 NTU	-134.3 mV	13.79 m	200.00 ml/min

6/8/2021 12:55 PM	42:20	7.08 pH	16.54 °C	5,879.0 µS/cm	0.43 mg/L	63.36 NTU	-137.5 mV	13.79 m	200.00 ml/min
6/8/2021 12:58 PM	45:20	7.06 pH	16.63 °C	5,352.4 µS/cm	0.20 mg/L	0.49 NTU	-139.4 mV	13.79 m	200.00 ml/min

Samples

Sample ID:	Description:
MW-203	Sample time 13:05 Parameters did not stabilize after 45 minutes Methodology: Groundwater samples were collected using low flow purge techniques with dedicated tubing, a peristaltic pump, and an Aquatroll 600 multimeter. The polyethylene tubing was in each well such that the intake depth was within 6 inches of the water level. All wells were sampled within their screened interval. Samples were immediately stored on ice.

Low-Flow Test Report:

Test Date / Time: 6/8/2021 2:35:15 PM
Project: Seattle Terminal 2Q21
Operator Name: Daniel Sly Gilbert

Location Name: MW-204 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 13.55 ft** **Top of Screen: 17.35 ft** **Total Depth: 30.9 ft** **Initial Depth to Water: 19.71 ft**	**Pump Type: Geotechnical Geopump Series 2** **Tubing Type: Polyethylene** **Pump Intake From TOC: 20 ft** **Estimated Total Volume Pumped: 9053.333 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 466586**

Test Notes:

Weather Conditions:
Sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 5 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10		
6/8/2021 2:35 PM	00:00	6.67 pH	14.77 °C	487.21 µS/cm	3.01 mg/L	1.38 NTU	-37.9 mV	19.71 ft	200.00 ml/min
6/8/2021 2:35 PM	00:16	6.66 pH	14.72 °C	487.82 µS/cm	2.77 mg/L	2.89 NTU	-37.6 mV	19.71 ft	200.00 ml/min
6/8/2021 2:38 PM	03:16	6.57 pH	15.28 °C	486.50 µS/cm	2.28 mg/L	1.50 NTU	-38.4 mV	19.71 ft	200.00 ml/min
6/8/2021 2:41 PM	06:16	6.55 pH	15.87 °C	496.66 µS/cm	2.74 mg/L	1.36 NTU	-38.8 mV	19.71 ft	200.00 ml/min
6/8/2021 2:44 PM	09:16	6.52 pH	15.20 °C	485.31 µS/cm	0.53 mg/L	2.90 NTU	-38.8 mV	19.71 ft	200.00 ml/min
6/8/2021 2:47 PM	12:16	6.41 pH	16.48 °C	484.04 µS/cm	1.75 mg/L	118.12 NTU	-34.4 mV	19.71 ft	200.00 ml/min
6/8/2021 2:50 PM	15:16	6.48 pH	15.00 °C	484.23 µS/cm	0.37 mg/L	13.43 NTU	-36.2 mV	19.71 ft	200.00 ml/min
6/8/2021 2:53 PM	18:16	6.52 pH	15.10 °C	483.46 µS/cm	0.29 mg/L	7.92 NTU	-39.9 mV	19.71 ft	200.00 ml/min
6/8/2021 2:56 PM	21:16	6.54 pH	14.92 °C	483.29 µS/cm	0.24 mg/L	6.74 NTU	-40.8 mV	19.71 ft	200.00 ml/min
6/8/2021 2:59 PM	24:16	6.57 pH	15.28 °C	483.02 µS/cm	0.25 mg/L	8.06 NTU	-43.4 mV	19.71 ft	200.00 ml/min
6/8/2021 3:02 PM	27:16	6.59 pH	14.95 °C	482.46 µS/cm	0.23 mg/L	5.74 NTU	-44.3 mV	19.71 ft	200.00 ml/min
6/8/2021 3:05 PM	30:16	6.63 pH	14.86 °C	483.11 µS/cm	0.21 mg/L	5.44 NTU	-46.2 mV	19.71 ft	200.00 ml/min
6/8/2021 3:08 PM	33:16	6.65 pH	15.15 °C	484.61 µS/cm	0.22 mg/L	4.97 NTU	-47.6 mV	19.71 ft	200.00 ml/min

6/8/2021 3:11 PM	36:16	6.71 pH	14.95 °C	481.66 µS/cm	0.21 mg/L	7.44 NTU	-51.9 mV	19.71 ft	200.00 ml/min
6/8/2021 3:14 PM	39:16	6.71 pH	14.93 °C	481.80 µS/cm	0.20 mg/L	10.43 NTU	-48.3 mV	19.71 ft	200.00 ml/min
6/8/2021 3:17 PM	42:16	6.71 pH	14.61 °C	480.57 µS/cm	0.18 mg/L	3.79 NTU	-47.0 mV	19.71 ft	200.00 ml/min
6/8/2021 3:20 PM	45:16	6.71 pH	14.62 °C	480.26 µS/cm	0.17 mg/L	8.84 NTU	-46.4 mV	19.71 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW-204	Sample Time: 15:30 Methodology: Groundwater samples were collected using low flow purge techniques with dedicated tubing, a peristaltic pump, and an Aquatroll 600 multimeter. The polyethylene tubing was in each well such that the intake depth was within 6 inches of the water level. All wells were sampled within their screened interval. Samples were immediately stored on ice.

Low-Flow Test Report:

Test Date / Time: 6/8/2021 2:28:11 PM
Project: Seattle Terminal (5)
Operator Name: Joseph Sepiol

Location Name: MW-205 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 20.5 ft** **Top of Screen: 18 ft** **Total Depth: 38.5 ft** **Initial Depth to Water: 23.7 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Pump Intake From TOC: 10.64 ft** **Estimated Total Volume Pumped: 1046 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 20 ml/min** **Final Draw Down: 23.69 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 467545**

Test Notes:
Methodology: Groundwater samples were collected using low flow purge techniques with dedicated tubing,a peristaltic pump,and an Aquatroll 600 Multimeter. The polyethylene tubing was in each well such that the intake depth was within 6 inches of the water level. All wells were sampled within their screened interval. Samples were immediately stored on ice to be sampled for BTEX, DTP, HO,and CPAHs. PID 0.0

PID 0.0

Slight petroleum odor on probe

Turbidity and conductivity did not stabilize. Purged for 45+ minutes.

Weather Conditions:
63F clear

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 0.1	
6/8/2021 2:28 PM	00:00	6.73 pH	24.77 °C	657.85 µS/cm	1.58 mg/L		45.9 mV		20.00 ml/min
6/8/2021 2:31 PM	03:00	6.77 pH	24.21 °C	599.19 µS/cm	0.86 mg/L		70.0 mV		20.00 ml/min
6/8/2021 2:34 PM	06:00	6.77 pH	21.42 °C	605.76 µS/cm	0.53 mg/L		71.4 mV		20.00 ml/min
6/8/2021 2:37 PM	09:00	6.77 pH	20.14 °C	604.30 µS/cm	0.36 mg/L	2,656.0 NTU	63.1 mV		20.00 ml/min
6/8/2021 2:40 PM	12:00	6.80 pH	19.15 °C	600.32 µS/cm	0.26 mg/L	2,701.2 NTU	49.8 mV		20.00 ml/min
6/8/2021 2:43 PM	15:00	6.82 pH	18.39 °C	600.52 µS/cm	0.21 mg/L	1,920.4 NTU	38.8 mV		20.00 ml/min
6/8/2021 2:46 PM	18:00	6.82 pH	18.06 °C	601.68 µS/cm	0.19 mg/L	21.58 NTU	27.3 mV		20.00 ml/min
6/8/2021 2:49 PM	21:00	6.82 pH	17.87 °C	597.52 µS/cm	0.18 mg/L	59.58 NTU	17.9 mV		20.00 ml/min

6/8/2021 2:52 PM	24:00	6.81 pH	17.88 °C	595.60 µS/cm	0.17 mg/L	143.43 NTU	11.8 mV		20.00 ml/min
6/8/2021 2:55 PM	27:00	6.81 pH	17.79 °C	574.93 µS/cm	0.16 mg/L	880.09 NTU	6.0 mV		20.00 ml/min
6/8/2021 2:58 PM	30:00	6.80 pH	17.87 °C	501.40 µS/cm	0.15 mg/L	1,394.4 NTU	1.7 mV		20.00 ml/min
6/8/2021 3:01 PM	33:00	6.80 pH	17.79 °C	489.05 µS/cm	0.15 mg/L	736.95 NTU	-2.0 mV		20.00 ml/min
6/8/2021 3:04 PM	36:00	6.81 pH	17.67 °C	501.87 µS/cm	0.15 mg/L	39.68 NTU	-17.0 mV		20.00 ml/min
6/8/2021 3:05 PM	37:01	6.81 pH	17.56 °C	603.33 µS/cm	0.15 mg/L	258.66 NTU	-36.1 mV		20.00 ml/min
6/8/2021 3:08 PM	40:01	6.82 pH	17.65 °C	591.37 µS/cm	0.15 mg/L	137.32 NTU	-38.6 mV		20.00 ml/min
6/8/2021 3:11 PM	43:01	6.81 pH	17.66 °C	583.51 µS/cm	0.16 mg/L	23.46 NTU	-39.5 mV		20.00 ml/min
6/8/2021 3:14 PM	46:01	6.83 pH	17.88 °C	570.39 µS/cm	0.16 mg/L	108.87 NTU	-41.2 mV		20.00 ml/min
6/8/2021 3:17 PM	49:18	6.78 pH	17.57 °C	602.34 µS/cm	0.16 mg/L	56.71 NTU	-25.3 mV		20.00 ml/min
6/8/2021 3:20 PM	52:18	6.85 pH	17.27 °C	593.28 µS/cm	0.16 mg/L	406.87 NTU	-37.4 mV		20.00 ml/min

Samples

Sample ID:	Description:
MW-205	Conductivity and turbidity did not stabilize. Purged for 45+ min.

Low-Flow Test Report:

Test Date / Time: 6/8/2021 10:45:14 AM
Project: Seattle Terminal 2Q21
Operator Name: Daniel Sly Gilbert

Location Name: MW-206 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 14.8 ft** **Top of Screen: 11 ft** **Total Depth: 25.8 ft** **Initial Depth to Water: 12.85 m**	**Pump Type: Geotechnical Geopump Series 2** **Tubing Type: Polyethylene** **Pump Intake From TOC: 13 ft** **Estimated Total Volume Pumped: 9793.333 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.42 m**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 466586**

Test Notes:

Weather Conditions:
Wunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10		
6/8/2021 10:45 AM	00:00	6.77 pH	13.89 °C	36,585 µS/cm	4.14 mg/L	9.14 NTU	242.2 mV	12.85 m	200.00 ml/min
6/8/2021 10:48 AM	03:00	6.73 pH	13.98 °C	36,684 µS/cm	2.98 mg/L	2.25 NTU	209.9 mV	12.85 m	200.00 ml/min
6/8/2021 10:51 AM	06:00	6.72 pH	13.96 °C	36,774 µS/cm	2.78 mg/L	0.00 NTU	183.6 mV	12.85 m	200.00 ml/min
6/8/2021 10:54 AM	09:00	6.72 pH	13.60 °C	36,803 µS/cm	2.56 mg/L	0.08 NTU	163.2 mV	12.85 m	200.00 ml/min
6/8/2021 10:57 AM	12:00	6.72 pH	13.65 °C	36,884 µS/cm	2.20 mg/L	0.36 NTU	143.1 mV	12.85 m	200.00 ml/min
6/8/2021 11:00 AM	15:00	6.73 pH	13.64 °C	36,716 µS/cm	2.14 mg/L	2.74 NTU	129.8 mV	12.85 m	200.00 ml/min
6/8/2021 11:03 AM	18:00	6.73 pH	13.59 °C	36,731 µS/cm	2.11 mg/L	2.62 NTU	121.7 mV	12.85 m	200.00 ml/min
6/8/2021 11:06 AM	21:00	6.73 pH	13.53 °C	36,772 µS/cm	2.04 mg/L	0.23 NTU	114.8 mV	12.85 m	200.00 ml/min
6/8/2021 11:09 AM	24:00	6.74 pH	13.47 °C	36,204 µS/cm	1.99 mg/L	1.15 NTU	108.2 mV	12.85 m	200.00 ml/min
6/8/2021 11:12 AM	27:00	6.74 pH	13.57 °C	33,779 µS/cm	1.94 mg/L	8.68 NTU	100.0 mV	12.85 m	200.00 ml/min
6/8/2021 11:15 AM	30:00	6.74 pH	13.54 °C	33,830 µS/cm	1.93 mg/L	3.17 NTU	93.5 mV	12.85 m	200.00 ml/min
6/8/2021 11:18 AM	33:00	6.74 pH	13.47 °C	33,942 µS/cm	1.90 mg/L	1.15 NTU	88.2 mV	12.85 m	200.00 ml/min
6/8/2021 11:21 AM	36:00	6.74 pH	13.50 °C	32,828 µS/cm	1.91 mg/L	0.82 NTU	84.6 mV	12.85 m	200.00 ml/min

6/8/2021 11:22 AM	36:58	6.75 pH	13.51 °C	32,833 µS/cm	1.92 mg/L	0.47 NTU	83.5 mV	12.85 m	200.00 ml/min
6/8/2021 11:25 AM	39:58	6.75 pH	13.48 °C	32,848 µS/cm	1.96 mg/L	0.49 NTU	79.7 mV	12.85 m	200.00 ml/min
6/8/2021 11:28 AM	42:58	6.75 pH	13.55 °C	32,865 µS/cm	1.88 mg/L	0.57 NTU	76.8 mV	12.85 m	200.00 ml/min
6/8/2021 11:31 AM	45:58	6.75 pH	13.79 °C	36,791 µS/cm	1.72 mg/L	0.31 NTU	74.2 mV	12.85 m	200.00 ml/min
6/8/2021 11:34 AM	48:58	6.75 pH	13.90 °C	36,733 µS/cm	1.67 mg/L	0.08 NTU	71.4 mV	12.85 m	200.00 ml/min

Samples

Sample ID:	Description:
MW-206	Sample Time 11:40 Parameters did not stabilize after 45 minutes Final depth of tubing 13.5 ft Methodology: Groundwater samples were collected using low flow purge techniques with dedicated tubing, a peristaltic pump, and an Aquatroll 600 multimeter. The polyethylene tubing was in each well such that the intake depth was within 6 inches of the water level. All wells were sampled within their screened interval. Samples were immediately stored on ice.

Low-Flow Test Report:

Test Date / Time: 6/7/2021 2:37:22 PM
Project: Seattle Terminal
Operator Name: Joseph Sepiol

Location Name: MW-207 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 13.55 ft** **Top of Screen: 17.35 ft** **Total Depth: 30.9 ft**	**Pump Type: Per** **Tubing Type: Polyethylene** **Estimated Total Volume Pumped: 1032.333 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 20 ml/min** **Final Draw Down: 10.94 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 697450**

Test Notes:
pH not detected by probe. Sampled after 45 min of purge.

PID of well 0.0

Methodology: Groundwater samples were collected using low flow purge techniques with dedicated tubing, a peristaltic pump, and an Aquatroll 600 multimeter. The polyethylene was in each well such that the intake depth was within 6 inches of the water level. All wells were sampled within the screened interval. Samples were immediately stored on ice to be samples for BTEX, DTP, HO, and CPAHs.

Weather Conditions:
60F Partly Cloudy

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10	+/- 5	
6/7/2021 2:37 PM	00:00		16.32 °C	17,536 µS/cm	3.26 mg/L	29.92 NTU			20.00 ml/min
6/7/2021 2:40 PM	03:00		17.39 °C	17,651 µS/cm	1.14 mg/L	7.94 NTU			20.00 ml/min
6/7/2021 2:43 PM	06:00		17.91 °C	17,666 µS/cm	0.98 mg/L	8.86 NTU			20.00 ml/min
6/7/2021 2:46 PM	09:00		18.16 °C	17,677 µS/cm	0.91 mg/L	2.57 NTU			20.00 ml/min
6/7/2021 2:49 PM	12:00		14.28 °C	18,598 µS/cm	0.64 mg/L	5.74 NTU			20.00 ml/min
6/7/2021 2:52 PM	15:00		13.85 °C	19,044 µS/cm	1.21 mg/L	1.78 NTU			20.00 ml/min
6/7/2021 2:55 PM	18:00		13.76 °C	19,126 µS/cm	0.12 mg/L	0.00 NTU			20.00 ml/min
6/7/2021 2:58 PM	21:00		13.79 °C	19,195 µS/cm	0.10 mg/L	0.00 NTU			20.00 ml/min
6/7/2021 3:01 PM	24:00		13.79 °C	19,039 µS/cm	0.11 mg/L	0.00 NTU			20.00 ml/min
6/7/2021 3:04 PM	27:00		14.18 °C	19,481 µS/cm	0.48 mg/L	0.00 NTU			20.00 ml/min

6/7/2021 3:07 PM	30:00		14.15 °C	19,474 µS/cm	0.29 mg/L	0.00 NTU			20.00 ml/min
6/7/2021 3:10 PM	33:00		14.24 °C	18,563 µS/cm	0.18 mg/L	0.00 NTU			20.00 ml/min
6/7/2021 3:19 PM	42:37		14.35 °C	19,978 µS/cm	0.13 mg/L	12.83 NTU			20.00 ml/min
6/7/2021 3:22 PM	45:37		14.33 °C	19,955 µS/cm	0.65 mg/L	0.00 NTU			20.00 ml/min
6/7/2021 3:25 PM	48:37		14.26 °C	20,451 µS/cm	1.36 mg/L	0.00 NTU			20.00 ml/min
6/7/2021 3:28 PM	51:37		14.28 °C	20,191 µS/cm	1.60 mg/L	0.00 NTU			20.00 ml/min

Samples

Sample ID:	Description:
MW-207	

Low-Flow Test Report:

Test Date / Time: 6/9/2021 1:19:30 PM
Project: Seattle Terminal 2Q21
Operator Name: Daniel Sly Gilbert

Location Name: MW-209
Well Diameter: 2 in
Casing Type: PVC
Screen Length: 15 ft
Top of Screen: 3 ft
Total Depth: 18 ft
Initial Depth to Water: 10.2 ft

Pump Type: Geotechnical Geopump Series 2
Tubing Type: Polyethylene
Pump Intake From TOC: 10.5 ft
Estimated Total Volume Pumped: 9000 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 200 ml/min
Final Draw Down: 0.18 ft

Instrument Used: Aqua TROLL 600 Vented
Serial Number: 466586

Test Notes:

Weather Conditions:
Sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 5 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10		
6/9/2021 1:19 PM	00:00	6.75 pH	14.79 °C	557.53 µS/cm	0.60 mg/L	18.86 NTU	-41.3 mV	10.20 ft	200.00 ml/min
6/9/2021 1:22 PM	03:00	6.66 pH	14.95 °C	559.56 µS/cm	0.37 mg/L	0.00 NTU	-42.9 mV	10.20 ft	200.00 ml/min
6/9/2021 1:25 PM	06:00	6.59 pH	15.30 °C	463.77 µS/cm	0.34 mg/L	0.93 NTU	-38.3 mV	10.20 ft	200.00 ml/min
6/9/2021 1:28 PM	09:00	6.59 pH	15.18 °C	438.62 µS/cm	0.30 mg/L	1.15 NTU	-38.4 mV	10.20 ft	200.00 ml/min
6/9/2021 1:31 PM	12:00	6.58 pH	15.30 °C	415.96 µS/cm	0.28 mg/L	2.85 NTU	-39.6 mV	10.20 ft	200.00 ml/min
6/9/2021 1:34 PM	15:00	6.59 pH	15.25 °C	367.27 µS/cm	0.23 mg/L	2.25 NTU	-39.5 mV	10.20 ft	200.00 ml/min
6/9/2021 1:37 PM	18:00	6.59 pH	15.19 °C	362.07 µS/cm	0.22 mg/L	33.64 NTU	-39.6 mV	10.20 ft	200.00 ml/min
6/9/2021 1:40 PM	21:00	6.59 pH	15.13 °C	395.95 µS/cm	0.26 mg/L	57.16 NTU	-39.4 mV	10.20 ft	200.00 ml/min
6/9/2021 1:43 PM	24:00	6.60 pH	15.19 °C	379.47 µS/cm	0.24 mg/L	61.01 NTU	-40.0 mV	10.20 ft	200.00 ml/min
6/9/2021 1:46 PM	27:00	6.60 pH	15.10 °C	352.30 µS/cm	0.23 mg/L	158.53 NTU	-39.8 mV	10.20 ft	200.00 ml/min
6/9/2021 1:49 PM	30:00	6.61 pH	15.08 °C	328.51 µS/cm	0.23 mg/L	162.02 NTU	-39.5 mV	10.20 ft	200.00 ml/min
6/9/2021 1:52 PM	33:00	6.61 pH	15.14 °C	337.68 µS/cm	0.22 mg/L	196.24 NTU	-40.4 mV	10.20 ft	200.00 ml/min
6/9/2021 1:55 PM	36:00	6.61 pH	15.12 °C	339.57 µS/cm	0.20 mg/L	162.55 NTU	-39.8 mV	10.20 ft	200.00 ml/min

6/9/2021 1:58 PM	39:00	6.60 pH	15.08 °C	321.23 µS/cm	0.21 mg/L	168.95 NTU	-39.9 mV	10.20 ft	200.00 ml/min
6/9/2021 2:01 PM	42:00	6.58 pH	15.15 °C	398.84 µS/cm	0.21 mg/L	169.20 NTU	-39.5 mV	10.20 ft	200.00 ml/min
6/9/2021 2:04 PM	45:00	6.58 pH	15.03 °C	396.66 µS/cm	0.22 mg/L	181.84 NTU	-39.2 mV	10.20 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW-209	Sample Time: 14:15 Parameters did not stabilize after 45 minutes Methodology: Groundwater samples were collected using low flow purge techniques with dedicated, a peristaltic pump, and an Aquatroll 600 multimeter. The polyethylene tubing was in each well such that the intake depth was within 6 inches of water level. All wells were sampled within their screened interval. Samples were immediately stored on ice.

Low-Flow Test Report:

Test Date / Time: 6/9/2021 1:22:07 PM
Project: Seattle Terminal (6)
Operator Name: Joseph Sepiol

Location Name: MW-210 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 3 ft** **Total Depth: 18 ft** **Initial Depth to Water: 9.32 ft**	**Pump Type: Peristaltic** **Tubing Type: Polyethylene** **Pump Intake From TOC: 9.82 ft** **Estimated Total Volume Pumped: 970.667 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 20 ml/min** **Final Draw Down: 13.36 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 467545**

Test Notes:
Methodology: Groundwater samples were collected using low flow purge techniques with dedicated tubing,a peristaltic pump,and an Aquatroll 600 Multimeter. The polyethylene tubing was in each well such that the intake depth was within 6 inches of the water level. All wells were sampled within their screened interval. Samples were immediately stored on ice to be sampled for BTEX, DTP, HO,and CPAHs.

PID 0.0 ppm

Turbidity did not stabilize. Purged for 45+ min

Weather Conditions:
61F clear

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 3 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10		
6/9/2021 1:22 PM	00:00	6.28 pH	21.00 °C	292.92 µS/cm	2.42 mg/L	6.39 NTU	93.2 mV		20.00 ml/min
6/9/2021 1:25 PM	03:00	6.19 pH	18.13 °C	312.06 µS/cm	0.94 mg/L	3.66 NTU	87.4 mV		20.00 ml/min
6/9/2021 1:28 PM	06:00	6.12 pH	18.50 °C	7.88 µS/cm	3.04 mg/L	0.96 NTU	49.3 mV		20.00 ml/min
6/9/2021 1:31 PM	09:00	6.17 pH	19.84 °C	336.24 µS/cm	3.99 mg/L	3.83 NTU	37.0 mV		20.00 ml/min
6/9/2021 1:34 PM	12:00	6.27 pH	16.78 °C	335.46 µS/cm	0.88 mg/L	1.60 NTU	26.8 mV		20.00 ml/min
6/9/2021 1:37 PM	15:00	6.25 pH	16.48 °C	319.45 µS/cm	0.29 mg/L	6.37 NTU	24.0 mV		20.00 ml/min
6/9/2021 1:40 PM	18:00	6.28 pH	15.82 °C	317.21 µS/cm	0.20 mg/L	3.04 NTU	19.9 mV		20.00 ml/min
6/9/2021 1:43 PM	21:00	6.26 pH	15.54 °C	317.08 µS/cm	0.16 mg/L	1.93 NTU	20.9 mV		20.00 ml/min
6/9/2021 1:44 PM	22:04	6.26 pH	15.46 °C	321.87 µS/cm	0.15 mg/L	1.84 NTU	20.6 mV		20.00 ml/min

6/9/2021 1:47 PM	25:04	6.28 pH	15.27 °C	327.93 µS/cm	0.14 mg/L	1.84 NTU	16.5 mV		20.00 ml/min
6/9/2021 1:50 PM	28:04	6.25 pH	15.51 °C	332.12 µS/cm	0.26 mg/L	53.27 NTU	14.5 mV		20.00 ml/min
6/9/2021 1:53 PM	31:04	6.31 pH	15.89 °C	307.52 µS/cm	0.42 mg/L	4.21 NTU	11.2 mV		20.00 ml/min
6/9/2021 1:56 PM	34:04	6.31 pH	15.69 °C	290.08 µS/cm	0.26 mg/L	1.87 NTU	4.9 mV		20.00 ml/min
6/9/2021 1:59 PM	37:04	6.28 pH	15.51 °C	283.53 µS/cm	0.27 mg/L	0.86 NTU	10.0 mV		20.00 ml/min
6/9/2021 2:02 PM	40:04	6.26 pH	15.42 °C	282.87 µS/cm	0.24 mg/L	0.70 NTU	15.0 mV		20.00 ml/min
6/9/2021 2:05 PM	43:04	6.27 pH	15.29 °C	285.87 µS/cm	0.23 mg/L	1.48 NTU	18.4 mV		20.00 ml/min
6/9/2021 2:08 PM	46:04	6.27 pH	15.30 °C	289.04 µS/cm	0.23 mg/L	3.39 NTU	19.8 mV		20.00 ml/min
6/9/2021 2:10 PM	48:20	6.26 pH	15.25 °C	286.39 µS/cm	0.21 mg/L	2.66 NTU	20.4 mV		20.00 ml/min
6/9/2021 2:10 PM	48:32	6.27 pH	15.26 °C	286.46 µS/cm	0.20 mg/L	1.62 NTU	20.4 mV		20.00 ml/min

Samples

Sample ID:	Description:
MW-210	

Low-Flow Test Report:

Test Date / Time: 6/9/2021 2:40:01 PM
Project: Seattle Terminal 2Q21 (3)
Operator Name: Daniel Sly Gilbert

Location Name: MW-211 **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 15 ft** **Top of Screen: 3 ft** **Total Depth: 18 ft** **Initial Depth to Water: 9.91 ft**	**Pump Type: Geotechnical Geopump Series 2** **Tubing Type: Polyethylene** **Pump Intake From TOC: 10.3 ft** **Estimated Total Volume Pumped: 9000 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: 0.31 ft**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 466586**

Test Notes:

Weather Conditions:
Sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 5 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10		
6/9/2021 2:40 PM	00:00	7.13 pH	14.60 °C	534.75 µS/cm	0.96 mg/L	5.68 NTU	21.6 mV	9.91 ft	200.00 ml/min
6/9/2021 2:43 PM	03:00	7.05 pH	14.34 °C	535.94 µS/cm	0.40 mg/L	6.39 NTU	14.9 mV	9.91 ft	200.00 ml/min
6/9/2021 2:46 PM	06:00	7.02 pH	14.17 °C	526.66 µS/cm	0.29 mg/L	6.78 NTU	5.7 mV	9.91 ft	200.00 ml/min
6/9/2021 2:49 PM	09:00	7.03 pH	14.31 °C	526.45 µS/cm	0.26 mg/L	7.36 NTU	-8.3 mV	9.91 ft	200.00 ml/min
6/9/2021 2:52 PM	12:00	7.05 pH	14.22 °C	527.46 µS/cm	0.24 mg/L	8.04 NTU	-18.7 mV	9.91 ft	200.00 ml/min
6/9/2021 2:55 PM	15:00	7.07 pH	14.06 °C	527.00 µS/cm	0.25 mg/L	7.98 NTU	-25.8 mV	9.91 ft	200.00 ml/min
6/9/2021 2:58 PM	18:00	7.09 pH	14.03 °C	527.00 µS/cm	0.21 mg/L	7.92 NTU	-33.3 mV	9.91 ft	200.00 ml/min
6/9/2021 3:01 PM	21:00	7.11 pH	14.06 °C	527.12 µS/cm	0.20 mg/L	8.61 NTU	-39.7 mV	9.91 ft	200.00 ml/min
6/9/2021 3:04 PM	24:00	7.14 pH	14.09 °C	526.61 µS/cm	0.21 mg/L	7.90 NTU	-45.5 mV	9.91 ft	200.00 ml/min
6/9/2021 3:07 PM	27:00	7.16 pH	14.07 °C	524.26 µS/cm	0.21 mg/L	10.30 NTU	-50.5 mV	9.91 ft	200.00 ml/min
6/9/2021 3:10 PM	30:00	7.16 pH	14.24 °C	198.08 µS/cm	0.45 mg/L	2.77 NTU	-43.1 mV	9.91 ft	200.00 ml/min
6/9/2021 3:13 PM	33:00	7.20 pH	14.27 °C	175.44 µS/cm	0.37 mg/L	3.19 NTU	-45.3 mV	9.91 ft	200.00 ml/min
6/9/2021 3:16 PM	36:00	7.22 pH	14.19 °C	153.73 µS/cm	0.33 mg/L	7.17 NTU	-48.8 mV	9.91 ft	200.00 ml/min

6/9/2021 3:19 PM	39:00	7.23 pH	14.16 °C	152.87 µS/cm	0.32 mg/L	3.19 NTU	-50.5 mV	9.91 ft	200.00 ml/min
6/9/2021 3:22 PM	42:00	7.25 pH	14.16 °C	151.65 µS/cm	0.30 mg/L	3.00 NTU	-53.0 mV	9.91 ft	200.00 ml/min
6/9/2021 3:25 PM	45:00	7.28 pH	14.18 °C	318.57 µS/cm	0.28 mg/L	3.23 NTU	-55.8 mV	9.91 ft	200.00 ml/min

Samples

Sample ID:	Description:
MW-211	Sample Time:15:35 Parameters did not stabilize after 45 minutes Methodology: Groundwater samples were collected using low flow purge techniques with dedicated tubing, a peristaltic pump, and an Aquatroll 600 multimeter. The polyethylene tubing was in each well such that the intake depth was within 6 inches of the water level. All wells were sampled within their screened interval. Samples were immediately stored on ice.

Low-Flow Test Report:

Test Date / Time: 6/7/2021 12:39:19 PM
Project: Seattle Terminal 2Q21
Operator Name: Daniel Sly Gilbert

Location Name: MW-70R **Well Diameter: 2 in** **Casing Type: PVC** **Screen Length: 12 ft** **Top of Screen: 4 ft** **Total Depth: 16 ft** **Initial Depth to Water: 13.04 m**	**Pump Type: Geotechnical Geopump Series 2** **Tubing Type: Polyethylene** **Pump Intake From TOC: 13.5 m** **Estimated Total Volume Pumped: 9000 ml** **Flow Cell Volume: 130 ml** **Final Flow Rate: 200 ml/min** **Final Draw Down: -0.08 m**	**Instrument Used: Aqua TROLL 600 Vented** **Serial Number: 466586**

Test Notes:

Weather Conditions:
Sunny

Low-Flow Readings:

Date Time	Elapsed Time	pH	Temperature	Specific Conductivity	RDO Concentration	Turbidity	ORP	Depth To Water	Flow
		+/- 0.1	+/- 0.5 %	+/- 3 %	+/- 10 %	+/- 10 %	+/- 10		
6/7/2021 12:39 PM	00:00	6.87 pH	15.26 °C	17,022 µS/cm	2.49 mg/L	0.00 NTU	39.7 mV	13.04 m	200.00 ml/min
6/7/2021 12:42 PM	03:00	6.90 pH	15.27 °C	16,912 µS/cm	2.26 mg/L	259.83 NTU	25.2 mV	13.04 m	200.00 ml/min
6/7/2021 12:45 PM	06:00	6.91 pH	15.93 °C	16,646 µS/cm	2.25 mg/L	195.63 NTU	18.0 mV	13.04 m	200.00 ml/min
6/7/2021 12:48 PM	09:00	6.92 pH	15.68 °C	15,709 µS/cm	2.18 mg/L	232.81 NTU	13.0 mV	13.04 m	200.00 ml/min
6/7/2021 12:51 PM	12:00	6.93 pH	15.86 °C	15,230 µS/cm	2.23 mg/L	317.56 NTU	9.6 mV	13.04 m	200.00 ml/min
6/7/2021 12:54 PM	15:00	6.93 pH	16.50 °C	14,702 µS/cm	2.24 mg/L	447.14 NTU	8.2 mV	13.04 m	200.00 ml/min
6/7/2021 12:57 PM	18:00	6.94 pH	16.27 °C	15,426 µS/cm	2.12 mg/L	470.06 NTU	6.5 mV	13.04 m	200.00 ml/min
6/7/2021 1:00 PM	21:00	6.95 pH	16.07 °C	13,500 µS/cm	1.91 mg/L	477.07 NTU	1.9 mV	13.04 m	200.00 ml/min
6/7/2021 1:03 PM	24:00	6.95 pH	16.39 °C	12,396 µS/cm	1.79 mg/L	455.35 NTU	-6.1 mV	13.04 m	200.00 ml/min
6/7/2021 1:06 PM	27:00	6.95 pH	16.12 °C	11,381 µS/cm	1.92 mg/L	2,557.7 NTU	-4.8 mV	13.04 m	200.00 ml/min
6/7/2021 1:09 PM	30:00	6.96 pH	16.27 °C	10,304 µS/cm	1.73 mg/L	6,509.5 NTU	-4.8 mV	13.04 m	200.00 ml/min
6/7/2021 1:12 PM	33:00	6.96 pH	16.34 °C	11,185 µS/cm	1.61 mg/L	11,809 NTU	-6.8 mV	13.04 m	200.00 ml/min
6/7/2021 1:15 PM	36:00	6.96 pH	16.53 °C	11,092 µS/cm	1.48 mg/L	12,344 NTU	-12.8 mV	13.04 m	200.00 ml/min

6/7/2021 1:18 PM	39:00	6.96 pH	16.55 °C	10,543 µS/cm	1.41 mg/L	13,200 NTU	-11.2 mV	13.04 m	200.00 ml/min
6/7/2021 1:21 PM	42:00	6.96 pH	16.61 °C	9,222.1 µS/cm	1.30 mg/L	13,254 NTU	-11.5 mV	13.04 m	200.00 ml/min
6/7/2021 1:24 PM	45:00	6.97 pH	16.56 °C	8,891.5 µS/cm	1.23 mg/L	15,407 NTU	-13.7 mV	13.04 m	200.00 ml/min

Samples

Sample ID:	Description:
MW-70R	Sample time 13:40 Parameters did not stabilize after 45 minutes of purging. Groundwater samples were collected using low flow purge techniques with dedicated tubing, a peristaltic pump, and an Aquatroll 600 multimeter. The polyethylene tubing was in each well such that the intake depth was within 6 inches of water level. All wells were sampled within their screened interval. Samples were immediately stored on ice to be sampled for BTEX, GRO, DRO, HO, and cPAHs.
Dup-1	Groundwater samples were collected using low flow purge techniques with dedicated tubing, a peristaltic pump, and an Aquatroll 600 multimeter. The polyethylene tubing was in each well such that the intake depth was within 6 inches of water level. All wells were sampled within their screened interval. Samples were immediately stored on ice to be sampled for BTEX, GRO, DRO, HO, and cPAHs.

APPENDIX D

Laboratory report and Chain of Custody Forms

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-32694-1
Client Project/Site: Seattle Terminal

For:
ARCADIS U.S., Inc.
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Ophelie Encelle

Authorized for release by:
3/25/2021 6:27:38 AM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· 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 is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

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

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

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Amek Carter
Project Manager
3/25/2021 6:27:38 AM

Table of Contents

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-32694-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-32694-1

Receipt
The samples were received on 3/17/2021 10:50 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.1°C and 1.9°C

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 8270D_SIM: The surrogate recovery for the method blank (MB) associated with preparation batch 410-105530 was outside the lower control limits. The associated sample(s) did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
Method NWTPH_Dx: The initial sample was on a batch that failed acceptance criteria for the surrogate in the batch QC as well as the unspiked sample and sample DUP. The extraction was performed again and surrogate recoveries were acceptable, however since volume was consumed, LCS/LCSD were prepared on the re-extract batch.MW-70R-W-210316 (410-32694-1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Seattle Terminal

Job ID: 410-32694-1

Client Sample ID: MW-70R-W-210316 — Lab Sample ID: 410-32694-1

No Detections.

Client Sample ID: MW-209-W-210315 — Lab Sample ID: 410-32694-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.47	J	1.0	0.20	ug/L	1		8260D/UST	Total/NA
C7-C12 (1C)	690		250	19	ug/L	1		NWTPH-Gx	Total/NA
C12-C24	83	J *1	110	50	ug/L	1		NWTPH-Dx	Total/NA

Client Sample ID: MW-210-W-210315 — Lab Sample ID: 410-32694-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C7-C12 (1C)	38	J	250	19	ug/L	1		NWTPH-Gx	Total/NA

Client Sample ID: MW-211-W-210315 — Lab Sample ID: 410-32694-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C7-C12 (1C)	55	J	250	19	ug/L	1		NWTPH-Gx	Total/NA

Client Sample ID: DUP-1-WD-210316 — Lab Sample ID: 410-32694-5

No Detections.

Client Sample ID: QA-T-210315 — Lab Sample ID: 410-32694-6

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-70R-W-210316

Lab Sample ID: 410-32694-1

Date Collected: 03/16/21 13:50

Matrix: Water

Date Received: 03/17/21 10:50

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.20	ug/L			03/19/21 12:51	1
Ethylbenzene	ND		1.0	0.40	ug/L			03/19/21 12:51	1
Toluene	ND		1.0	0.20	ug/L			03/19/21 12:51	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/19/21 12:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*		*03/19/21 12:51*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*03/19/21 12:51*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*03/19/21 12:51*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*03/19/21 12:51*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.053	0.011	ug/L		03/22/21 19:10	03/23/21 13:05	1
Benzo[a]pyrene	ND		0.053	0.011	ug/L		03/22/21 19:10	03/23/21 13:05	1
Benzo[b]fluoranthene	ND		0.053	0.011	ug/L		03/22/21 19:10	03/23/21 13:05	1
Benzo[k]fluoranthene	ND		0.053	0.011	ug/L		03/22/21 19:10	03/23/21 13:05	1
Chrysene	ND		0.053	0.011	ug/L		03/22/21 19:10	03/23/21 13:05	1
Dibenz(a,h)anthracene	ND		0.053	0.021	ug/L		03/22/21 19:10	03/23/21 13:05	1
Indeno[1,2,3-cd]pyrene	ND		0.053	0.021	ug/L		03/22/21 19:10	03/23/21 13:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*71*		*10 - 122*	*03/22/21 19:10*	*03/23/21 13:05*	*1*
1-Methylnaphthalene-d10 (Surr)	*58*		*49 - 115*	*03/22/21 19:10*	*03/23/21 13:05*	*1*
Fluoranthene-d10 (Surr)	*80*		*65 - 129*	*03/22/21 19:10*	*03/23/21 13:05*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	ND		250	19	ug/L			03/17/21 22:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*83*		*50 - 150*		*03/17/21 22:30*	*1*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		110	48	ug/L		03/23/21 10:15	03/24/21 14:00	1
C24-C40	ND		270	110	ug/L		03/23/21 10:15	03/24/21 14:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Decanoic Acid (Surr)	*0.3*		*0 - 1*	*03/23/21 10:15*	*03/24/21 14:00*	*1*
o- terphenyl (Surr)	*55*		*50 - 150*	*03/23/21 10:15*	*03/24/21 14:00*	*1*

Client Sample ID: MW-209-W-210315

Lab Sample ID: 410-32694-2

Date Collected: 03/15/21 10:55

Matrix: Water

Date Received: 03/17/21 10:50

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.20	ug/L			03/19/21 13:15	1
Ethylbenzene	ND		1.0	0.40	ug/L			03/19/21 13:15	1
Toluene	**0.47**	**J**	1.0	0.20	ug/L			03/19/21 13:15	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/19/21 13:15	1

Client Sample ID: MW-209-W-210315

Lab Sample ID: 410-32694-2

Date Collected: 03/15/21 10:55

Matrix: Water

Date Received: 03/17/21 10:50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		80 - 120		03/19/21 13:15	1
4-Bromofluorobenzene (Surr)	108		80 - 120		03/19/21 13:15	1
Dibromofluoromethane (Surr)	98		80 - 120		03/19/21 13:15	1
Toluene-d8 (Surr)	101		80 - 120		03/19/21 13:15	1

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.056	0.011	ug/L		03/22/21 09:10	03/23/21 01:36	1
Benzo[a]pyrene	ND		0.056	0.011	ug/L		03/22/21 09:10	03/23/21 01:36	1
Benzo[b]fluoranthene	ND		0.056	0.011	ug/L		03/22/21 09:10	03/23/21 01:36	1
Benzo[k]fluoranthene	ND		0.056	0.011	ug/L		03/22/21 09:10	03/23/21 01:36	1
Chrysene	ND		0.056	0.011	ug/L		03/22/21 09:10	03/23/21 01:36	1
Dibenz(a,h)anthracene	ND		0.056	0.023	ug/L		03/22/21 09:10	03/23/21 01:36	1
Indeno[1,2,3-cd]pyrene	ND		0.056	0.023	ug/L		03/22/21 09:10	03/23/21 01:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Benzo(a)pyrene-d12 (Surr)	55		10 - 122	03/22/21 09:10	03/23/21 01:36	1
1-Methylnaphthalene-d10 (Surr)	79		49 - 115	03/22/21 09:10	03/23/21 01:36	1
Fluoranthene-d10 (Surr)	101		65 - 129	03/22/21 09:10	03/23/21 01:36	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	690		250	19	ug/L			03/17/21 22:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	84		50 - 150		03/17/21 22:56	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	83	J *1	110	50	ug/L		03/19/21 09:35	03/22/21 14:58	1
C24-C40	ND		280	110	ug/L		03/19/21 09:35	03/22/21 14:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Decanoic Acid (Surr)	0.3		0 - 1	03/19/21 09:35	03/22/21 14:58	1
o- terphenyl (Surr)	55		50 - 150	03/19/21 09:35	03/22/21 14:58	1

Client Sample ID: MW-210-W-210315

Lab Sample ID: 410-32694-3

Date Collected: 03/15/21 10:51

Matrix: Water

Date Received: 03/17/21 10:50

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.20	ug/L			03/19/21 13:39	1
Ethylbenzene	ND		1.0	0.40	ug/L			03/19/21 13:39	1
Toluene	ND		1.0	0.20	ug/L			03/19/21 13:39	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/19/21 13:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		80 - 120		03/19/21 13:39	1
4-Bromofluorobenzene (Surr)	101		80 - 120		03/19/21 13:39	1
Dibromofluoromethane (Surr)	99		80 - 120		03/19/21 13:39	1
Toluene-d8 (Surr)	98		80 - 120		03/19/21 13:39	1

Client Sample ID: MW-210-W-210315

Lab Sample ID: 410-32694-3

Date Collected: 03/15/21 10:51

Matrix: Water

Date Received: 03/17/21 10:50

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.057	0.011	ug/L		03/22/21 09:10	03/23/21 02:07	1
Benzo[a]pyrene	ND		0.057	0.011	ug/L		03/22/21 09:10	03/23/21 02:07	1
Benzo[b]fluoranthene	ND		0.057	0.011	ug/L		03/22/21 09:10	03/23/21 02:07	1
Benzo[k]fluoranthene	ND		0.057	0.011	ug/L		03/22/21 09:10	03/23/21 02:07	1
Chrysene	ND		0.057	0.011	ug/L		03/22/21 09:10	03/23/21 02:07	1
Dibenz(a,h)anthracene	ND		0.057	0.023	ug/L		03/22/21 09:10	03/23/21 02:07	1
Indeno[1,2,3-cd]pyrene	ND		0.057	0.023	ug/L		03/22/21 09:10	03/23/21 02:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*62*		*10 - 122*	*03/22/21 09:10*	*03/23/21 02:07*	*1*
1-Methylnaphthalene-d10 (Surr)	*70*		*49 - 115*	*03/22/21 09:10*	*03/23/21 02:07*	*1*
Fluoranthene-d10 (Surr)	*83*		*65 - 129*	*03/22/21 09:10*	*03/23/21 02:07*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	38	J	250	19	ug/L			03/17/21 23:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*83*		*50 - 150*		*03/17/21 23:22*	*1*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND	*1	110	51	ug/L		03/19/21 09:35	03/22/21 15:44	1
C24-C40	ND		290	110	ug/L		03/19/21 09:35	03/22/21 15:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Decanoic Acid (Surr)	*0.3*		*0 - 1*	*03/19/21 09:35*	*03/22/21 15:44*	*1*
o- terphenyl (Surr)	*66*		*50 - 150*	*03/19/21 09:35*	*03/22/21 15:44*	*1*

Client Sample ID: MW-211-W-210315

Lab Sample ID: 410-32694-4

Date Collected: 03/15/21 12:00

Matrix: Water

Date Received: 03/17/21 10:50

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.20	ug/L			03/19/21 14:03	1
Ethylbenzene	ND		1.0	0.40	ug/L			03/19/21 14:03	1
Toluene	ND		1.0	0.20	ug/L			03/19/21 14:03	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/19/21 14:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*80 - 120*		*03/19/21 14:03*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*03/19/21 14:03*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*03/19/21 14:03*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*03/19/21 14:03*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.055	0.011	ug/L		03/22/21 09:10	03/23/21 02:37	1
Benzo[a]pyrene	ND		0.055	0.011	ug/L		03/22/21 09:10	03/23/21 02:37	1
Benzo[b]fluoranthene	ND		0.055	0.011	ug/L		03/22/21 09:10	03/23/21 02:37	1
Benzo[k]fluoranthene	ND		0.055	0.011	ug/L		03/22/21 09:10	03/23/21 02:37	1

Client Sample ID: MW-211-W-210315

Lab Sample ID: 410-32694-4

Date Collected: 03/15/21 12:00

Matrix: Water

Date Received: 03/17/21 10:50

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chrysene	ND		0.055	0.011	ug/L		03/22/21 09:10	03/23/21 02:37	1
Dibenz(a,h)anthracene	ND		0.055	0.022	ug/L		03/22/21 09:10	03/23/21 02:37	1
Indeno[1,2,3-cd]pyrene	ND		0.055	0.022	ug/L		03/22/21 09:10	03/23/21 02:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*51*		*10 - 122*	*03/22/21 09:10*	*03/23/21 02:37*	*1*
1-Methylnaphthalene-d10 (Surr)	*68*		*49 - 115*	*03/22/21 09:10*	*03/23/21 02:37*	*1*
Fluoranthene-d10 (Surr)	*88*		*65 - 129*	*03/22/21 09:10*	*03/23/21 02:37*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	55	J	250	19	ug/L			03/17/21 23:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*84*		*50 - 150*		*03/17/21 23:48*	*1*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND	*1	110	51	ug/L		03/19/21 09:35	03/22/21 16:06	1
C24-C40	ND		280	110	ug/L		03/19/21 09:35	03/22/21 16:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Decanoic Acid (Surr)	*0.3*		*0 - 1*	*03/19/21 09:35*	*03/22/21 16:06*	*1*
o- terphenyl (Surr)	*63*		*50 - 150*	*03/19/21 09:35*	*03/22/21 16:06*	*1*

Client Sample ID: DUP-1-WD-210316

Lab Sample ID: 410-32694-5

Date Collected: 03/16/21 00:00

Matrix: Water

Date Received: 03/17/21 10:50

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.20	ug/L			03/23/21 15:16	1
Ethylbenzene	ND		1.0	0.40	ug/L			03/23/21 15:16	1
Toluene	ND		1.0	0.20	ug/L			03/23/21 15:16	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/23/21 15:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*03/23/21 15:16*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*03/23/21 15:16*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*03/23/21 15:16*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*03/23/21 15:16*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.050	0.010	ug/L		03/22/21 19:10	03/23/21 13:35	1
Benzo[a]pyrene	ND		0.050	0.010	ug/L		03/22/21 19:10	03/23/21 13:35	1
Benzo[b]fluoranthene	ND		0.050	0.010	ug/L		03/22/21 19:10	03/23/21 13:35	1
Benzo[k]fluoranthene	ND		0.050	0.010	ug/L		03/22/21 19:10	03/23/21 13:35	1
Chrysene	ND		0.050	0.010	ug/L		03/22/21 19:10	03/23/21 13:35	1
Dibenz(a,h)anthracene	ND		0.050	0.020	ug/L		03/22/21 19:10	03/23/21 13:35	1
Indeno[1,2,3-cd]pyrene	ND		0.050	0.020	ug/L		03/22/21 19:10	03/23/21 13:35	1

Client Sample ID: DUP-1-WD-210316

Lab Sample ID: 410-32694-5

Date Collected: 03/16/21 00:00

Matrix: Water

Date Received: 03/17/21 10:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*36*		*10 - 122*	*03/22/21 19:10*	*03/23/21 13:35*	*1*
1-Methylnaphthalene-d10 (Surr)	*57*		*49 - 115*	*03/22/21 19:10*	*03/23/21 13:35*	*1*
Fluoranthene-d10 (Surr)	*71*		*65 - 129*	*03/22/21 19:10*	*03/23/21 13:35*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	ND		250	19	ug/L			03/18/21 00:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*83*		*50 - 150*		*03/18/21 00:13*	*1*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND	*1	110	48	ug/L		03/19/21 09:35	03/22/21 16:29	1
C24-C40	ND		270	110	ug/L		03/19/21 09:35	03/22/21 16:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Decanoic Acid (Surr)	*0.3*		*0 - 1*	*03/19/21 09:35*	*03/22/21 16:29*	*1*
o- terphenyl (Surr)	*80*		*50 - 150*	*03/19/21 09:35*	*03/22/21 16:29*	*1*

Client Sample ID: QA-T-210315

Lab Sample ID: 410-32694-6

Date Collected: 03/15/21 00:00

Matrix: Water

Date Received: 03/17/21 10:50

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.20	ug/L			03/23/21 11:15	1
Ethylbenzene	ND		1.0	0.40	ug/L			03/23/21 11:15	1
Toluene	ND		1.0	0.20	ug/L			03/23/21 11:15	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/23/21 11:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*80 - 120*		*03/23/21 11:15*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*03/23/21 11:15*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*03/23/21 11:15*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*03/23/21 11:15*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	ND		250	19	ug/L			03/17/21 22:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*84*		*50 - 150*		*03/17/21 22:05*	*1*

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Seattle Terminal

Job ID: 410-32694-1

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-32694-1	MW-70R-W-210316	95	102	100	100
410-32694-2	MW-209-W-210315	95	108	98	101
410-32694-3	MW-210-W-210315	96	101	99	98
410-32694-4	MW-211-W-210315	99	100	102	99
410-32694-5	DUP-1-WD-210316	97	101	101	98
410-32694-6	QA-T-210315	96	100	99	99
LCS 410-105040/4	Lab Control Sample	102	104	99	100
LCS 410-106029/4	Lab Control Sample	101	103	99	100
LCSD 410-105040/5	Lab Control Sample Dup	103	102	99	100
LCSD 410-106029/5	Lab Control Sample Dup	101	101	100	98
MB 410-105040/6	Method Blank	97	102	102	100
MB 410-106029/6	Method Blank	95	102	99	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		BAPd12	MNPd10	FLN10
Lab Sample ID	Client Sample ID	(10-122)	(49-115)	(65-129)
410-32694-1	MW-70R-W-210316	71	58	80
410-32694-2	MW-209-W-210315	55	79	101
410-32694-3	MW-210-W-210315	62	70	83
410-32694-4	MW-211-W-210315	51	68	88
410-32694-5	DUP-1-WD-210316	36	57	71
LCS 410-105530/2-A	Lab Control Sample	81	69	86
LCS 410-105839/2-A	Lab Control Sample	83	59	88
LCSD 410-105530/3-A	Lab Control Sample Dup	82	70	89
LCSD 410-105839/3-A	Lab Control Sample Dup	89	59	93
MB 410-105530/1-A	Method Blank	41	19 S1-	39 S1-
MB 410-105839/1-A	Method Blank	71	58	80

Surrogate Legend

BAPd12 = Benzo(a)pyrene-d12 (Surr)
MNPd10 = 1-Methylnaphthalene-d10 (Surr)
FLN10 = Fluoranthene-d10 (Surr)

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		TFT-F1
Lab Sample ID	Client Sample ID	(50-150)
410-32694-1	MW-70R-W-210316	83
410-32694-2	MW-209-W-210315	84
410-32694-3	MW-210-W-210315	83

Surrogate Summary

Client: ARCADIS U.S., Inc.
Job ID: 410-32694-1
Project/Site: Seattle Terminal

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
		TFT-F1								
Lab Sample ID	Client Sample ID	(50-150)								
410-32694-4	MW-211-W-210315	84								
410-32694-5	DUP-1-WD-210316	83								
410-32694-6	QA-T-210315	84								
LCS 410-104308/5	Lab Control Sample	77								
LCSD 410-104308/6	Lab Control Sample Dup	77								
MB 410-104308/4	Method Blank	84								

Surrogate Legend

TFT-F = a,a,a-Trifluorotoluene (fid)

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
		NDA	OTP							
Lab Sample ID	Client Sample ID	(0-1)	(50-150)							
410-32694-1	MW-70R-W-210316	0.3	55							
410-32694-2	MW-209-W-210315	0.3	55							
410-32694-2 DU	MW-209-W-210315	0.4	70							
410-32694-3	MW-210-W-210315	0.3	66							
410-32694-4	MW-211-W-210315	0.3	63							
410-32694-5	DUP-1-WD-210316	0.3	80							
LCS 410-104991/2-B	Lab Control Sample	0.4	88							
LCS 410-105988/2-B	Lab Control Sample	0.4	68							
LCSD 410-104991/3-B	Lab Control Sample Dup	0.4	74							
LCSD 410-105988/3-B	Lab Control Sample Dup	0.4	69							
MB 410-104991/1-B	Method Blank	0.3	65							
MB 410-105988/1-B	Method Blank	0.3	61							

Surrogate Legend

NDA = n-Decanoic Acid (Surr)

OTP = o- terphenyl (Surr)

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-105040/6
Matrix: Water
Analysis Batch: 105040

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.20	ug/L			03/19/21 11:39	1
Ethylbenzene	ND		1.0	0.40	ug/L			03/19/21 11:39	1
Toluene	ND		1.0	0.20	ug/L			03/19/21 11:39	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/19/21 11:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*80 - 120*		*03/19/21 11:39*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*03/19/21 11:39*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*03/19/21 11:39*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*03/19/21 11:39*	*1*

Lab Sample ID: LCS 410-105040/4
Matrix: Water
Analysis Batch: 105040

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			20.0	20.6		ug/L		103	80 - 120		
Ethylbenzene			20.0	20.9		ug/L		104	80 - 120		
Toluene			20.0	21.1		ug/L		106	80 - 120		
Xylenes, Total			60.0	60.9		ug/L		102	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-105040/5
Matrix: Water
Analysis Batch: 105040

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			20.0	19.2		ug/L		96	80 - 120	7	30
Ethylbenzene			20.0	19.4		ug/L		97	80 - 120	8	30
Toluene			20.0	19.4		ug/L		97	80 - 120	8	30
Xylenes, Total			60.0	56.1		ug/L		94	80 - 120	8	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Method: 8260D/UST - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-106029/6
Matrix: Water
Analysis Batch: 106029

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.20	ug/L			03/23/21 10:36	1
Ethylbenzene	ND		1.0	0.40	ug/L			03/23/21 10:36	1
Toluene	ND		1.0	0.20	ug/L			03/23/21 10:36	1
Xylenes, Total	ND		6.0	1.4	ug/L			03/23/21 10:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*		*03/23/21 10:36*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*03/23/21 10:36*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*03/23/21 10:36*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*03/23/21 10:36*	*1*

Lab Sample ID: LCS 410-106029/4
Matrix: Water
Analysis Batch: 106029

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			20.0	18.5		ug/L		92	80 - 120		
Ethylbenzene			20.0	18.9		ug/L		95	80 - 120		
Toluene			20.0	18.9		ug/L		95	80 - 120		
Xylenes, Total			60.0	54.0		ug/L		90	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 410-106029/5
Matrix: Water
Analysis Batch: 106029

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			20.0	19.8		ug/L		99	80 - 120	7	30
Ethylbenzene			20.0	19.7		ug/L		99	80 - 120	4	30
Toluene			20.0	19.8		ug/L		99	80 - 120	5	30
Xylenes, Total			60.0	56.5		ug/L		94	80 - 120	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*100*		*80 - 120*
Toluene-d8 (Surr)	*98*		*80 - 120*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 410-105530/1-A
Matrix: Water
Analysis Batch: 105899

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 105530

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.050	0.010	ug/L		03/22/21 09:10	03/23/21 05:39	1
Benzo[a]pyrene	ND		0.050	0.010	ug/L		03/22/21 09:10	03/23/21 05:39	1
Benzo[b]fluoranthene	ND		0.050	0.010	ug/L		03/22/21 09:10	03/23/21 05:39	1
Benzo[k]fluoranthene	ND		0.050	0.010	ug/L		03/22/21 09:10	03/23/21 05:39	1
Chrysene	ND		0.050	0.010	ug/L		03/22/21 09:10	03/23/21 05:39	1
Dibenz(a,h)anthracene	ND		0.050	0.020	ug/L		03/22/21 09:10	03/23/21 05:39	1
Indeno[1,2,3-cd]pyrene	ND		0.050	0.020	ug/L		03/22/21 09:10	03/23/21 05:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*41*		*10 - 122*	*03/22/21 09:10*	*03/23/21 05:39*	*1*
1-Methylnaphthalene-d10 (Surr)	*19*	*S1-*	*49 - 115*	*03/22/21 09:10*	*03/23/21 05:39*	*1*
Fluoranthene-d10 (Surr)	*39*	*S1-*	*65 - 129*	*03/22/21 09:10*	*03/23/21 05:39*	*1*

Lab Sample ID: LCS 410-105530/2-A
Matrix: Water
Analysis Batch: 105899

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 105530

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	1.00	0.811		ug/L		81	69 - 119
Benzo[a]pyrene	1.00	0.880		ug/L		88	73 - 117
Benzo[b]fluoranthene	1.00	0.821		ug/L		82	72 - 123
Benzo[k]fluoranthene	1.00	0.837		ug/L		84	66 - 124
Chrysene	1.00	0.829		ug/L		83	61 - 117
Dibenz(a,h)anthracene	1.00	0.737		ug/L		74	60 - 118
Indeno[1,2,3-cd]pyrene	1.00	0.798		ug/L		80	57 - 134

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Benzo(a)pyrene-d12 (Surr)	*81*		*10 - 122*
1-Methylnaphthalene-d10 (Surr)	*69*		*49 - 115*
Fluoranthene-d10 (Surr)	*86*		*65 - 129*

Lab Sample ID: LCSD 410-105530/3-A
Matrix: Water
Analysis Batch: 105899

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 105530

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzo[a]anthracene	1.00	0.829		ug/L		83	69 - 119	2	30
Benzo[a]pyrene	1.00	0.874		ug/L		87	73 - 117	1	30
Benzo[b]fluoranthene	1.00	0.848		ug/L		85	72 - 123	3	30
Benzo[k]fluoranthene	1.00	0.838		ug/L		84	66 - 124	0	30
Chrysene	1.00	0.833		ug/L		83	61 - 117	0	30
Dibenz(a,h)anthracene	1.00	0.727		ug/L		73	60 - 118	1	30
Indeno[1,2,3-cd]pyrene	1.00	0.786		ug/L		79	57 - 134	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Benzo(a)pyrene-d12 (Surr)	*82*		*10 - 122*
1-Methylnaphthalene-d10 (Surr)	*70*		*49 - 115*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCSD 410-105530/3-A
Matrix: Water
Analysis Batch: 105899

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 105530

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Fluoranthene-d10 (Surr)	*89*		*65 - 129*

Lab Sample ID: MB 410-105839/1-A
Matrix: Water
Analysis Batch: 105968

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 105839

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.050	0.010	ug/L		03/22/21 19:10	03/23/21 08:30	1
Benzo[a]pyrene	ND		0.050	0.010	ug/L		03/22/21 19:10	03/23/21 08:30	1
Benzo[b]fluoranthene	ND		0.050	0.010	ug/L		03/22/21 19:10	03/23/21 08:30	1
Benzo[k]fluoranthene	ND		0.050	0.010	ug/L		03/22/21 19:10	03/23/21 08:30	1
Chrysene	ND		0.050	0.010	ug/L		03/22/21 19:10	03/23/21 08:30	1
Dibenz(a,h)anthracene	ND		0.050	0.020	ug/L		03/22/21 19:10	03/23/21 08:30	1
Indeno[1,2,3-cd]pyrene	ND		0.050	0.020	ug/L		03/22/21 19:10	03/23/21 08:30	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Benzo(a)pyrene-d12 (Surr)	*71*		*10 - 122*	*03/22/21 19:10*	*03/23/21 08:30*	*1*
1-Methylnaphthalene-d10 (Surr)	*58*		*49 - 115*	*03/22/21 19:10*	*03/23/21 08:30*	*1*
Fluoranthene-d10 (Surr)	*80*		*65 - 129*	*03/22/21 19:10*	*03/23/21 08:30*	*1*

Lab Sample ID: LCS 410-105839/2-A
Matrix: Water
Analysis Batch: 105968

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 105839

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	1.00	0.825		ug/L		83	69 - 119
Benzo[a]pyrene	1.00	0.887		ug/L		89	73 - 117
Benzo[b]fluoranthene	1.00	0.837		ug/L		84	72 - 123
Benzo[k]fluoranthene	1.00	0.849		ug/L		85	66 - 124
Chrysene	1.00	0.846		ug/L		85	61 - 117
Dibenz(a,h)anthracene	1.00	0.724		ug/L		72	60 - 118
Indeno[1,2,3-cd]pyrene	1.00	0.805		ug/L		80	57 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Benzo(a)pyrene-d12 (Surr)	*83*		*10 - 122*
1-Methylnaphthalene-d10 (Surr)	*59*		*49 - 115*
Fluoranthene-d10 (Surr)	*88*		*65 - 129*

Lab Sample ID: LCSD 410-105839/3-A
Matrix: Water
Analysis Batch: 105968

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 105839

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzo[a]anthracene	1.00	0.886		ug/L		89	69 - 119	7	30
Benzo[a]pyrene	1.00	0.945		ug/L		95	73 - 117	6	30
Benzo[b]fluoranthene	1.00	0.905		ug/L		90	72 - 123	8	30
Benzo[k]fluoranthene	1.00	0.912		ug/L		91	66 - 124	7	30
Chrysene	1.00	0.904		ug/L		90	61 - 117	7	30

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCSD 410-105839/3-A
Matrix: Water
Analysis Batch: 105968

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 105839

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dibenz(a,h)anthracene			1.00	0.763		ug/L		76	60 - 118	5	30
Indeno[1,2,3-cd]pyrene			1.00	0.822		ug/L		82	57 - 134	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Benzo(a)pyrene-d12 (Surr)	*89*		*10 - 122*
1-Methylnaphthalene-d10 (Surr)	*59*		*49 - 115*
Fluoranthene-d10 (Surr)	*93*		*65 - 129*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 410-104308/4
Matrix: Water
Analysis Batch: 104308

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	ND		250	19	ug/L			03/17/21 19:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*84*		*50 - 150*		*03/17/21 19:26*	*1*

Lab Sample ID: LCS 410-104308/5
Matrix: Water
Analysis Batch: 104308

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C7-C12 (1C)			1100	1030		ug/L		94	64 - 131		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
a,a,a-Trifluorotoluene (fid) (1C)	*77*		*50 - 150*

Lab Sample ID: LCSD 410-104308/6
Matrix: Water
Analysis Batch: 104308

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C7-C12 (1C)			1100	1030		ug/L		94	64 - 131	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene (fid) (1C)	*77*		*50 - 150*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Lab Sample ID: MB 410-104991/1-B
Matrix: Water
Analysis Batch: 105635

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 104991

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		100	45	ug/L		03/19/21 09:35	03/22/21 13:05	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH (Continued)

Lab Sample ID: MB 410-104991/1-B — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 105635 — **Prep Batch: 104991**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C24-C40	ND		250	100	ug/L		03/19/21 09:35	03/22/21 13:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Decanoic Acid (Surr)	*0.3*		*0 - 1*	*03/19/21 09:35*	*03/22/21 13:05*	*1*
o- terphenyl (Surr)	*65*		*50 - 150*	*03/19/21 09:35*	*03/22/21 13:05*	*1*

Lab Sample ID: LCS 410-104991/2-B — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 105635 — **Prep Batch: 104991**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C12-C24			602	264		ug/L		44	10 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Decanoic Acid (Surr)	*0.4*		*0 - 1*
o- terphenyl (Surr)	*88*		*50 - 150*

Lab Sample ID: LCSD 410-104991/3-B — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 105635 — **Prep Batch: 104991**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C12-C24			602	200	*1	ug/L		33	10 - 115	28	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Decanoic Acid (Surr)	*0.4*		*0 - 1*
o- terphenyl (Surr)	*74*		*50 - 150*

Lab Sample ID: 410-32694-2 DU — **Client Sample ID: MW-209-W-210315**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 105635 — **Prep Batch: 104991**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
C12-C24	83	J *1		89.6	J *1	ug/L				8	20
C24-C40	ND			ND		ug/L				NC	20

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
n-Decanoic Acid (Surr)	*0.4*		*0 - 1*
o- terphenyl (Surr)	*70*		*50 - 150*

Lab Sample ID: MB 410-105988/1-B — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 106467 — **Prep Batch: 105988**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		100	45	ug/L		03/23/21 10:15	03/24/21 12:52	1
C24-C40	ND		250	100	ug/L		03/23/21 10:15	03/24/21 12:52	1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH (Continued)

Lab Sample ID: MB 410-105988/1-B
Matrix: Water
Analysis Batch: 106467

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 105988

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Decanoic Acid (Surr)	0.3		0 - 1	03/23/21 10:15	03/24/21 12:52	1
o- terphenyl (Surr)	61		50 - 150	03/23/21 10:15	03/24/21 12:52	1

Lab Sample ID: LCS 410-105988/2-B
Matrix: Water
Analysis Batch: 106467

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 105988

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C12-C24			602	165		ug/L		27	10 - 115		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
n-Decanoic Acid (Surr)	0.4		0 - 1
o- terphenyl (Surr)	68		50 - 150

Lab Sample ID: LCSD 410-105988/3-B
Matrix: Water
Analysis Batch: 106467

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 105988

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C12-C24			602	198		ug/L		33	10 - 115	18	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
n-Decanoic Acid (Surr)	0.4		0 - 1
o- terphenyl (Surr)	69		50 - 150

GC/MS VOA

Analysis Batch: 105040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-32694-1	MW-70R-W-210316	Total/NA	Water	8260D/UST	
410-32694-2	MW-209-W-210315	Total/NA	Water	8260D/UST	
410-32694-3	MW-210-W-210315	Total/NA	Water	8260D/UST	
410-32694-4	MW-211-W-210315	Total/NA	Water	8260D/UST	
MB 410-105040/6	Method Blank	Total/NA	Water	8260D/UST	
LCS 410-105040/4	Lab Control Sample	Total/NA	Water	8260D/UST	
LCSD 410-105040/5	Lab Control Sample Dup	Total/NA	Water	8260D/UST	

Analysis Batch: 106029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-32694-5	DUP-1-WD-210316	Total/NA	Water	8260D/UST	
410-32694-6	QA-T-210315	Total/NA	Water	8260D/UST	
MB 410-106029/6	Method Blank	Total/NA	Water	8260D/UST	
LCS 410-106029/4	Lab Control Sample	Total/NA	Water	8260D/UST	
LCSD 410-106029/5	Lab Control Sample Dup	Total/NA	Water	8260D/UST	

GC/MS Semi VOA

Prep Batch: 105530

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-32694-2	MW-209-W-210315	Total/NA	Water	3510C	
410-32694-3	MW-210-W-210315	Total/NA	Water	3510C	
410-32694-4	MW-211-W-210315	Total/NA	Water	3510C	
MB 410-105530/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-105530/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-105530/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Prep Batch: 105839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-32694-1	MW-70R-W-210316	Total/NA	Water	3510C	
410-32694-5	DUP-1-WD-210316	Total/NA	Water	3510C	
MB 410-105839/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-105839/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-105839/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 105899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-32694-2	MW-209-W-210315	Total/NA	Water	8270D SIM	105530
410-32694-3	MW-210-W-210315	Total/NA	Water	8270D SIM	105530
410-32694-4	MW-211-W-210315	Total/NA	Water	8270D SIM	105530
MB 410-105530/1-A	Method Blank	Total/NA	Water	8270D SIM	105530
LCS 410-105530/2-A	Lab Control Sample	Total/NA	Water	8270D SIM	105530
LCSD 410-105530/3-A	Lab Control Sample Dup	Total/NA	Water	8270D SIM	105530

Analysis Batch: 105968

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-32694-1	MW-70R-W-210316	Total/NA	Water	8270D SIM	105839
410-32694-5	DUP-1-WD-210316	Total/NA	Water	8270D SIM	105839
MB 410-105839/1-A	Method Blank	Total/NA	Water	8270D SIM	105839
LCS 410-105839/2-A	Lab Control Sample	Total/NA	Water	8270D SIM	105839
LCSD 410-105839/3-A	Lab Control Sample Dup	Total/NA	Water	8270D SIM	105839

GC VOA

Analysis Batch: 104308

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-32694-1	MW-70R-W-210316	Total/NA	Water	NWTPH-Gx	
410-32694-2	MW-209-W-210315	Total/NA	Water	NWTPH-Gx	
410-32694-3	MW-210-W-210315	Total/NA	Water	NWTPH-Gx	
410-32694-4	MW-211-W-210315	Total/NA	Water	NWTPH-Gx	
410-32694-5	DUP-1-WD-210316	Total/NA	Water	NWTPH-Gx	
410-32694-6	QA-T-210315	Total/NA	Water	NWTPH-Gx	
MB 410-104308/4	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 410-104308/5	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
LCSD 410-104308/6	Lab Control Sample Dup	Total/NA	Water	NWTPH-Gx	

GC Semi VOA

Prep Batch: 104991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-32694-2	MW-209-W-210315	Total/NA	Water	3510C	
410-32694-3	MW-210-W-210315	Total/NA	Water	3510C	
410-32694-4	MW-211-W-210315	Total/NA	Water	3510C	
410-32694-5	DUP-1-WD-210316	Total/NA	Water	3510C	
MB 410-104991/1-B	Method Blank	Total/NA	Water	3510C	
LCS 410-104991/2-B	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-104991/3-B	Lab Control Sample Dup	Total/NA	Water	3510C	
410-32694-2 DU	MW-209-W-210315	Total/NA	Water	3510C	

Cleanup Batch: 105331

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-32694-2	MW-209-W-210315	Total/NA	Water	3630C	104991
410-32694-3	MW-210-W-210315	Total/NA	Water	3630C	104991
410-32694-4	MW-211-W-210315	Total/NA	Water	3630C	104991
410-32694-5	DUP-1-WD-210316	Total/NA	Water	3630C	104991
MB 410-104991/1-B	Method Blank	Total/NA	Water	3630C	104991
LCS 410-104991/2-B	Lab Control Sample	Total/NA	Water	3630C	104991
LCSD 410-104991/3-B	Lab Control Sample Dup	Total/NA	Water	3630C	104991
410-32694-2 DU	MW-209-W-210315	Total/NA	Water	3630C	104991

Analysis Batch: 105635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-32694-2	MW-209-W-210315	Total/NA	Water	NWTPH-Dx	105331
410-32694-3	MW-210-W-210315	Total/NA	Water	NWTPH-Dx	105331
410-32694-4	MW-211-W-210315	Total/NA	Water	NWTPH-Dx	105331
410-32694-5	DUP-1-WD-210316	Total/NA	Water	NWTPH-Dx	105331
MB 410-104991/1-B	Method Blank	Total/NA	Water	NWTPH-Dx	105331
LCS 410-104991/2-B	Lab Control Sample	Total/NA	Water	NWTPH-Dx	105331
LCSD 410-104991/3-B	Lab Control Sample Dup	Total/NA	Water	NWTPH-Dx	105331
410-32694-2 DU	MW-209-W-210315	Total/NA	Water	NWTPH-Dx	105331

Prep Batch: 105988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-32694-1	MW-70R-W-210316	Total/NA	Water	3510C	
MB 410-105988/1-B	Method Blank	Total/NA	Water	3510C	
LCS 410-105988/2-B	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-105988/3-B	Lab Control Sample Dup	Total/NA	Water	3510C	

Client: ARCADIS U.S., Inc.
Job ID: 410-32694-1
Project/Site: Seattle Terminal

GC Semi VOA

Cleanup Batch: 106394

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-32694-1	MW-70R-W-210316	Total/NA	Water	3630C	105988
MB 410-105988/1-B	Method Blank	Total/NA	Water	3630C	105988
LCS 410-105988/2-B	Lab Control Sample	Total/NA	Water	3630C	105988
LCSD 410-105988/3-B	Lab Control Sample Dup	Total/NA	Water	3630C	105988

Analysis Batch: 106467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-32694-1	MW-70R-W-210316	Total/NA	Water	NWTPH-Dx	106394
MB 410-105988/1-B	Method Blank	Total/NA	Water	NWTPH-Dx	106394
LCS 410-105988/2-B	Lab Control Sample	Total/NA	Water	NWTPH-Dx	106394
LCSD 410-105988/3-B	Lab Control Sample Dup	Total/NA	Water	NWTPH-Dx	106394

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Seattle Terminal

Job ID: 410-32694-1

Client Sample ID: MW-70R-W-210316

Lab Sample ID: 410-32694-1

Date Collected: 03/16/21 13:50

Matrix: Water

Date Received: 03/17/21 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	105040	03/19/21 12:51	K4WN	ELLE
Total/NA	Prep	3510C			105839	03/22/21 19:10	QQ3P	ELLE
Total/NA	Analysis	8270D SIM		1	105968	03/23/21 13:05	UJM0	ELLE
Total/NA	Analysis	NWTPH-Gx		1	104308	03/17/21 22:30	UMDJ	ELLE
Total/NA	Prep	3510C			105988	03/23/21 10:15	R9CT	ELLE
Total/NA	Cleanup	3630C			106394	03/23/21 22:00	K2IL	ELLE
Total/NA	Analysis	NWTPH-Dx		1	106467	03/24/21 14:00	IUSB	ELLE

Client Sample ID: MW-209-W-210315

Lab Sample ID: 410-32694-2

Date Collected: 03/15/21 10:55

Matrix: Water

Date Received: 03/17/21 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	105040	03/19/21 13:15	K4WN	ELLE
Total/NA	Prep	3510C			105530	03/22/21 09:10	R9CT	ELLE
Total/NA	Analysis	8270D SIM		1	105899	03/23/21 01:36	UJM0	ELLE
Total/NA	Analysis	NWTPH-Gx		1	104308	03/17/21 22:56	UMDJ	ELLE
Total/NA	Prep	3510C			104991	03/19/21 09:35	I5BW	ELLE
Total/NA	Cleanup	3630C			105331	03/20/21 03:18	USL7	ELLE
Total/NA	Analysis	NWTPH-Dx		1	105635	03/22/21 14:58	IUSB	ELLE

Client Sample ID: MW-210-W-210315

Lab Sample ID: 410-32694-3

Date Collected: 03/15/21 10:51

Matrix: Water

Date Received: 03/17/21 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	105040	03/19/21 13:39	K4WN	ELLE
Total/NA	Prep	3510C			105530	03/22/21 09:10	R9CT	ELLE
Total/NA	Analysis	8270D SIM		1	105899	03/23/21 02:07	UJM0	ELLE
Total/NA	Analysis	NWTPH-Gx		1	104308	03/17/21 23:22	UMDJ	ELLE
Total/NA	Prep	3510C			104991	03/19/21 09:35	I5BW	ELLE
Total/NA	Cleanup	3630C			105331	03/20/21 03:18	USL7	ELLE
Total/NA	Analysis	NWTPH-Dx		1	105635	03/22/21 15:44	IUSB	ELLE

Client Sample ID: MW-211-W-210315

Lab Sample ID: 410-32694-4

Date Collected: 03/15/21 12:00

Matrix: Water

Date Received: 03/17/21 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	105040	03/19/21 14:03	K4WN	ELLE
Total/NA	Prep	3510C			105530	03/22/21 09:10	R9CT	ELLE
Total/NA	Analysis	8270D SIM		1	105899	03/23/21 02:37	UJM0	ELLE
Total/NA	Analysis	NWTPH-Gx		1	104308	03/17/21 23:48	UMDJ	ELLE

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Seattle Terminal

Job ID: 410-32694-1

Client Sample ID: MW-211-W-210315

Lab Sample ID: 410-32694-4

Date Collected: 03/15/21 12:00
Matrix: Water
Date Received: 03/17/21 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			104991	03/19/21 09:35	I5BW	ELLE
Total/NA	Cleanup	3630C			105331	03/20/21 03:18	USL7	ELLE
Total/NA	Analysis	NWTPH-Dx		1	105635	03/22/21 16:06	IUSB	ELLE

Client Sample ID: DUP-1-WD-210316

Lab Sample ID: 410-32694-5

Date Collected: 03/16/21 00:00
Matrix: Water
Date Received: 03/17/21 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	106029	03/23/21 15:16	LCW8	ELLE
Total/NA	Prep	3510C			105839	03/22/21 19:10	QQ3P	ELLE
Total/NA	Analysis	8270D SIM		1	105968	03/23/21 13:35	UJM0	ELLE
Total/NA	Analysis	NWTPH-Gx		1	104308	03/18/21 00:13	UMDJ	ELLE
Total/NA	Prep	3510C			104991	03/19/21 09:35	I5BW	ELLE
Total/NA	Cleanup	3630C			105331	03/20/21 03:18	USL7	ELLE
Total/NA	Analysis	NWTPH-Dx		1	105635	03/22/21 16:29	IUSB	ELLE

Client Sample ID: QA-T-210315

Lab Sample ID: 410-32694-6

Date Collected: 03/15/21 00:00
Matrix: Water
Date Received: 03/17/21 10:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	106029	03/23/21 11:15	LCW8	ELLE
Total/NA	Analysis	NWTPH-Gx		1	104308	03/17/21 22:05	UMDJ	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Seattle Terminal

Job ID: 410-32694-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C457	04-11-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
NWTPH-Dx	3510C	Water	C12-C24
NWTPH-Gx		Water	C7-C12 (1C)

Method Summary

Client: ARCADIS U.S., Inc.
Job ID: 410-32694-1
Project/Site: Seattle Terminal

Method	Method Description	Protocol	Laboratory
8260D/UST	Volatile Organic Compounds by GC/MS	SW846	ELLE
8270D SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	ELLE
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC)	NWTPH	ELLE
NWTPH-Dx	Semi-Volatile Petroleum Products by NWTPH	NWTPH	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
3630C	Silica Gel Cleanup	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE

Protocol References:

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Seattle Terminal

Job ID: 410-32694-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
410-32694-1	MW-70R-W-210316	Water	03/16/21 13:50	03/17/21 10:50	
410-32694-2	MW-209-W-210315	Water	03/15/21 10:55	03/17/21 10:50	
410-32694-3	MW-210-W-210315	Water	03/15/21 10:51	03/17/21 10:50	
410-32694-4	MW-211-W-210315	Water	03/15/21 12:00	03/17/21 10:50	
410-32694-5	DUP-1-WD-210316	Water	03/16/21 00:00	03/17/21 10:50	
410-32694-6	QA-T-210315	Water	03/15/21 00:00	03/17/21 10:50	

Chevron Northwes[t] ... s Request/Chain of Custody

eurofins | Lancaster Laboratories

Acct. # ___ 410-32694 Chain of Custody

[Labor]atories use only
Sample # ___
[Res]pond with circled numbers.

SCR #: ___

1 Client Information

Facility #: Seattle Terminal
WBS:
Site Address: Former Unocal Seattle Marketing Terminal
Chevron PM:
Lead Consultant: Arcadis
Consultant/Office: 1100 Olive Way Suite 800 Seattle, WA
Consultant Project Mgr.: Sam Miles
Consultant Phone #: 206-853-7428
Sampler: Kiley Zaubi and Trevor Bryant

4 Matrix
☐ Sediment ☒ Ground ☐ Surface
☐ Soil ☐ Potable ☐ NPDES ☐ Water ☐ Oil ☐ Air

5 Analyses Requested
BTEX + ~~MTBE~~ 8021 ☒ 8260 ☐ Naphth ☐; 8260 full scan; Oxygenates; NWTPH GX; NWTPH DX ☒ Silica Gel Cleanup ☒; Lead Total ☐ Diss. ☐ Method; WAVPH ☐ WAEPH ☐; cPAHs EPA 8270 SIM

2 Sample Identification

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Oil	Total Number of Containers	BTEX + MTBE 8021	8260 full scan	Oxygenates	NWTPH GX	NWTPH DX	Lead	WAVPH	cPAHs EPA 8270 SIM
MW-70R	3/16	1350	X			X		10	X			X	X			X
MW-209	3/15	1055	↓			↓		↓	↓			↓	↓			↓
MW-210	3/15	1051	↓			↓		↓	↓			↓	↓			↓
MW-211	3/15	1200	↓			↓		↓	↓			↓	↓			↓
DUP-1	3/16	—	↓			↓		↓	↓			↓	↓			↓
TRIP BLANK	—	—	—			—		4	↓			↓				

☐ Results in Dry Weight
☐ J value reporting needed
☐ Must meet lowest detection limits possible for 8260 compounds
☐ 8021 MTBE Confirmation
☐ Confirm MTBE + Naphthalene
☐ Confirm highest hit by 8260
☐ Confirm all hits by 8260
☐ Run ___ oxy's on highest hit
☐ Run ___ oxy's on all hits

6 Remarks

7 Turnaround Time Requested (TAT) (please circle)
(Standard) 5 day 4 day
72 hour 48 hour 24 hour

8 Data Package Options (please circle if required)
Type I - Full Type VI (Raw Data)

9

Relinquished by	Date	Time	Received by	Date	Time
Kiley Zaubi	3-16-21	1700	FedEx	3-16-21	1700
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by Commercial Carrier: UPS ___ FedEx ✓ Other ___			Received by [signature]	3/17/21	1050

Temperature Upon Receipt 1.1 / 1.9 °C Custody Seals Intact? (Yes) No

Lancaster Laboratories, Inc. • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300
The white copy should accompany samples to Lancaster Laboratories. The yellow copy should be retained by the client.
Issued by Dept. ... 7051.01

3/25/2021

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 410-32694-1

Login Number: 32694

List Source: Eurofins Lancaster Laboratories Env

List Number: 1

Creator: Colon Martinez, Jessenia C

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

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ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-43237-1
Client Project/Site: Seattle Terminal
Revision: 1

For:
ARCADIS U.S., Inc.
1100 Olive Way
Suite 800
Seattle, Washington 98101

Attn: Mr. Samuel Miles

Authorized for release by:
8/9/2021 2:01:03 PM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· 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 is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

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

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

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

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, except as otherwise agreed. 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. Except as otherwise agreed, 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.

Amek Carter
Project Manager
8/9/2021 2:01:03 PM

Table of Contents

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Seattle Terminal

Job ID: 410-43237-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1-	Surrogate recovery exceeds control limits, low biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-43237-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-43237-1

Revision
The report being provided is a revision of the original report sent on 6/25//2021. The report (revision 1) is being revised due to: Correct collection date for DUP-1.

Receipt
The samples were received on 6/11/2021 10:51 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 4.0°C, 4.5°C and 4.8°C

Receipt Exceptions
The following samples were received at the laboratory without a sample collection time or date documented on the chain of custody: MW-70R-W-210607 (410-43237-1), MW-200-W-210607 (410-43237-2), MW-201-W-210608 (410-43237-3), MW-202-W-210608 (410-43237-4), MW-203-W-210608 (410-43237-5), MW-204-W-210608 (410-43237-6), MW-205-W-210608 (410-43237-7), MW-206-W-210608 (410-43237-8), MW-207-W-210607 (410-43237-9), MW-209-W-210609 (410-43237-10), MW-210-W-210609 (410-43237-11), MW-211-W-210609 (410-43237-12) and DUP-1-WD-210609 (410-43237-13). Collection information entered per the container labels.

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 8270D_SIM: The continuing calibration verification (CCV) associated with batch 410-138815 recovered above the upper control limit for Dibenz(a,h)anthracene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA
Method NWTPH_Dx: o- terphenyl (Surr) recovery for the method blank and the following sample was outside of acceptance limits: MW-70R-W-210607 (410-43237-1). There was insufficient sample to perform a re-extraction; therefore, the data have been reported.

Method NWTPH_Dx: The following sample was prepared outside of preparation holding time due to a laboratory error: MW-70R-W-210607 (410-43237-1).

Method NWTPH_Dx: Surrogate recovery for the following samples and method blank was outside control limits: MW-200-W-210607 (410-43237-2), MW-202-W-210608 (410-43237-4), MW-203-W-210608 (410-43237-5), MW-204-W-210608 (410-43237-6), MW-205-W-210608 (410-43237-7), MW-206-W-210608 (410-43237-8), MW-207-W-210607 (410-43237-9) and (410-43237-D-4-C DU). Re-extraction and/or re-analysis was performed outside of holding time with acceptable results.

Method NWTPH_Dx: o- terphenyl (Surr) recovery for the method blank was outside of acceptance limits. The samples were re-extracted outside the method required holding time and the method blank surrogate is within control limits. MW-201-W-210608 (410-43237-3) and (410-43237-D-3-C DU).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Seattle Terminal

Job ID: 410-43237-1

Client Sample ID: MW-70R-W-210607 — Lab Sample ID: 410-43237-1

No Detections.

Client Sample ID: MW-200-W-210607 — Lab Sample ID: 410-43237-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C7-C12 (1C)	210	J	250	19	ug/L	1		NWTPH-Gx	Total/NA

Client Sample ID: MW-201-W-210608 — Lab Sample ID: 410-43237-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C7-C12 (1C)	170	J	250	19	ug/L	1		NWTPH-Gx	Total/NA

Client Sample ID: MW-202-W-210608 — Lab Sample ID: 410-43237-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C7-C12 (1C)	39	J	250	19	ug/L	1		NWTPH-Gx	Total/NA

Client Sample ID: MW-203-W-210608 — Lab Sample ID: 410-43237-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C7-C12 (1C)	63	J	250	19	ug/L	1		NWTPH-Gx	Total/NA

Client Sample ID: MW-204-W-210608 — Lab Sample ID: 410-43237-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.31	J	1.0	0.30	ug/L	1		8260D/UST	Total/NA
C7-C12 (1C)	900		250	19	ug/L	1		NWTPH-Gx	Total/NA
C12-C24	67	J	100	47	ug/L	1		NWTPH-Dx	Total/NA

Client Sample ID: MW-205-W-210608 — Lab Sample ID: 410-43237-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C7-C12 (1C)	93	J	250	19	ug/L	1		NWTPH-Gx	Total/NA

Client Sample ID: MW-206-W-210608 — Lab Sample ID: 410-43237-8

No Detections.

Client Sample ID: MW-207-W-210607 — Lab Sample ID: 410-43237-9

No Detections.

Client Sample ID: MW-209-W-210609 — Lab Sample ID: 410-43237-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.32	J	1.0	0.30	ug/L	1		8260D/UST	Total/NA
C7-C12 (1C)	510		250	19	ug/L	1		NWTPH-Gx	Total/NA

Client Sample ID: MW-210-W-210609 — Lab Sample ID: 410-43237-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C7-C12 (1C)	45	J	250	19	ug/L	1		NWTPH-Gx	Total/NA

Client Sample ID: MW-211-W-210609 — Lab Sample ID: 410-43237-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C7-C12 (1C)	52	J	250	19	ug/L	1		NWTPH-Gx	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Seattle Terminal

Job ID: 410-43237-1

Client Sample ID: DUP-1-WD-210607 — Lab Sample ID: 410-43237-13

No Detections.

Client Sample ID: QA-T-210607 — Lab Sample ID: 410-43237-14

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-70R-W-210607

Lab Sample ID: 410-43237-1

Date Collected: 06/07/21 13:40

Matrix: Water

Date Received: 06/11/21 10:51

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			06/18/21 13:20	1
Ethylbenzene	ND		1.0	0.40	ug/L			06/18/21 13:20	1
Toluene	ND		1.0	0.30	ug/L			06/18/21 13:20	1
Xylenes, Total	ND		6.0	1.4	ug/L			06/18/21 13:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*06/18/21 13:20*	*1*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*06/18/21 13:20*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*06/18/21 13:20*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*06/18/21 13:20*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.054	0.011	ug/L		06/14/21 19:50	06/16/21 11:09	1
Benzo[a]pyrene	ND		0.054	0.011	ug/L		06/14/21 19:50	06/16/21 11:09	1
Benzo[b]fluoranthene	ND		0.054	0.011	ug/L		06/14/21 19:50	06/16/21 11:09	1
Benzo[k]fluoranthene	ND		0.054	0.011	ug/L		06/14/21 19:50	06/16/21 11:09	1
Chrysene	ND		0.054	0.011	ug/L		06/14/21 19:50	06/16/21 11:09	1
Dibenz(a,h)anthracene	ND		0.054	0.022	ug/L		06/14/21 19:50	06/16/21 11:09	1
Indeno[1,2,3-cd]pyrene	ND		0.054	0.022	ug/L		06/14/21 19:50	06/16/21 11:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*55*		*10 - 110*	*06/14/21 19:50*	*06/16/21 11:09*	*1*
1-Methylnaphthalene-d10 (Surr)	*64*		*36 - 111*	*06/14/21 19:50*	*06/16/21 11:09*	*1*
Fluoranthene-d10 (Surr)	*86*		*47 - 128*	*06/14/21 19:50*	*06/16/21 11:09*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	ND		250	19	ug/L			06/14/21 20:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*99*		*50 - 150*		*06/14/21 20:02*	*1*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND	H	110	49	ug/L		06/15/21 16:55	06/18/21 00:40	1
C24-C40	ND	H	270	110	ug/L		06/15/21 16:55	06/18/21 00:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o- terphenyl (Surr)	*45*	*S1-*	*50 - 150*	*06/15/21 16:55*	*06/18/21 00:40*	*1*

Client Sample ID: MW-200-W-210607

Lab Sample ID: 410-43237-2

Date Collected: 06/07/21 17:00

Matrix: Water

Date Received: 06/11/21 10:51

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			06/18/21 13:44	1
Ethylbenzene	ND		1.0	0.40	ug/L			06/18/21 13:44	1
Toluene	ND		1.0	0.30	ug/L			06/18/21 13:44	1
Xylenes, Total	ND		6.0	1.4	ug/L			06/18/21 13:44	1

Client Sample ID: MW-200-W-210607

Lab Sample ID: 410-43237-2

Date Collected: 06/07/21 17:00

Matrix: Water

Date Received: 06/11/21 10:51

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*06/18/21 13:44*	*1*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*06/18/21 13:44*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*06/18/21 13:44*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*06/18/21 13:44*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.052	0.010	ug/L		06/14/21 19:50	06/16/21 11:40	1
Benzo[a]pyrene	ND		0.052	0.010	ug/L		06/14/21 19:50	06/16/21 11:40	1
Benzo[b]fluoranthene	ND		0.052	0.010	ug/L		06/14/21 19:50	06/16/21 11:40	1
Benzo[k]fluoranthene	ND		0.052	0.010	ug/L		06/14/21 19:50	06/16/21 11:40	1
Chrysene	ND		0.052	0.010	ug/L		06/14/21 19:50	06/16/21 11:40	1
Dibenz(a,h)anthracene	ND		0.052	0.021	ug/L		06/14/21 19:50	06/16/21 11:40	1
Indeno[1,2,3-cd]pyrene	ND		0.052	0.021	ug/L		06/14/21 19:50	06/16/21 11:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*65*		*10 - 110*	*06/14/21 19:50*	*06/16/21 11:40*	*1*
1-Methylnaphthalene-d10 (Surr)	*68*		*36 - 111*	*06/14/21 19:50*	*06/16/21 11:40*	*1*
Fluoranthene-d10 (Surr)	*97*		*47 - 128*	*06/14/21 19:50*	*06/16/21 11:40*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	**210**	**J**	250	19	ug/L			06/14/21 20:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*109*		*50 - 150*		*06/14/21 20:49*	*1*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		110	47	ug/L		06/15/21 16:55	06/18/21 01:02	1
C24-C40	ND		260	110	ug/L		06/15/21 16:55	06/18/21 01:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Decanoic Acid (Surr)	*0.3*		*0 - 1*	*06/15/21 16:55*	*06/18/21 01:02*	*1*
o- terphenyl (Surr)	*45*	*S1-*	*50 - 150*	*06/15/21 16:55*	*06/18/21 01:02*	*1*

Client Sample ID: MW-201-W-210608

Lab Sample ID: 410-43237-3

Date Collected: 06/08/21 13:14

Matrix: Water

Date Received: 06/11/21 10:51

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			06/18/21 14:08	1
Ethylbenzene	ND		1.0	0.40	ug/L			06/18/21 14:08	1
Toluene	ND		1.0	0.30	ug/L			06/18/21 14:08	1
Xylenes, Total	ND		6.0	1.4	ug/L			06/18/21 14:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*06/18/21 14:08*	*1*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*06/18/21 14:08*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*06/18/21 14:08*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*06/18/21 14:08*	*1*

Client Sample ID: MW-201-W-210608

Lab Sample ID: 410-43237-3

Date Collected: 06/08/21 13:14

Matrix: Water

Date Received: 06/11/21 10:51

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.052	0.010	ug/L		06/15/21 18:45	06/16/21 12:41	1
Benzo[a]pyrene	ND		0.052	0.010	ug/L		06/15/21 18:45	06/16/21 12:41	1
Benzo[b]fluoranthene	ND		0.052	0.010	ug/L		06/15/21 18:45	06/16/21 12:41	1
Benzo[k]fluoranthene	ND		0.052	0.010	ug/L		06/15/21 18:45	06/16/21 12:41	1
Chrysene	ND		0.052	0.010	ug/L		06/15/21 18:45	06/16/21 12:41	1
Dibenz(a,h)anthracene	ND		0.052	0.021	ug/L		06/15/21 18:45	06/16/21 12:41	1
Indeno[1,2,3-cd]pyrene	ND		0.052	0.021	ug/L		06/15/21 18:45	06/16/21 12:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*72*		*10 - 110*	*06/15/21 18:45*	*06/16/21 12:41*	*1*
1-Methylnaphthalene-d10 (Surr)	*84*		*36 - 111*	*06/15/21 18:45*	*06/16/21 12:41*	*1*
Fluoranthene-d10 (Surr)	*110*		*47 - 128*	*06/15/21 18:45*	*06/16/21 12:41*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	**170**	**J**	250	19	ug/L			06/14/21 21:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*108*		*50 - 150*		*06/14/21 21:13*	*1*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		100	47	ug/L		06/15/21 16:55	06/18/21 01:25	1
C24-C40	ND		260	100	ug/L		06/15/21 16:55	06/18/21 01:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Decanoic Acid (Surr)	*0.3*		*0 - 1*	*06/15/21 16:55*	*06/18/21 01:25*	*1*
o- terphenyl (Surr)	*51*		*50 - 150*	*06/15/21 16:55*	*06/18/21 01:25*	*1*

Client Sample ID: MW-202-W-210608

Lab Sample ID: 410-43237-4

Date Collected: 06/08/21 11:25

Matrix: Water

Date Received: 06/11/21 10:51

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			06/18/21 14:31	1
Ethylbenzene	ND		1.0	0.40	ug/L			06/18/21 14:31	1
Toluene	ND		1.0	0.30	ug/L			06/18/21 14:31	1
Xylenes, Total	ND		6.0	1.4	ug/L			06/18/21 14:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*06/18/21 14:31*	*1*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*06/18/21 14:31*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*06/18/21 14:31*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*06/18/21 14:31*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.053	0.011	ug/L		06/15/21 18:45	06/16/21 13:12	1
Benzo[a]pyrene	ND		0.053	0.011	ug/L		06/15/21 18:45	06/16/21 13:12	1
Benzo[b]fluoranthene	ND		0.053	0.011	ug/L		06/15/21 18:45	06/16/21 13:12	1
Benzo[k]fluoranthene	ND		0.053	0.011	ug/L		06/15/21 18:45	06/16/21 13:12	1

Client Sample ID: MW-202-W-210608

Date Collected: 06/08/21 11:25
Date Received: 06/11/21 10:51

Lab Sample ID: 410-43237-4

Matrix: Water

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chrysene	ND		0.053	0.011	ug/L		06/15/21 18:45	06/16/21 13:12	1
Dibenz(a,h)anthracene	ND		0.053	0.021	ug/L		06/15/21 18:45	06/16/21 13:12	1
Indeno[1,2,3-cd]pyrene	ND		0.053	0.021	ug/L		06/15/21 18:45	06/16/21 13:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*47*		*10 - 110*	*06/15/21 18:45*	*06/16/21 13:12*	*1*
1-Methylnaphthalene-d10 (Surr)	*74*		*36 - 111*	*06/15/21 18:45*	*06/16/21 13:12*	*1*
Fluoranthene-d10 (Surr)	*106*		*47 - 128*	*06/15/21 18:45*	*06/16/21 13:12*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	39	J	250	19	ug/L			06/14/21 21:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*106*		*50 - 150*		*06/14/21 21:36*	*1*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		110	48	ug/L		06/15/21 16:55	06/18/21 02:10	1
C24-C40	ND		270	110	ug/L		06/15/21 16:55	06/18/21 02:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Decanoic Acid (Surr)	*0.3*		*0 - 1*	*06/15/21 16:55*	*06/18/21 02:10*	*1*
o- terphenyl (Surr)	*38*	*S1-*	*50 - 150*	*06/15/21 16:55*	*06/18/21 02:10*	*1*

Client Sample ID: MW-203-W-210608

Date Collected: 06/08/21 13:05
Date Received: 06/11/21 10:51

Lab Sample ID: 410-43237-5

Matrix: Water

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			06/18/21 14:55	1
Ethylbenzene	ND		1.0	0.40	ug/L			06/18/21 14:55	1
Toluene	ND		1.0	0.30	ug/L			06/18/21 14:55	1
Xylenes, Total	ND		6.0	1.4	ug/L			06/18/21 14:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*06/18/21 14:55*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*06/18/21 14:55*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*06/18/21 14:55*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*06/18/21 14:55*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.051	0.010	ug/L		06/15/21 18:45	06/16/21 13:42	1
Benzo[a]pyrene	ND		0.051	0.010	ug/L		06/15/21 18:45	06/16/21 13:42	1
Benzo[b]fluoranthene	ND		0.051	0.010	ug/L		06/15/21 18:45	06/16/21 13:42	1
Benzo[k]fluoranthene	ND		0.051	0.010	ug/L		06/15/21 18:45	06/16/21 13:42	1
Chrysene	ND		0.051	0.010	ug/L		06/15/21 18:45	06/16/21 13:42	1
Dibenz(a,h)anthracene	ND		0.051	0.020	ug/L		06/15/21 18:45	06/16/21 13:42	1
Indeno[1,2,3-cd]pyrene	ND		0.051	0.020	ug/L		06/15/21 18:45	06/16/21 13:42	1

Client Sample ID: MW-203-W-210608

Lab Sample ID: 410-43237-5

Date Collected: 06/08/21 13:05

Matrix: Water

Date Received: 06/11/21 10:51

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Benzo(a)pyrene-d12 (Surr)	*72*		*10 - 110*	*06/15/21 18:45*	*06/16/21 13:42*	*1*
1-Methylnaphthalene-d10 (Surr)	*76*		*36 - 111*	*06/15/21 18:45*	*06/16/21 13:42*	*1*
Fluoranthene-d10 (Surr)	*110*		*47 - 128*	*06/15/21 18:45*	*06/16/21 13:42*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	63	J	250	19	ug/L			06/14/21 22:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	*103*		*50 - 150*		*06/14/21 22:00*	*1*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		100	46	ug/L		06/15/21 16:55	06/18/21 02:56	1
C24-C40	ND		260	100	ug/L		06/15/21 16:55	06/18/21 02:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Decanoic Acid (Surr)	*0.3*		*0 - 1*	*06/15/21 16:55*	*06/18/21 02:56*	*1*
o- terphenyl (Surr)	*36*	*S1-*	*50 - 150*	*06/15/21 16:55*	*06/18/21 02:56*	*1*

Client Sample ID: MW-204-W-210608

Lab Sample ID: 410-43237-6

Date Collected: 06/08/21 15:30

Matrix: Water

Date Received: 06/11/21 10:51

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			06/18/21 15:19	1
Ethylbenzene	ND		1.0	0.40	ug/L			06/18/21 15:19	1
Toluene	0.31	J	1.0	0.30	ug/L			06/18/21 15:19	1
Xylenes, Total	ND		6.0	1.4	ug/L			06/18/21 15:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*06/18/21 15:19*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*06/18/21 15:19*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 120*		*06/18/21 15:19*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*06/18/21 15:19*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.052	0.010	ug/L		06/15/21 18:45	06/16/21 14:13	1
Benzo[a]pyrene	ND		0.052	0.010	ug/L		06/15/21 18:45	06/16/21 14:13	1
Benzo[b]fluoranthene	ND		0.052	0.010	ug/L		06/15/21 18:45	06/16/21 14:13	1
Benzo[k]fluoranthene	ND		0.052	0.010	ug/L		06/15/21 18:45	06/16/21 14:13	1
Chrysene	ND		0.052	0.010	ug/L		06/15/21 18:45	06/16/21 14:13	1
Dibenz(a,h)anthracene	ND		0.052	0.021	ug/L		06/15/21 18:45	06/16/21 14:13	1
Indeno[1,2,3-cd]pyrene	ND		0.052	0.021	ug/L		06/15/21 18:45	06/16/21 14:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Benzo(a)pyrene-d12 (Surr)	*70*		*10 - 110*	*06/15/21 18:45*	*06/16/21 14:13*	*1*
1-Methylnaphthalene-d10 (Surr)	*92*		*36 - 111*	*06/15/21 18:45*	*06/16/21 14:13*	*1*
Fluoranthene-d10 (Surr)	*117*		*47 - 128*	*06/15/21 18:45*	*06/16/21 14:13*	*1*

Client Sample ID: MW-204-W-210608

Lab Sample ID: 410-43237-6

Date Collected: 06/08/21 15:30

Matrix: Water

Date Received: 06/11/21 10:51

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	900		250	19	ug/L			06/14/21 22:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*107*		*50 - 150*		*06/14/21 22:23*	*1*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	67	J	100	47	ug/L		06/15/21 16:55	06/18/21 03:18	1
C24-C40	ND		260	100	ug/L		06/15/21 16:55	06/18/21 03:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Decanoic Acid (Surr)	*0.3*		*0 - 1*	*06/15/21 16:55*	*06/18/21 03:18*	*1*
o- terphenyl (Surr)	*39*	*S1-*	*50 - 150*	*06/15/21 16:55*	*06/18/21 03:18*	*1*

Client Sample ID: MW-205-W-210608

Lab Sample ID: 410-43237-7

Date Collected: 06/08/21 15:25

Matrix: Water

Date Received: 06/11/21 10:51

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			06/18/21 15:42	1
Ethylbenzene	ND		1.0	0.40	ug/L			06/18/21 15:42	1
Toluene	ND		1.0	0.30	ug/L			06/18/21 15:42	1
Xylenes, Total	ND		6.0	1.4	ug/L			06/18/21 15:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*06/18/21 15:42*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*06/18/21 15:42*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*06/18/21 15:42*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*06/18/21 15:42*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.056	0.011	ug/L		06/15/21 18:45	06/16/21 14:43	1
Benzo[a]pyrene	ND		0.056	0.011	ug/L		06/15/21 18:45	06/16/21 14:43	1
Benzo[b]fluoranthene	ND		0.056	0.011	ug/L		06/15/21 18:45	06/16/21 14:43	1
Benzo[k]fluoranthene	ND		0.056	0.011	ug/L		06/15/21 18:45	06/16/21 14:43	1
Chrysene	ND		0.056	0.011	ug/L		06/15/21 18:45	06/16/21 14:43	1
Dibenz(a,h)anthracene	ND		0.056	0.022	ug/L		06/15/21 18:45	06/16/21 14:43	1
Indeno[1,2,3-cd]pyrene	ND		0.056	0.022	ug/L		06/15/21 18:45	06/16/21 14:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*53*		*10 - 110*	*06/15/21 18:45*	*06/16/21 14:43*	*1*
1-Methylnaphthalene-d10 (Surr)	*63*		*36 - 111*	*06/15/21 18:45*	*06/16/21 14:43*	*1*
Fluoranthene-d10 (Surr)	*86*		*47 - 128*	*06/15/21 18:45*	*06/16/21 14:43*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	93	J	250	19	ug/L			06/14/21 22:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*104*		*50 - 150*		*06/14/21 22:47*	*1*

Client Sample ID: MW-205-W-210608

Lab Sample ID: 410-43237-7

Date Collected: 06/08/21 15:25

Matrix: Water

Date Received: 06/11/21 10:51

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		110	51	ug/L		06/15/21 16:55	06/18/21 03:41	1
C24-C40	ND		280	110	ug/L		06/15/21 16:55	06/18/21 03:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Decanoic Acid (Surr)	*0.3*		*0 - 1*	*06/15/21 16:55*	*06/18/21 03:41*	*1*
o- terphenyl (Surr)	*48*	*S1-*	*50 - 150*	*06/15/21 16:55*	*06/18/21 03:41*	*1*

Client Sample ID: MW-206-W-210608

Lab Sample ID: 410-43237-8

Date Collected: 06/08/21 11:40

Matrix: Water

Date Received: 06/11/21 10:51

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			06/18/21 16:06	1
Ethylbenzene	ND		1.0	0.40	ug/L			06/18/21 16:06	1
Toluene	ND		1.0	0.30	ug/L			06/18/21 16:06	1
Xylenes, Total	ND		6.0	1.4	ug/L			06/18/21 16:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*06/18/21 16:06*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*06/18/21 16:06*	*1*
Dibromofluoromethane (Surr)	*108*		*80 - 120*		*06/18/21 16:06*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*06/18/21 16:06*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.054	0.011	ug/L		06/15/21 18:45	06/16/21 15:14	1
Benzo[a]pyrene	ND		0.054	0.011	ug/L		06/15/21 18:45	06/16/21 15:14	1
Benzo[b]fluoranthene	ND		0.054	0.011	ug/L		06/15/21 18:45	06/16/21 15:14	1
Benzo[k]fluoranthene	ND		0.054	0.011	ug/L		06/15/21 18:45	06/16/21 15:14	1
Chrysene	ND		0.054	0.011	ug/L		06/15/21 18:45	06/16/21 15:14	1
Dibenz(a,h)anthracene	ND		0.054	0.022	ug/L		06/15/21 18:45	06/16/21 15:14	1
Indeno[1,2,3-cd]pyrene	ND		0.054	0.022	ug/L		06/15/21 18:45	06/16/21 15:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*62*		*10 - 110*	*06/15/21 18:45*	*06/16/21 15:14*	*1*
1-Methylnaphthalene-d10 (Surr)	*78*		*36 - 111*	*06/15/21 18:45*	*06/16/21 15:14*	*1*
Fluoranthene-d10 (Surr)	*104*		*47 - 128*	*06/15/21 18:45*	*06/16/21 15:14*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	ND		250	19	ug/L			06/14/21 23:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*101*		*50 - 150*		*06/14/21 23:11*	*1*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		100	45	ug/L		06/15/21 16:55	06/18/21 04:04	1
C24-C40	ND		250	100	ug/L		06/15/21 16:55	06/18/21 04:04	1

Client Sample ID: MW-206-W-210608

Lab Sample ID: 410-43237-8

Date Collected: 06/08/21 11:40

Matrix: Water

Date Received: 06/11/21 10:51

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Decanoic Acid (Surr)	*0.3*		*0 - 1*	*06/15/21 16:55*	*06/18/21 04:04*	*1*
o- terphenyl (Surr)	*28*	*S1-*	*50 - 150*	*06/15/21 16:55*	*06/18/21 04:04*	*1*

Client Sample ID: MW-207-W-210607

Lab Sample ID: 410-43237-9

Date Collected: 06/07/21 15:30

Matrix: Water

Date Received: 06/11/21 10:51

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			06/18/21 16:30	1
Ethylbenzene	ND		1.0	0.40	ug/L			06/18/21 16:30	1
Toluene	ND		1.0	0.30	ug/L			06/18/21 16:30	1
Xylenes, Total	ND		6.0	1.4	ug/L			06/18/21 16:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*		*06/18/21 16:30*	*1*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*06/18/21 16:30*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*06/18/21 16:30*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*06/18/21 16:30*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.053	0.011	ug/L		06/14/21 19:50	06/16/21 12:10	1
Benzo[a]pyrene	ND		0.053	0.011	ug/L		06/14/21 19:50	06/16/21 12:10	1
Benzo[b]fluoranthene	ND		0.053	0.011	ug/L		06/14/21 19:50	06/16/21 12:10	1
Benzo[k]fluoranthene	ND		0.053	0.011	ug/L		06/14/21 19:50	06/16/21 12:10	1
Chrysene	ND		0.053	0.011	ug/L		06/14/21 19:50	06/16/21 12:10	1
Dibenz(a,h)anthracene	ND		0.053	0.021	ug/L		06/14/21 19:50	06/16/21 12:10	1
Indeno[1,2,3-cd]pyrene	ND		0.053	0.021	ug/L		06/14/21 19:50	06/16/21 12:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Benzo(a)pyrene-d12 (Surr)	*59*		*10 - 110*	*06/14/21 19:50*	*06/16/21 12:10*	*1*
1-Methylnaphthalene-d10 (Surr)	*65*		*36 - 111*	*06/14/21 19:50*	*06/16/21 12:10*	*1*
Fluoranthene-d10 (Surr)	*106*		*47 - 128*	*06/14/21 19:50*	*06/16/21 12:10*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	ND		250	19	ug/L			06/14/21 23:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	*105*		*50 - 150*		*06/14/21 23:34*	*1*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		110	48	ug/L		06/15/21 16:55	06/18/21 04:26	1
C24-C40	ND		270	110	ug/L		06/15/21 16:55	06/18/21 04:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Decanoic Acid (Surr)	*0.3*		*0 - 1*	*06/15/21 16:55*	*06/18/21 04:26*	*1*
o- terphenyl (Surr)	*36*	*S1-*	*50 - 150*	*06/15/21 16:55*	*06/18/21 04:26*	*1*

Client Sample ID: MW-209-W-210609

Lab Sample ID: 410-43237-10

Date Collected: 06/09/21 14:15

Matrix: Water

Date Received: 06/11/21 10:51

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			06/18/21 12:21	1
Ethylbenzene	ND		1.0	0.40	ug/L			06/18/21 12:21	1
Toluene	**0.32**	**J**	1.0	0.30	ug/L			06/18/21 12:21	1
Xylenes, Total	ND		6.0	1.4	ug/L			06/18/21 12:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*06/18/21 12:21*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*06/18/21 12:21*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*06/18/21 12:21*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*06/18/21 12:21*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.052	0.010	ug/L		06/16/21 09:50	06/17/21 14:57	1
Benzo[a]pyrene	ND		0.052	0.010	ug/L		06/16/21 09:50	06/17/21 14:57	1
Benzo[b]fluoranthene	ND		0.052	0.010	ug/L		06/16/21 09:50	06/17/21 14:57	1
Benzo[k]fluoranthene	ND		0.052	0.010	ug/L		06/16/21 09:50	06/17/21 14:57	1
Chrysene	ND		0.052	0.010	ug/L		06/16/21 09:50	06/17/21 14:57	1
Dibenz(a,h)anthracene	ND		0.052	0.021	ug/L		06/16/21 09:50	06/17/21 14:57	1
Indeno[1,2,3-cd]pyrene	ND		0.052	0.021	ug/L		06/16/21 09:50	06/17/21 14:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*38*		*10 - 110*	*06/16/21 09:50*	*06/17/21 14:57*	*1*
1-Methylnaphthalene-d10 (Surr)	*78*		*36 - 111*	*06/16/21 09:50*	*06/17/21 14:57*	*1*
Fluoranthene-d10 (Surr)	*114*		*47 - 128*	*06/16/21 09:50*	*06/17/21 14:57*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	**510**		250	19	ug/L			06/14/21 23:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*111*		*50 - 150*		*06/14/21 23:58*	*1*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		110	48	ug/L		06/16/21 09:45	06/21/21 02:58	1
C24-C40	ND		260	110	ug/L		06/16/21 09:45	06/21/21 02:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o- terphenyl (Surr)	*57*		*50 - 150*	*06/16/21 09:45*	*06/21/21 02:58*	*1*

Client Sample ID: MW-210-W-210609

Lab Sample ID: 410-43237-11

Date Collected: 06/09/21 14:10

Matrix: Water

Date Received: 06/11/21 10:51

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			06/18/21 12:44	1
Ethylbenzene	ND		1.0	0.40	ug/L			06/18/21 12:44	1
Toluene	ND		1.0	0.30	ug/L			06/18/21 12:44	1
Xylenes, Total	ND		6.0	1.4	ug/L			06/18/21 12:44	1

Client Sample ID: MW-210-W-210609

Lab Sample ID: 410-43237-11

Date Collected: 06/09/21 14:10

Matrix: Water

Date Received: 06/11/21 10:51

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*06/18/21 12:44*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*06/18/21 12:44*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*06/18/21 12:44*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*06/18/21 12:44*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.054	0.011	ug/L		06/16/21 09:50	06/17/21 15:28	1
Benzo[a]pyrene	ND		0.054	0.011	ug/L		06/16/21 09:50	06/17/21 15:28	1
Benzo[b]fluoranthene	ND		0.054	0.011	ug/L		06/16/21 09:50	06/17/21 15:28	1
Benzo[k]fluoranthene	ND		0.054	0.011	ug/L		06/16/21 09:50	06/17/21 15:28	1
Chrysene	ND		0.054	0.011	ug/L		06/16/21 09:50	06/17/21 15:28	1
Dibenz(a,h)anthracene	ND		0.054	0.021	ug/L		06/16/21 09:50	06/17/21 15:28	1
Indeno[1,2,3-cd]pyrene	ND		0.054	0.021	ug/L		06/16/21 09:50	06/17/21 15:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*62*		*10 - 110*	*06/16/21 09:50*	*06/17/21 15:28*	*1*
1-Methylnaphthalene-d10 (Surr)	*79*		*36 - 111*	*06/16/21 09:50*	*06/17/21 15:28*	*1*
Fluoranthene-d10 (Surr)	*103*		*47 - 128*	*06/16/21 09:50*	*06/17/21 15:28*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	45	J	250	19	ug/L			06/15/21 05:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*106*		*50 - 150*		*06/15/21 05:27*	*1*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		110	49	ug/L		06/16/21 09:45	06/21/21 03:43	1
C24-C40	ND		270	110	ug/L		06/16/21 09:45	06/21/21 03:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o- terphenyl (Surr)	*52*		*50 - 150*	*06/16/21 09:45*	*06/21/21 03:43*	*1*

Client Sample ID: MW-211-W-210609

Lab Sample ID: 410-43237-12

Date Collected: 06/09/21 15:35

Matrix: Water

Date Received: 06/11/21 10:51

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			06/18/21 13:08	1
Ethylbenzene	ND		1.0	0.40	ug/L			06/18/21 13:08	1
Toluene	ND		1.0	0.30	ug/L			06/18/21 13:08	1
Xylenes, Total	ND		6.0	1.4	ug/L			06/18/21 13:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*06/18/21 13:08*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*06/18/21 13:08*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*06/18/21 13:08*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*06/18/21 13:08*	*1*

Client Sample ID: MW-211-W-210609

Lab Sample ID: 410-43237-12

Date Collected: 06/09/21 15:35

Matrix: Water

Date Received: 06/11/21 10:51

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.054	0.011	ug/L		06/16/21 09:50	06/21/21 18:51	1
Benzo[a]pyrene	ND		0.054	0.011	ug/L		06/16/21 09:50	06/21/21 18:51	1
Benzo[b]fluoranthene	ND		0.054	0.011	ug/L		06/16/21 09:50	06/21/21 18:51	1
Benzo[k]fluoranthene	ND		0.054	0.011	ug/L		06/16/21 09:50	06/21/21 18:51	1
Chrysene	ND		0.054	0.011	ug/L		06/16/21 09:50	06/21/21 18:51	1
Dibenz(a,h)anthracene	ND		0.054	0.021	ug/L		06/16/21 09:50	06/21/21 18:51	1
Indeno[1,2,3-cd]pyrene	ND		0.054	0.021	ug/L		06/16/21 09:50	06/21/21 18:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*42*		*10 - 110*	*06/16/21 09:50*	*06/21/21 18:51*	*1*
1-Methylnaphthalene-d10 (Surr)	*65*		*36 - 111*	*06/16/21 09:50*	*06/21/21 18:51*	*1*
Fluoranthene-d10 (Surr)	*86*		*47 - 128*	*06/16/21 09:50*	*06/21/21 18:51*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	52	J	250	19	ug/L			06/15/21 05:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*104*		*50 - 150*		*06/15/21 05:51*	*1*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		110	48	ug/L		06/16/21 09:45	06/21/21 04:06	1
C24-C40	ND		270	110	ug/L		06/16/21 09:45	06/21/21 04:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o- terphenyl (Surr)	*71*		*50 - 150*	*06/16/21 09:45*	*06/21/21 04:06*	*1*

Client Sample ID: DUP-1-WD-210607

Lab Sample ID: 410-43237-13

Date Collected: 06/07/21 00:00

Matrix: Water

Date Received: 06/11/21 10:51

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			06/18/21 13:32	1
Ethylbenzene	ND		1.0	0.40	ug/L			06/18/21 13:32	1
Toluene	ND		1.0	0.30	ug/L			06/18/21 13:32	1
Xylenes, Total	ND		6.0	1.4	ug/L			06/18/21 13:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*06/18/21 13:32*	*1*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*06/18/21 13:32*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*06/18/21 13:32*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*06/18/21 13:32*	*1*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.056	0.011	ug/L		06/16/21 09:50	06/21/21 19:21	1
Benzo[a]pyrene	ND		0.056	0.011	ug/L		06/16/21 09:50	06/21/21 19:21	1
Benzo[b]fluoranthene	ND		0.056	0.011	ug/L		06/16/21 09:50	06/21/21 19:21	1
Benzo[k]fluoranthene	ND		0.056	0.011	ug/L		06/16/21 09:50	06/21/21 19:21	1
Chrysene	ND		0.056	0.011	ug/L		06/16/21 09:50	06/21/21 19:21	1

Client Sample ID: DUP-1-WD-210607

Lab Sample ID: 410-43237-13

Date Collected: 06/07/21 00:00

Matrix: Water

Date Received: 06/11/21 10:51

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	ND		0.056	0.023	ug/L		06/16/21 09:50	06/21/21 19:21	1
Indeno[1,2,3-cd]pyrene	ND		0.056	0.023	ug/L		06/16/21 09:50	06/21/21 19:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*49*		*10 - 110*	*06/16/21 09:50*	*06/21/21 19:21*	*1*
1-Methylnaphthalene-d10 (Surr)	*56*		*36 - 111*	*06/16/21 09:50*	*06/21/21 19:21*	*1*
Fluoranthene-d10 (Surr)	*77*		*47 - 128*	*06/16/21 09:50*	*06/21/21 19:21*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	ND		250	19	ug/L			06/15/21 06:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*107*		*50 - 150*		*06/15/21 06:15*	*1*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		110	49	ug/L		06/16/21 09:45	06/21/21 04:28	1
C24-C40	ND		270	110	ug/L		06/16/21 09:45	06/21/21 04:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o- terphenyl (Surr)	*71*		*50 - 150*	*06/16/21 09:45*	*06/21/21 04:28*	*1*

Client Sample ID: QA-T-210607

Lab Sample ID: 410-43237-14

Date Collected: 06/07/21 00:00

Matrix: Water

Date Received: 06/11/21 10:51

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			06/18/21 12:56	1
Ethylbenzene	ND		1.0	0.40	ug/L			06/18/21 12:56	1
Toluene	ND		1.0	0.30	ug/L			06/18/21 12:56	1
Xylenes, Total	ND		6.0	1.4	ug/L			06/18/21 12:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*06/18/21 12:56*	*1*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*		*06/18/21 12:56*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*06/18/21 12:56*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*06/18/21 12:56*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	ND		250	19	ug/L			06/15/21 03:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene (fid) (1C)	*109*		*50 - 150*		*06/15/21 03:06*	*1*

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Seattle Terminal

Job ID: 410-43237-1

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-43237-1	MW-70R-W-210607	105	93	106	104
410-43237-2	MW-200-W-210607	104	93	106	105
410-43237-3	MW-201-W-210608	104	93	106	105
410-43237-4	MW-202-W-210608	105	91	106	105
410-43237-5	MW-203-W-210608	104	92	106	104
410-43237-6	MW-204-W-210608	104	92	107	103
410-43237-7	MW-205-W-210608	105	94	106	103
410-43237-8	MW-206-W-210608	105	92	108	104
410-43237-9	MW-207-W-210607	105	91	106	104
410-43237-10	MW-209-W-210609	102	95	98	103
410-43237-11	MW-210-W-210609	102	92	99	102
410-43237-12	MW-211-W-210609	101	94	98	101
410-43237-13	DUP-1-WD-210607	102	93	99	102
410-43237-14	QA-T-210607	104	92	106	104
LCS 410-139447/4	Lab Control Sample	105	94	105	105
LCS 410-139450/4	Lab Control Sample	103	94	98	102
LCSD 410-139447/5	Lab Control Sample Dup	105	93	104	104
LCSD 410-139450/5	Lab Control Sample Dup	103	96	98	102
MB 410-139447/6	Method Blank	103	91	103	104
MB 410-139450/6	Method Blank	101	93	98	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		BAPd12	MNPd10	FLN10
Lab Sample ID	Client Sample ID	(10-110)	(36-111)	(47-128)
410-43237-1	MW-70R-W-210607	55	64	86
410-43237-2	MW-200-W-210607	65	68	97
410-43237-3	MW-201-W-210608	72	84	110
410-43237-4	MW-202-W-210608	47	74	106
410-43237-5	MW-203-W-210608	72	76	110
410-43237-6	MW-204-W-210608	70	92	117
410-43237-7	MW-205-W-210608	53	63	86
410-43237-8	MW-206-W-210608	62	78	104
410-43237-9	MW-207-W-210607	59	65	106
410-43237-10	MW-209-W-210609	38	78	114
410-43237-11	MW-210-W-210609	62	79	103
410-43237-12	MW-211-W-210609	42	65	86
410-43237-13	DUP-1-WD-210607	49	56	77
LCS 410-138142/2-A	Lab Control Sample	79	67	90
LCS 410-138340/2-A	Lab Control Sample	80	69	91
LCSD 410-138142/3-A	Lab Control Sample Dup	91	83	104
MB 410-138142/1-A	Method Blank	79	66	90

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	BAPd12 (10-110)	MNPd10 (36-111)	FLN10 (47-128)
MB 410-138340/1-A	Method Blank	64	65	76

Surrogate Legend

BAPd12 = Benzo(a)pyrene-d12 (Surr)
MNPd10 = 1-Methylnaphthalene-d10 (Surr)
FLN10 = Fluoranthene-d10 (Surr)

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	TFT-F1 (50-150)
410-43237-1	MW-70R-W-210607	99
410-43237-2	MW-200-W-210607	109
410-43237-3	MW-201-W-210608	108
410-43237-4	MW-202-W-210608	106
410-43237-5	MW-203-W-210608	103
410-43237-6	MW-204-W-210608	107
410-43237-7	MW-205-W-210608	104
410-43237-8	MW-206-W-210608	101
410-43237-9	MW-207-W-210607	105
410-43237-10	MW-209-W-210609	111
410-43237-11	MW-210-W-210609	106
410-43237-12	MW-211-W-210609	104
410-43237-13	DUP-1-WD-210607	107
410-43237-14	QA-T-210607	109
LCS 410-137486/5	Lab Control Sample	99
LCS 410-137491/4	Lab Control Sample	98
LCSD 410-137486/6	Lab Control Sample Dup	107
LCSD 410-137491/5	Lab Control Sample Dup	103
MB 410-137486/4	Method Blank	113
MB 410-137491/3	Method Blank	105

Surrogate Legend

TFT-F = a,a,a-Trifluorotoluene (fid)

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	NDA (0-1)	OTP (50-150)
410-43237-1	MW-70R-W-210607		45 S1-
410-43237-2	MW-200-W-210607	0.3	45 S1-
410-43237-3	MW-201-W-210608	0.3	51
410-43237-3 DU	MW-201-W-210608	0.3	53
410-43237-4	MW-202-W-210608	0.3	38 S1-
410-43237-4 DU	MW-202-W-210608	0.3	44 S1-
410-43237-5	MW-203-W-210608	0.3	36 S1-
410-43237-6	MW-204-W-210608	0.3	39 S1-
410-43237-7	MW-205-W-210608	0.3	48 S1-

Surrogate Summary

Client: ARCADIS U.S., Inc.
Job ID: 410-43237-1
Project/Site: Seattle Terminal

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		NDA	OTP								
Lab Sample ID	Client Sample ID	(0-1)	(50-150)								
410-43237-8	MW-206-W-210608	0.3	28 S1-								
410-43237-9	MW-207-W-210607	0.3	36 S1-								
410-43237-10	MW-209-W-210609		57								
410-43237-10 DU	MW-209-W-210609		58								
410-43237-11	MW-210-W-210609		52								
410-43237-12	MW-211-W-210609		71								
410-43237-13	DUP-1-WD-210607		71								
LCS 410-138153/2-B	Lab Control Sample		52								
LCS 410-138353/2-B	Lab Control Sample		66								
LCSD 410-138153/3-B	Lab Control Sample Dup		56								
LCSD 410-138353/3-B	Lab Control Sample Dup		60								
MB 410-138153/1-B	Method Blank		47 S1-								
MB 410-138353/1-B	Method Blank		68								

Surrogate Legend

NDA = n-Decanoic Acid (Surr)

OTP = o- terphenyl (Surr)

Method: 8260D/UST - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-139447/6
Matrix: Water
Analysis Batch: 139447

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			06/18/21 11:45	1
Ethylbenzene	ND		1.0	0.40	ug/L			06/18/21 11:45	1
Toluene	ND		1.0	0.30	ug/L			06/18/21 11:45	1
Xylenes, Total	ND		6.0	1.4	ug/L			06/18/21 11:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*06/18/21 11:45*	*1*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*06/18/21 11:45*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*06/18/21 11:45*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*06/18/21 11:45*	*1*

Lab Sample ID: LCS 410-139447/4
Matrix: Water
Analysis Batch: 139447

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			20.0	21.9		ug/L		110	80 - 120		
Ethylbenzene			20.0	21.1		ug/L		106	80 - 120		
Toluene			20.0	21.5		ug/L		108	80 - 120		
Xylenes, Total			60.0	63.1		ug/L		105	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*
Dibromofluoromethane (Surr)	*105*		*80 - 120*
Toluene-d8 (Surr)	*105*		*80 - 120*

Lab Sample ID: LCSD 410-139447/5
Matrix: Water
Analysis Batch: 139447

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			20.0	22.2		ug/L		111	80 - 120	1	30
Ethylbenzene			20.0	21.4		ug/L		107	80 - 120	1	30
Toluene			20.0	21.8		ug/L		109	80 - 120	1	30
Xylenes, Total			60.0	63.9		ug/L		107	80 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*105*		*80 - 120*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
Toluene-d8 (Surr)	*104*		*80 - 120*

Method: 8260D/UST - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-139450/6
Matrix: Water
Analysis Batch: 139450

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.30	ug/L			06/18/21 11:57	1
Ethylbenzene	ND		1.0	0.40	ug/L			06/18/21 11:57	1
Toluene	ND		1.0	0.30	ug/L			06/18/21 11:57	1
Xylenes, Total	ND		6.0	1.4	ug/L			06/18/21 11:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*80 - 120*		*06/18/21 11:57*	*1*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*06/18/21 11:57*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*06/18/21 11:57*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*06/18/21 11:57*	*1*

Lab Sample ID: LCS 410-139450/4
Matrix: Water
Analysis Batch: 139450

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	22.1		ug/L		110	80 - 120
Ethylbenzene	20.0	21.2		ug/L		106	80 - 120
Toluene	20.0	21.6		ug/L		108	80 - 120
Xylenes, Total	60.0	62.6		ug/L		104	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 410-139450/5
Matrix: Water
Analysis Batch: 139450

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	20.0	22.2		ug/L		111	80 - 120	0	30
Ethylbenzene	20.0	21.6		ug/L		108	80 - 120	2	30
Toluene	20.0	21.9		ug/L		110	80 - 120	2	30
Xylenes, Total	60.0	63.7		ug/L		106	80 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 410-138142/1-A
Matrix: Water
Analysis Batch: 138283

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 138142

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.050	0.010	ug/L		06/15/21 18:45	06/16/21 06:02	1
Benzo[a]pyrene	ND		0.050	0.010	ug/L		06/15/21 18:45	06/16/21 06:02	1
Benzo[b]fluoranthene	ND		0.050	0.010	ug/L		06/15/21 18:45	06/16/21 06:02	1
Benzo[k]fluoranthene	ND		0.050	0.010	ug/L		06/15/21 18:45	06/16/21 06:02	1
Chrysene	ND		0.050	0.010	ug/L		06/15/21 18:45	06/16/21 06:02	1
Dibenz(a,h)anthracene	ND		0.050	0.020	ug/L		06/15/21 18:45	06/16/21 06:02	1
Indeno[1,2,3-cd]pyrene	ND		0.050	0.020	ug/L		06/15/21 18:45	06/16/21 06:02	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*79*		*10 - 110*	*06/15/21 18:45*	*06/16/21 06:02*	*1*
1-Methylnaphthalene-d10 (Surr)	*66*		*36 - 111*	*06/15/21 18:45*	*06/16/21 06:02*	*1*
Fluoranthene-d10 (Surr)	*90*		*47 - 128*	*06/15/21 18:45*	*06/16/21 06:02*	*1*

Lab Sample ID: LCS 410-138142/2-A
Matrix: Water
Analysis Batch: 138283

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 138142

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	1.00	0.915		ug/L		91	61 - 122
Benzo[a]pyrene	1.00	0.978		ug/L		98	60 - 120
Benzo[b]fluoranthene	1.00	0.928		ug/L		93	58 - 122
Benzo[k]fluoranthene	1.00	0.951		ug/L		95	57 - 128
Chrysene	1.00	0.880		ug/L		88	55 - 123
Dibenz(a,h)anthracene	1.00	1.04		ug/L		104	50 - 121
Indeno[1,2,3-cd]pyrene	1.00	1.16		ug/L		116	47 - 143

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Benzo(a)pyrene-d12 (Surr)	*79*		*10 - 110*
1-Methylnaphthalene-d10 (Surr)	*67*		*36 - 111*
Fluoranthene-d10 (Surr)	*90*		*47 - 128*

Lab Sample ID: LCSD 410-138142/3-A
Matrix: Water
Analysis Batch: 138283

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 138142

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzo[a]anthracene	1.00	1.07		ug/L		107	61 - 122	16	30
Benzo[a]pyrene	1.00	1.14		ug/L		114	60 - 120	15	30
Benzo[b]fluoranthene	1.00	1.06		ug/L		106	58 - 122	14	30
Benzo[k]fluoranthene	1.00	1.09		ug/L		109	57 - 128	14	30
Chrysene	1.00	1.01		ug/L		101	55 - 123	13	30
Dibenz(a,h)anthracene	1.00	1.17		ug/L		117	50 - 121	11	30
Indeno[1,2,3-cd]pyrene	1.00	1.31		ug/L		131	47 - 143	12	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Benzo(a)pyrene-d12 (Surr)	*91*		*10 - 110*
1-Methylnaphthalene-d10 (Surr)	*83*		*36 - 111*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCSD 410-138142/3-A
Matrix: Water
Analysis Batch: 138283

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 138142

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Fluoranthene-d10 (Surr)	104		47 - 128

Lab Sample ID: MB 410-138340/1-A
Matrix: Water
Analysis Batch: 138815

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 138340

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	ND		0.050	0.010	ug/L		06/16/21 09:50	06/17/21 06:16	1
Benzo[a]pyrene	ND		0.050	0.010	ug/L		06/16/21 09:50	06/17/21 06:16	1
Benzo[b]fluoranthene	ND		0.050	0.010	ug/L		06/16/21 09:50	06/17/21 06:16	1
Benzo[k]fluoranthene	ND		0.050	0.010	ug/L		06/16/21 09:50	06/17/21 06:16	1
Chrysene	ND		0.050	0.010	ug/L		06/16/21 09:50	06/17/21 06:16	1
Dibenz(a,h)anthracene	ND		0.050	0.020	ug/L		06/16/21 09:50	06/17/21 06:16	1
Indeno[1,2,3-cd]pyrene	ND		0.050	0.020	ug/L		06/16/21 09:50	06/17/21 06:16	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Benzo(a)pyrene-d12 (Surr)	64		10 - 110	06/16/21 09:50	06/17/21 06:16	1
1-Methylnaphthalene-d10 (Surr)	65		36 - 111	06/16/21 09:50	06/17/21 06:16	1
Fluoranthene-d10 (Surr)	76		47 - 128	06/16/21 09:50	06/17/21 06:16	1

Lab Sample ID: LCS 410-138340/2-A
Matrix: Water
Analysis Batch: 138815

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 138340

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[a]anthracene	1.00	0.936		ug/L		94	61 - 122
Benzo[a]pyrene	1.00	1.00		ug/L		100	60 - 120
Benzo[b]fluoranthene	1.00	0.989		ug/L		99	58 - 122
Benzo[k]fluoranthene	1.00	0.983		ug/L		98	57 - 128
Chrysene	1.00	0.929		ug/L		93	55 - 123
Dibenz(a,h)anthracene	1.00	1.07		ug/L		107	50 - 121
Indeno[1,2,3-cd]pyrene	1.00	1.17		ug/L		117	47 - 143

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Benzo(a)pyrene-d12 (Surr)	80		10 - 110
1-Methylnaphthalene-d10 (Surr)	69		36 - 111
Fluoranthene-d10 (Surr)	91		47 - 128

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 410-137486/4
Matrix: Water
Analysis Batch: 137486

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	ND		250	19	ug/L			06/14/21 15:00	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: MB 410-137486/4
Matrix: Water
Analysis Batch: 137486

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	113		50 - 150		06/14/21 15:00	1

Lab Sample ID: LCS 410-137486/5
Matrix: Water
Analysis Batch: 137486

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C7-C12 (1C)			1100	1130		ug/L		102	64 - 131		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene (fid) (1C)	99		50 - 150

Lab Sample ID: LCSD 410-137486/6
Matrix: Water
Analysis Batch: 137486

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C7-C12 (1C)			1100	1100		ug/L		100	64 - 131	2	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
a,a,a-Trifluorotoluene (fid) (1C)	107		50 - 150

Lab Sample ID: MB 410-137491/3
Matrix: Water
Analysis Batch: 137491

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	ND		250	19	ug/L			06/15/21 01:55	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	105		50 - 150		06/15/21 01:55	1

Lab Sample ID: LCS 410-137491/4
Matrix: Water
Analysis Batch: 137491

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C7-C12 (1C)			1100	1060		ug/L		96	64 - 131		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
a,a,a-Trifluorotoluene (fid) (1C)	98		50 - 150

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 410-137491/5
Matrix: Water
Analysis Batch: 137491

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C7-C12 (1C)			1100	1040		ug/L		95	64 - 131	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
a,a,a-Trifluorotoluene (fid) (1C)	*103*		*50 - 150*

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH

Lab Sample ID: MB 410-138153/1-B
Matrix: Water
Analysis Batch: 139163

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 138153

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		100	45	ug/L		06/15/21 16:55	06/17/21 23:31	1
C24-C40	ND		250	100	ug/L		06/15/21 16:55	06/17/21 23:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o- terphenyl (Surr)	*47*	*S1-*	*50 - 150*	*06/15/21 16:55*	*06/17/21 23:31*	*1*

Lab Sample ID: LCS 410-138153/2-B
Matrix: Water
Analysis Batch: 139163

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 138153

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C12-C24			604	120		ug/L		20	10 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o- terphenyl (Surr)	*52*		*50 - 150*

Lab Sample ID: LCSD 410-138153/3-B
Matrix: Water
Analysis Batch: 139163

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 138153

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C12-C24			604	140		ug/L		23	10 - 115	16	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o- terphenyl (Surr)	*56*		*50 - 150*

Lab Sample ID: 410-43237-3 DU
Matrix: Water
Analysis Batch: 139163

Client Sample ID: MW-201-W-210608
Prep Type: Total/NA
Prep Batch: 138153

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
C12-C24	ND			ND		ug/L				NC	20
C24-C40	ND			ND		ug/L				NC	20

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH (Continued)

Lab Sample ID: 410-43237-3 DU
Matrix: Water
Analysis Batch: 139163

Client Sample ID: MW-201-W-210608
Prep Type: Total/NA
Prep Batch: 138153

Surrogate	DU %Recovery	DU Qualifier	Limits
n-Decanoic Acid (Surr)	*0.3*		*0 - 1*
o- terphenyl (Surr)	*53*		*50 - 150*

Lab Sample ID: 410-43237-4 DU
Matrix: Water
Analysis Batch: 139163

Client Sample ID: MW-202-W-210608
Prep Type: Total/NA
Prep Batch: 138153

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
C12-C24	ND			ND		ug/L				NC	20
C24-C40	ND			ND		ug/L				NC	20

Surrogate	DU %Recovery	DU Qualifier	Limits
n-Decanoic Acid (Surr)	*0.3*		*0 - 1*
o- terphenyl (Surr)	*44*	*S1-*	*50 - 150*

Lab Sample ID: MB 410-138353/1-B
Matrix: Water
Analysis Batch: 139912

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 138353

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		100	45	ug/L		06/16/21 09:45	06/21/21 01:49	1
C24-C40	ND		250	100	ug/L		06/16/21 09:45	06/21/21 01:49	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o- terphenyl (Surr)	*68*		*50 - 150*	*06/16/21 09:45*	*06/21/21 01:49*	*1*

Lab Sample ID: LCS 410-138353/2-B
Matrix: Water
Analysis Batch: 139912

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 138353

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
C12-C24			604	162		ug/L		27	10 - 115		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o- terphenyl (Surr)	*66*		*50 - 150*

Lab Sample ID: LCSD 410-138353/3-B
Matrix: Water
Analysis Batch: 139912

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 138353

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C12-C24			604	133		ug/L		22	10 - 115	20	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o- terphenyl (Surr)	*60*		*50 - 150*

Client: ARCADIS U.S., Inc.
Project/Site: Seattle Terminal

Job ID: 410-43237-1

Method: NWTPH-Dx - Semi-Volatile Petroleum Products by NWTPH (Continued)

Lab Sample ID: 410-43237-10 DU
Matrix: Water
Analysis Batch: 139912

Client Sample ID: MW-209-W-210609
Prep Type: Total/NA
Prep Batch: 138353

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
C12-C24	ND			59.3	J	ug/L				NC	20
C24-C40	ND			ND		ug/L				NC	20

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
o- terphenyl (Surr)	*58*		*50 - 150*

GC/MS VOA

Analysis Batch: 139447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-43237-1	MW-70R-W-210607	Total/NA	Water	8260D/UST	
410-43237-2	MW-200-W-210607	Total/NA	Water	8260D/UST	
410-43237-3	MW-201-W-210608	Total/NA	Water	8260D/UST	
410-43237-4	MW-202-W-210608	Total/NA	Water	8260D/UST	
410-43237-5	MW-203-W-210608	Total/NA	Water	8260D/UST	
410-43237-6	MW-204-W-210608	Total/NA	Water	8260D/UST	
410-43237-7	MW-205-W-210608	Total/NA	Water	8260D/UST	
410-43237-8	MW-206-W-210608	Total/NA	Water	8260D/UST	
410-43237-9	MW-207-W-210607	Total/NA	Water	8260D/UST	
410-43237-14	QA-T-210607	Total/NA	Water	8260D/UST	
MB 410-139447/6	Method Blank	Total/NA	Water	8260D/UST	
LCS 410-139447/4	Lab Control Sample	Total/NA	Water	8260D/UST	
LCSD 410-139447/5	Lab Control Sample Dup	Total/NA	Water	8260D/UST	

Analysis Batch: 139450

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-43237-10	MW-209-W-210609	Total/NA	Water	8260D/UST	
410-43237-11	MW-210-W-210609	Total/NA	Water	8260D/UST	
410-43237-12	MW-211-W-210609	Total/NA	Water	8260D/UST	
410-43237-13	DUP-1-WD-210607	Total/NA	Water	8260D/UST	
MB 410-139450/6	Method Blank	Total/NA	Water	8260D/UST	
LCS 410-139450/4	Lab Control Sample	Total/NA	Water	8260D/UST	
LCSD 410-139450/5	Lab Control Sample Dup	Total/NA	Water	8260D/UST	

GC/MS Semi VOA

Prep Batch: 137593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-43237-1	MW-70R-W-210607	Total/NA	Water	3510C	
410-43237-2	MW-200-W-210607	Total/NA	Water	3510C	
410-43237-9	MW-207-W-210607	Total/NA	Water	3510C	

Prep Batch: 138142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-43237-3	MW-201-W-210608	Total/NA	Water	3510C	
410-43237-4	MW-202-W-210608	Total/NA	Water	3510C	
410-43237-5	MW-203-W-210608	Total/NA	Water	3510C	
410-43237-6	MW-204-W-210608	Total/NA	Water	3510C	
410-43237-7	MW-205-W-210608	Total/NA	Water	3510C	
410-43237-8	MW-206-W-210608	Total/NA	Water	3510C	
MB 410-138142/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-138142/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-138142/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 138283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-43237-1	MW-70R-W-210607	Total/NA	Water	8270D SIM	137593
410-43237-2	MW-200-W-210607	Total/NA	Water	8270D SIM	137593
410-43237-3	MW-201-W-210608	Total/NA	Water	8270D SIM	138142
410-43237-4	MW-202-W-210608	Total/NA	Water	8270D SIM	138142
410-43237-5	MW-203-W-210608	Total/NA	Water	8270D SIM	138142

GC/MS Semi VOA (Continued)

Analysis Batch: 138283 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-43237-6	MW-204-W-210608	Total/NA	Water	8270D SIM	138142
410-43237-7	MW-205-W-210608	Total/NA	Water	8270D SIM	138142
410-43237-8	MW-206-W-210608	Total/NA	Water	8270D SIM	138142
410-43237-9	MW-207-W-210607	Total/NA	Water	8270D SIM	137593
MB 410-138142/1-A	Method Blank	Total/NA	Water	8270D SIM	138142
LCS 410-138142/2-A	Lab Control Sample	Total/NA	Water	8270D SIM	138142
LCSD 410-138142/3-A	Lab Control Sample Dup	Total/NA	Water	8270D SIM	138142

Prep Batch: 138340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-43237-10	MW-209-W-210609	Total/NA	Water	3510C	
410-43237-11	MW-210-W-210609	Total/NA	Water	3510C	
410-43237-12	MW-211-W-210609	Total/NA	Water	3510C	
410-43237-13	DUP-1-WD-210607	Total/NA	Water	3510C	
MB 410-138340/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-138340/2-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 138815

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-43237-10	MW-209-W-210609	Total/NA	Water	8270D SIM	138340
410-43237-11	MW-210-W-210609	Total/NA	Water	8270D SIM	138340
MB 410-138340/1-A	Method Blank	Total/NA	Water	8270D SIM	138340
LCS 410-138340/2-A	Lab Control Sample	Total/NA	Water	8270D SIM	138340

Analysis Batch: 140067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-43237-12	MW-211-W-210609	Total/NA	Water	8270D SIM	138340
410-43237-13	DUP-1-WD-210607	Total/NA	Water	8270D SIM	138340

GC VOA

Analysis Batch: 137486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-43237-1	MW-70R-W-210607	Total/NA	Water	NWTPH-Gx	
410-43237-2	MW-200-W-210607	Total/NA	Water	NWTPH-Gx	
410-43237-3	MW-201-W-210608	Total/NA	Water	NWTPH-Gx	
410-43237-4	MW-202-W-210608	Total/NA	Water	NWTPH-Gx	
410-43237-5	MW-203-W-210608	Total/NA	Water	NWTPH-Gx	
410-43237-6	MW-204-W-210608	Total/NA	Water	NWTPH-Gx	
410-43237-7	MW-205-W-210608	Total/NA	Water	NWTPH-Gx	
410-43237-8	MW-206-W-210608	Total/NA	Water	NWTPH-Gx	
410-43237-9	MW-207-W-210607	Total/NA	Water	NWTPH-Gx	
410-43237-10	MW-209-W-210609	Total/NA	Water	NWTPH-Gx	
MB 410-137486/4	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 410-137486/5	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
LCSD 410-137486/6	Lab Control Sample Dup	Total/NA	Water	NWTPH-Gx	

Analysis Batch: 137491

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-43237-11	MW-210-W-210609	Total/NA	Water	NWTPH-Gx	
410-43237-12	MW-211-W-210609	Total/NA	Water	NWTPH-Gx	

GC VOA (Continued)

Analysis Batch: 137491 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-43237-13	DUP-1-WD-210607	Total/NA	Water	NWTPH-Gx	
410-43237-14	QA-T-210607	Total/NA	Water	NWTPH-Gx	
MB 410-137491/3	Method Blank	Total/NA	Water	NWTPH-Gx	
LCS 410-137491/4	Lab Control Sample	Total/NA	Water	NWTPH-Gx	
LCSD 410-137491/5	Lab Control Sample Dup	Total/NA	Water	NWTPH-Gx	

GC Semi VOA

Prep Batch: 138153

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-43237-1	MW-70R-W-210607	Total/NA	Water	3510C	
410-43237-2	MW-200-W-210607	Total/NA	Water	3510C	
410-43237-3	MW-201-W-210608	Total/NA	Water	3510C	
410-43237-4	MW-202-W-210608	Total/NA	Water	3510C	
410-43237-5	MW-203-W-210608	Total/NA	Water	3510C	
410-43237-6	MW-204-W-210608	Total/NA	Water	3510C	
410-43237-7	MW-205-W-210608	Total/NA	Water	3510C	
410-43237-8	MW-206-W-210608	Total/NA	Water	3510C	
410-43237-9	MW-207-W-210607	Total/NA	Water	3510C	
MB 410-138153/1-B	Method Blank	Total/NA	Water	3510C	
LCS 410-138153/2-B	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-138153/3-B	Lab Control Sample Dup	Total/NA	Water	3510C	
410-43237-3 DU	MW-201-W-210608	Total/NA	Water	3510C	
410-43237-4 DU	MW-202-W-210608	Total/NA	Water	3510C	

Prep Batch: 138353

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-43237-10	MW-209-W-210609	Total/NA	Water	3510C	
410-43237-11	MW-210-W-210609	Total/NA	Water	3510C	
410-43237-12	MW-211-W-210609	Total/NA	Water	3510C	
410-43237-13	DUP-1-WD-210607	Total/NA	Water	3510C	
MB 410-138353/1-B	Method Blank	Total/NA	Water	3510C	
LCS 410-138353/2-B	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-138353/3-B	Lab Control Sample Dup	Total/NA	Water	3510C	
410-43237-10 DU	MW-209-W-210609	Total/NA	Water	3510C	

Cleanup Batch: 138833

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-43237-1	MW-70R-W-210607	Total/NA	Water	3630C	138153
410-43237-2	MW-200-W-210607	Total/NA	Water	3630C	138153
410-43237-3	MW-201-W-210608	Total/NA	Water	3630C	138153
410-43237-4	MW-202-W-210608	Total/NA	Water	3630C	138153
410-43237-5	MW-203-W-210608	Total/NA	Water	3630C	138153
410-43237-6	MW-204-W-210608	Total/NA	Water	3630C	138153
410-43237-7	MW-205-W-210608	Total/NA	Water	3630C	138153
410-43237-8	MW-206-W-210608	Total/NA	Water	3630C	138153
410-43237-9	MW-207-W-210607	Total/NA	Water	3630C	138153
MB 410-138153/1-B	Method Blank	Total/NA	Water	3630C	138153
LCS 410-138153/2-B	Lab Control Sample	Total/NA	Water	3630C	138153
LCSD 410-138153/3-B	Lab Control Sample Dup	Total/NA	Water	3630C	138153
410-43237-3 DU	MW-201-W-210608	Total/NA	Water	3630C	138153

GC Semi VOA (Continued)

Cleanup Batch: 138833 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-43237-4 DU	MW-202-W-210608	Total/NA	Water	3630C	138153

Analysis Batch: 139163

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-43237-1	MW-70R-W-210607	Total/NA	Water	NWTPH-Dx	138833
410-43237-2	MW-200-W-210607	Total/NA	Water	NWTPH-Dx	138833
410-43237-3	MW-201-W-210608	Total/NA	Water	NWTPH-Dx	138833
410-43237-4	MW-202-W-210608	Total/NA	Water	NWTPH-Dx	138833
410-43237-5	MW-203-W-210608	Total/NA	Water	NWTPH-Dx	138833
410-43237-6	MW-204-W-210608	Total/NA	Water	NWTPH-Dx	138833
410-43237-7	MW-205-W-210608	Total/NA	Water	NWTPH-Dx	138833
410-43237-8	MW-206-W-210608	Total/NA	Water	NWTPH-Dx	138833
410-43237-9	MW-207-W-210607	Total/NA	Water	NWTPH-Dx	138833
MB 410-138153/1-B	Method Blank	Total/NA	Water	NWTPH-Dx	138833
LCS 410-138153/2-B	Lab Control Sample	Total/NA	Water	NWTPH-Dx	138833
LCSD 410-138153/3-B	Lab Control Sample Dup	Total/NA	Water	NWTPH-Dx	138833
410-43237-3 DU	MW-201-W-210608	Total/NA	Water	NWTPH-Dx	138833
410-43237-4 DU	MW-202-W-210608	Total/NA	Water	NWTPH-Dx	138833

Cleanup Batch: 139881

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-43237-10	MW-209-W-210609	Total/NA	Water	3630C	138353
410-43237-11	MW-210-W-210609	Total/NA	Water	3630C	138353
410-43237-12	MW-211-W-210609	Total/NA	Water	3630C	138353
410-43237-13	DUP-1-WD-210607	Total/NA	Water	3630C	138353
MB 410-138353/1-B	Method Blank	Total/NA	Water	3630C	138353
LCS 410-138353/2-B	Lab Control Sample	Total/NA	Water	3630C	138353
LCSD 410-138353/3-B	Lab Control Sample Dup	Total/NA	Water	3630C	138353
410-43237-10 DU	MW-209-W-210609	Total/NA	Water	3630C	138353

Analysis Batch: 139912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-43237-10	MW-209-W-210609	Total/NA	Water	NWTPH-Dx	139881
410-43237-11	MW-210-W-210609	Total/NA	Water	NWTPH-Dx	139881
410-43237-12	MW-211-W-210609	Total/NA	Water	NWTPH-Dx	139881
410-43237-13	DUP-1-WD-210607	Total/NA	Water	NWTPH-Dx	139881
MB 410-138353/1-B	Method Blank	Total/NA	Water	NWTPH-Dx	139881
LCS 410-138353/2-B	Lab Control Sample	Total/NA	Water	NWTPH-Dx	139881
LCSD 410-138353/3-B	Lab Control Sample Dup	Total/NA	Water	NWTPH-Dx	139881
410-43237-10 DU	MW-209-W-210609	Total/NA	Water	NWTPH-Dx	139881

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Seattle Terminal

Job ID: 410-43237-1

Client Sample ID: MW-70R-W-210607

Lab Sample ID: 410-43237-1

Date Collected: 06/07/21 13:40

Matrix: Water

Date Received: 06/11/21 10:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	139447	06/18/21 13:20	HDS6	ELLE
Total/NA	Prep	3510C			137593	06/14/21 19:50	L2TS	ELLE
Total/NA	Analysis	8270D SIM		1	138283	06/16/21 11:09	X3ZL	ELLE
Total/NA	Analysis	NWTPH-Gx		1	137486	06/14/21 20:02	JJT8	ELLE
Total/NA	Prep	3510C			138153	06/15/21 16:55	L2TS	ELLE
Total/NA	Cleanup	3630C			138833	06/17/21 05:23	UKQ8	ELLE
Total/NA	Analysis	NWTPH-Dx		1	139163	06/18/21 00:40	KP5X	ELLE

Client Sample ID: MW-200-W-210607

Lab Sample ID: 410-43237-2

Date Collected: 06/07/21 17:00

Matrix: Water

Date Received: 06/11/21 10:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	139447	06/18/21 13:44	HDS6	ELLE
Total/NA	Prep	3510C			137593	06/14/21 19:50	L2TS	ELLE
Total/NA	Analysis	8270D SIM		1	138283	06/16/21 11:40	X3ZL	ELLE
Total/NA	Analysis	NWTPH-Gx		1	137486	06/14/21 20:49	JJT8	ELLE
Total/NA	Prep	3510C			138153	06/15/21 16:55	L2TS	ELLE
Total/NA	Cleanup	3630C			138833	06/17/21 05:23	UKQ8	ELLE
Total/NA	Analysis	NWTPH-Dx		1	139163	06/18/21 01:02	KP5X	ELLE

Client Sample ID: MW-201-W-210608

Lab Sample ID: 410-43237-3

Date Collected: 06/08/21 13:14

Matrix: Water

Date Received: 06/11/21 10:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	139447	06/18/21 14:08	HDS6	ELLE
Total/NA	Prep	3510C			138142	06/15/21 18:45	L2TS	ELLE
Total/NA	Analysis	8270D SIM		1	138283	06/16/21 12:41	X3ZL	ELLE
Total/NA	Analysis	NWTPH-Gx		1	137486	06/14/21 21:13	JJT8	ELLE
Total/NA	Prep	3510C			138153	06/15/21 16:55	L2TS	ELLE
Total/NA	Cleanup	3630C			138833	06/17/21 05:23	UKQ8	ELLE
Total/NA	Analysis	NWTPH-Dx		1	139163	06/18/21 01:25	KP5X	ELLE

Client Sample ID: MW-202-W-210608

Lab Sample ID: 410-43237-4

Date Collected: 06/08/21 11:25

Matrix: Water

Date Received: 06/11/21 10:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	139447	06/18/21 14:31	HDS6	ELLE
Total/NA	Prep	3510C			138142	06/15/21 18:45	L2TS	ELLE
Total/NA	Analysis	8270D SIM		1	138283	06/16/21 13:12	X3ZL	ELLE
Total/NA	Analysis	NWTPH-Gx		1	137486	06/14/21 21:36	JJT8	ELLE

Client Sample ID: MW-202-W-210608

Lab Sample ID: 410-43237-4

Date Collected: 06/08/21 11:25

Matrix: Water

Date Received: 06/11/21 10:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			138153	06/15/21 16:55	L2TS	ELLE
Total/NA	Cleanup	3630C			138833	06/17/21 05:23	UKQ8	ELLE
Total/NA	Analysis	NWTPH-Dx		1	139163	06/18/21 02:10	KP5X	ELLE

Client Sample ID: MW-203-W-210608

Lab Sample ID: 410-43237-5

Date Collected: 06/08/21 13:05

Matrix: Water

Date Received: 06/11/21 10:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	139447	06/18/21 14:55	HDS6	ELLE
Total/NA	Prep	3510C			138142	06/15/21 18:45	L2TS	ELLE
Total/NA	Analysis	8270D SIM		1	138283	06/16/21 13:42	X3ZL	ELLE
Total/NA	Analysis	NWTPH-Gx		1	137486	06/14/21 22:00	JJT8	ELLE
Total/NA	Prep	3510C			138153	06/15/21 16:55	L2TS	ELLE
Total/NA	Cleanup	3630C			138833	06/17/21 05:23	UKQ8	ELLE
Total/NA	Analysis	NWTPH-Dx		1	139163	06/18/21 02:56	KP5X	ELLE

Client Sample ID: MW-204-W-210608

Lab Sample ID: 410-43237-6

Date Collected: 06/08/21 15:30

Matrix: Water

Date Received: 06/11/21 10:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	139447	06/18/21 15:19	HDS6	ELLE
Total/NA	Prep	3510C			138142	06/15/21 18:45	L2TS	ELLE
Total/NA	Analysis	8270D SIM		1	138283	06/16/21 14:13	X3ZL	ELLE
Total/NA	Analysis	NWTPH-Gx		1	137486	06/14/21 22:23	JJT8	ELLE
Total/NA	Prep	3510C			138153	06/15/21 16:55	L2TS	ELLE
Total/NA	Cleanup	3630C			138833	06/17/21 05:23	UKQ8	ELLE
Total/NA	Analysis	NWTPH-Dx		1	139163	06/18/21 03:18	KP5X	ELLE

Client Sample ID: MW-205-W-210608

Lab Sample ID: 410-43237-7

Date Collected: 06/08/21 15:25

Matrix: Water

Date Received: 06/11/21 10:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	139447	06/18/21 15:42	HDS6	ELLE
Total/NA	Prep	3510C			138142	06/15/21 18:45	L2TS	ELLE
Total/NA	Analysis	8270D SIM		1	138283	06/16/21 14:43	X3ZL	ELLE
Total/NA	Analysis	NWTPH-Gx		1	137486	06/14/21 22:47	JJT8	ELLE
Total/NA	Prep	3510C			138153	06/15/21 16:55	L2TS	ELLE
Total/NA	Cleanup	3630C			138833	06/17/21 05:23	UKQ8	ELLE
Total/NA	Analysis	NWTPH-Dx		1	139163	06/18/21 03:41	KP5X	ELLE

Client Sample ID: MW-206-W-210608

Lab Sample ID: 410-43237-8

Date Collected: 06/08/21 11:40

Matrix: Water

Date Received: 06/11/21 10:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	139447	06/18/21 16:06	HDS6	ELLE
Total/NA	Prep	3510C			138142	06/15/21 18:45	L2TS	ELLE
Total/NA	Analysis	8270D SIM		1	138283	06/16/21 15:14	X3ZL	ELLE
Total/NA	Analysis	NWTPH-Gx		1	137486	06/14/21 23:11	JJT8	ELLE
Total/NA	Prep	3510C			138153	06/15/21 16:55	L2TS	ELLE
Total/NA	Cleanup	3630C			138833	06/17/21 05:23	UKQ8	ELLE
Total/NA	Analysis	NWTPH-Dx		1	139163	06/18/21 04:04	KP5X	ELLE

Client Sample ID: MW-207-W-210607

Lab Sample ID: 410-43237-9

Date Collected: 06/07/21 15:30

Matrix: Water

Date Received: 06/11/21 10:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	139447	06/18/21 16:30	HDS6	ELLE
Total/NA	Prep	3510C			137593	06/14/21 19:50	L2TS	ELLE
Total/NA	Analysis	8270D SIM		1	138283	06/16/21 12:10	X3ZL	ELLE
Total/NA	Analysis	NWTPH-Gx		1	137486	06/14/21 23:34	JJT8	ELLE
Total/NA	Prep	3510C			138153	06/15/21 16:55	L2TS	ELLE
Total/NA	Cleanup	3630C			138833	06/17/21 05:23	UKQ8	ELLE
Total/NA	Analysis	NWTPH-Dx		1	139163	06/18/21 04:26	KP5X	ELLE

Client Sample ID: MW-209-W-210609

Lab Sample ID: 410-43237-10

Date Collected: 06/09/21 14:15

Matrix: Water

Date Received: 06/11/21 10:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	139450	06/18/21 12:21	LCW8	ELLE
Total/NA	Prep	3510C			138340	06/16/21 09:50	A2VL	ELLE
Total/NA	Analysis	8270D SIM		1	138815	06/17/21 14:57	UWHS	ELLE
Total/NA	Analysis	NWTPH-Gx		1	137486	06/14/21 23:58	JJT8	ELLE
Total/NA	Prep	3510C			138353	06/16/21 09:45	A2VL	ELLE
Total/NA	Cleanup	3630C			139881	06/20/21 05:39	UKQ8	ELLE
Total/NA	Analysis	NWTPH-Dx		1	139912	06/21/21 02:58	IUSB	ELLE

Client Sample ID: MW-210-W-210609

Lab Sample ID: 410-43237-11

Date Collected: 06/09/21 14:10

Matrix: Water

Date Received: 06/11/21 10:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	139450	06/18/21 12:44	LCW8	ELLE
Total/NA	Prep	3510C			138340	06/16/21 09:50	A2VL	ELLE
Total/NA	Analysis	8270D SIM		1	138815	06/17/21 15:28	UWHS	ELLE
Total/NA	Analysis	NWTPH-Gx		1	137491	06/15/21 05:27	JJT8	ELLE

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Seattle Terminal

Job ID: 410-43237-1

Client Sample ID: MW-210-W-210609

Lab Sample ID: 410-43237-11
Matrix: Water
Date Collected: 06/09/21 14:10
Date Received: 06/11/21 10:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			138353	06/16/21 09:45	A2VL	ELLE
Total/NA	Cleanup	3630C			139881	06/20/21 05:39	UKQ8	ELLE
Total/NA	Analysis	NWTPH-Dx		1	139912	06/21/21 03:43	IUSB	ELLE

Client Sample ID: MW-211-W-210609

Lab Sample ID: 410-43237-12
Matrix: Water
Date Collected: 06/09/21 15:35
Date Received: 06/11/21 10:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	139450	06/18/21 13:08	LCW8	ELLE
Total/NA	Prep	3510C			138340	06/16/21 09:50	A2VL	ELLE
Total/NA	Analysis	8270D SIM		1	140067	06/21/21 18:51	UWHS	ELLE
Total/NA	Analysis	NWTPH-Gx		1	137491	06/15/21 05:51	JJT8	ELLE
Total/NA	Prep	3510C			138353	06/16/21 09:45	A2VL	ELLE
Total/NA	Cleanup	3630C			139881	06/20/21 05:39	UKQ8	ELLE
Total/NA	Analysis	NWTPH-Dx		1	139912	06/21/21 04:06	IUSB	ELLE

Client Sample ID: DUP-1-WD-210607

Lab Sample ID: 410-43237-13
Matrix: Water
Date Collected: 06/07/21 00:00
Date Received: 06/11/21 10:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	139450	06/18/21 13:32	LCW8	ELLE
Total/NA	Prep	3510C			138340	06/16/21 09:50	A2VL	ELLE
Total/NA	Analysis	8270D SIM		1	140067	06/21/21 19:21	UWHS	ELLE
Total/NA	Analysis	NWTPH-Gx		1	137491	06/15/21 06:15	JJT8	ELLE
Total/NA	Prep	3510C			138353	06/16/21 09:45	A2VL	ELLE
Total/NA	Cleanup	3630C			139881	06/20/21 05:39	UKQ8	ELLE
Total/NA	Analysis	NWTPH-Dx		1	139912	06/21/21 04:28	IUSB	ELLE

Client Sample ID: QA-T-210607

Lab Sample ID: 410-43237-14
Matrix: Water
Date Collected: 06/07/21 00:00
Date Received: 06/11/21 10:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D/UST		1	139447	06/18/21 12:56	HDS6	ELLE
Total/NA	Analysis	NWTPH-Gx		1	137491	06/15/21 03:06	JJT8	ELLE

Laboratory References:
ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Seattle Terminal

Job ID: 410-43237-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C457	04-12-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
NWTPH-Dx	3510C	Water	C12-C24
NWTPH-Gx		Water	C7-C12 (1C)

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Seattle Terminal

Job ID: 410-43237-1

Method	Method Description	Protocol	Laboratory
8260D/UST	Volatile Organic Compounds by GC/MS	SW846	ELLE
8270D SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	ELLE
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC)	NWTPH	ELLE
NWTPH-Dx	Semi-Volatile Petroleum Products by NWTPH	NWTPH	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
3630C	Silica Gel Cleanup	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE

Protocol References:

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Seattle Terminal

Job ID: 410-43237-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-43237-1	MW-70R-W-210607	Water	06/07/21 13:40	06/11/21 10:51
410-43237-2	MW-200-W-210607	Water	06/07/21 17:00	06/11/21 10:51
410-43237-3	MW-201-W-210608	Water	06/08/21 13:14	06/11/21 10:51
410-43237-4	MW-202-W-210608	Water	06/08/21 11:25	06/11/21 10:51
410-43237-5	MW-203-W-210608	Water	06/08/21 13:05	06/11/21 10:51
410-43237-6	MW-204-W-210608	Water	06/08/21 15:30	06/11/21 10:51
410-43237-7	MW-205-W-210608	Water	06/08/21 15:25	06/11/21 10:51
410-43237-8	MW-206-W-210608	Water	06/08/21 11:40	06/11/21 10:51
410-43237-9	MW-207-W-210607	Water	06/07/21 15:30	06/11/21 10:51
410-43237-10	MW-209-W-210609	Water	06/09/21 14:15	06/11/21 10:51
410-43237-11	MW-210-W-210609	Water	06/09/21 14:10	06/11/21 10:51
410-43237-12	MW-211-W-210609	Water	06/09/21 15:35	06/11/21 10:51
410-43237-13	DUP-1-WD-210607	Water	06/07/21 00:00	06/11/21 10:51
410-43237-14	QA-T-210607	Water	06/07/21 00:00	06/11/21 10:51

Chevron Northwes[t] ... s Request/Chain of Custody

eurofins | Lancaster Laboratories

Acct. # _____ 410-43237 Chain of Custody

atories use only
Sample # _____
spond with circled numbers

1 of 2

1 Client Information

Facility # _____ WBS _____
Former Unocal Seattle Marketing Terminal
Site Address
3001 Elliott Ave, Seattle, WA
Chevron PM
Kim Jolitz
Lead Consultant
Arcadis
Consultant/Office
1100 Olive Way Suite 800, Seattle, WA 98101
Consultant Project Mgr.
Consultant Phone #
Sampler
Danielle Gilbert, and Joseph Sepioi

4 Matrix

Soil ☐ Sediment ☐ Water ☒ Ground ☐ Potable ☐ NPDES ☐ Surface ☐ Oil ☐ Air ☐

3 Grab ☒ Composite ☐

5 Analyses Requested

2 Sample Identification	Collected Date	Collected Time	Total Number of Containers	BTEX ~~EDB~~	Naphth ☐ 8260 ☐ 8021 ☒	8260 full scan	Oxygenates	NWTPH GX	NWTPH DX	Silica Gel Cleanup ☒	Lead Total ☐ Diss. ☐ Method	WAEPH ☐ WAVPH ☐	cPAHs 8270 SIM					
MW-70R			10	X				X	X				X					
MW-200			10	X				X	X				X					
MW-201			10	X				X	X				X					
MW-202			10	X				X	X				X					
MW-203			10	X				X	X				X					
MW-204			10	X				X	X				X					
MW-205			10	X				X	X				X					
MW-206			10	X				X	X				X					
MW-207			10	X				X	X				X					
MW-209			10	X				X	X				X					
MW-210			10	X				X	X				X					
MW-211			10	X				X	X				X					
DUP-1			10	X				X	X				X					

SCR #: _____

- ☐ Results in Dry Weight
- ☐ J value reporting needed
- ☐ Must meet lowest detection limits possible for 8260 compounds
- ☐ 8021 MTBE Confirmation
- ☐ Confirm MTBE + Naphthalene
- ☐ Confirm highest hit by 8260
- ☐ Confirm all hits by 8260
- ☐ Run _____ oxy's on highest hit
- ☐ Run _____ oxy's on all hits

6 Remarks

7 Turnaround Time Requested (TAT) (please circle)

Standard | 5 day | 4 day | 72 hour | 48 hour | 24 hour

8 Data Package Options (please circle if required)

Type I - Full | Type VI (Raw Data)

Relinquished by	Date	Time	Received by	Date	Time
[signature]	6-10-21		[signature]		
[signature]			[signature]		
Relinquished by Commercial Carrier: UPS ____ FedEx X Other ____			[signature]	6/11/21	1051

Temperature Upon Receipt 4.0/4.8 °C

Custody Seals Intact? Yes / No

9

Lancaster Laboratories, Inc. • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300
The white copy should accompany samples to Lancaster Laboratories. The yellow copy should be retained by the client.

Issued by Dept. 40 Management 2051.01

Chevron Northwest Region Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories

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

2 of 2

1 Client Information

Facility # former Unocal Seattle — WBS Marketing Terminal
Site Address 3001 Elliott Ave, Seattle, WA
Chevron PM Kim Jolitz — Lead Consultant Arcadis
Consultant/Office 1100 Olive way, Suite 800, Seattle, WA 98101
Consultant Project Mgr.
Consultant Phone #
Sampler Daniel Sly Gilbert and Joseph Sepiol

4 Matrix

5 Analyses Requested

SCR #: _____

- ☐ Results in Dry Weight
- ☐ J value reporting needed
- ☐ Must meet lowest detection limits possible for 8260 compounds
- ☐ 8021 MTBE Confirmation
- ☐ Confirm MTBE + Naphthalene
- ☐ Confirm highest hit by 8260
- ☐ Confirm all hits by 8260
- ☐ Run _____ oxy's on highest hit
- ☐ Run _____ oxy's on all hits

2 Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	Soil	Sediment	Water: Ground	Water: Potable	Water: Surface	Water: NPDES	Oil	Air	Total Number of Containers	BTEX + MTBE 8021	BTEX + MTBE 8260	Naphth	8260 full scan	Oxygenates	NWTPH GX	NWTPH DX	Silica Gel Cleanup	Lead: Total	Lead: Diss.	Lead: Method	WAVPH	WAEPH	6 Remarks
Trip Blank	—	—	—				—						8	X					X								

6 Remarks

7 Turnaround Time Requested (TAT) (please circle)
Standard — 5 day — 4 day — 72 hour — 48 hour — 24 hour

8 Data Package Options (please circle if required)
Type I - Full — Type VI (Raw Data)

9	Relinquished by	Date	Time	Received by	Date	Time
	Daniel Sly Gilbert	6-10-21	1500			

Relinquished by Commerical Carrier: UPS _____ FedEx X Other _____
Temperature Upon Receipt 4.0 °C
Custody Seals Intact? Yes No

Received by — Date 6/11/21 — Time 1151

Lancaster Laboratories, Inc. • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300
The white copy should accompany samples to Lancaster Laboratories. The yellow copy should be retained by the client.
Issued by Dept. 40 Management 3051.01

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 410-43237-1

Login Number: 43237
List Number: 1
Creator: Colon Martinez, Jessenia C

List Source: Eurofins Lancaster Laboratories Env, LLC

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	No sample date and/or time on COC, logged in per container labels.
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified.	N/A	
Residual Chlorine Checked.	N/A	
Sample custody seals are intact.	True	

APPENDIX E

Historical Groundwater Analytical Results

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
MW-27	12/11/02	13:20	9.38	NR	NR	-3.20	--	6.18
(6.18)	03/20/03	10:31	11.09	NR	NR	-4.91	--	6.18
	07/03/03	9:02	12.10	NR	NR	-5.92	--	6.18
	09/18/03	11:27	10.58	NR	NR	-4.40	--	6.18
	12/02/03	10:56	9.50	NR	NR	-3.32	--	6.18
	03/09/04	10:37	11.83	NR	NR	-5.65	--	6.18
	06/03/04	10:09	12.32	NR	NR	-6.14	--	6.18
	09/03/04	10:35	10.63	NR	NR	-4.45	--	6.18
	12/06/04	10:30	9.41	NR	NR	-3.23	--	6.18
	03/04/05	10:33	9.05	NR	NR	-2.87	--	6.18
	06/03/05	--	13.05	NR	NR	-6.87	--	6.18
	09/01/05	8:00	10.29	NR	NR	-4.11	--	6.18
	12/01/05	9:45	9.28	NR	NR	-3.10	--	6.18
	03/02/06	9:00	9.29	NR	NR	-3.11	--	6.18
	06/06/06	Well Damaged During Construction Activities						6.18
MW-27R[6]	03/07/07	9:35	8.25	--	--	-3.88	--	4.37
(4.37)	09/26/07	7:59	9.19	--	--	-4.82	--	4.37
	11/26/07	14:55	7.56	--	--	-3.19	--	4.37
	12/03/07	Well Abandoned						4.37
MW-30	12/11/02	14:10	15.23	NR	NR	-3.94	--	11.29
(11.29)	03/20/03	13:00	12.59	NR	NR	-1.30	--	11.29
	07/03/03	11:18	14.30	NR	NR	-3.01	--	11.29
	09/18/03	10:36	14.70	NR	NR	-3.41	--	11.29
	12/02/03	11:23	12.20	NR	NR	-0.91	--	11.29
	03/09/04	10:58	13.81	NR	NR	-2.52	--	11.29
	06/03/04	11:44	14.60	NR	NR	-3.31	--	11.29
	09/03/04	13:42	9.85	NR	NR	1.44	--	11.29
	12/06/04	9:37	15.27	NR	NR	-3.98	--	11.29
	03/04/05	14:08	14.33	NR	NR	-3.04	--	11.29
	06/03/05	--	14.47	NR	NR	-3.18	--	11.29
	09/01/05	10:05	15.05	NR	NR	-3.76	--	11.29
	12/01/05	11:23	11.98	NR	NR	-0.69	--	11.29
	03/02/06	11:28	14.53	NR	NR	-3.24	--	11.29
	06/06/06	8:20	14.16	NR	NR	-2.87	--	11.29
	09/15/06	--	14.10	NR	NR	-2.81	--	11.29
	03/07/07	8:55	13.74	Sheen	--	-2.45	--	11.29
	06/07/07	8:43	13.87	--	--	-2.58	--	11.29
	07/10/07	9:45	14.21	--	--	-2.92	--	11.29
	07/25/07	11:35	13.94	--	--	-2.65	--	11.29
	08/22/07	9:35	14.15	--	--	-2.86	--	11.29
	09/06/07	9:50	14.25	--	--	-2.96	--	11.29
	09/26/07	9:30	14.52	--	--	-3.23	--	11.29
	10/11/07	7:55	14.22	--	--	-2.93	--	11.29
	11/01/07	9:50	14.29	--	--	-3.00	--	11.29
	11/16/07	15:25	13.85	--	--	-2.56	--	11.29
	11/26/07	13:40	13.90	--	--	-2.61	--	11.29
	12/19/07	9:30	12.59	--	--	-1.30	--	11.29
	01/03/08	8:30	12.60	--	--	-1.31	--	11.29
	01/17/08	8:48	12.53	--	--	-1.24	--	11.29
	01/30/08	9:30	13.10	Sheen	--	-1.81	--	11.29
	02/12/08	9:28	13.39	Sheen	--	-2.10	--	11.29
	03/03/08	9:31	13.80	--	--	-2.51	--	11.29
	03/17/08	9:29	13.99	--	--	-2.70	--	11.29
	04/01/08	9:13	13.78	--	--	-2.49	--	11.29
	04/14/08	9:14	13.97	--	--	-2.68	--	11.29
	04/28/08	9:56	14.18	--	--	-2.89	--	11.29
(20.85)[8]	05/13/08	9:24	14.46	--	--	6.39	--	20.85
	05/27/08	13:40	14.33	--	--	6.52	--	20.85
	06/10/08	10:25	14.08	--	--	6.77	--	20.85
	06/24/08	9:46	14.35	--	--	6.50	--	20.85
	07/07/08	9:50	14.13	--	--	6.72	--	20.85
	07/22/08	9:29	14.19	Sheen	--	6.66	--	20.85
	08/12/08	9:58	14.05	--	--	6.80	--	20.85
	09/03/08	--	14.03	--	--	6.82	--	20.85
	09/26/08	--	14.16	--	--	6.69	--	20.85
	10/17/08	9:15	14.35	--	--	6.50	--	20.85
	10/29/08	8:43	14.49	--	--	6.36	--	20.85
	11/12/08	10:46	13.03	--	--	7.82	--	20.85
	12/03/08	12:46	13.75	--	--	7.10	--	20.85
	01/06/09	9:36	12.68	--	--	8.17	--	20.85
	01/20/09	12:46	12.98	--	--	7.87	--	20.85
	02/03/09	9:39	13.79	--	--	7.06	--	20.85
	02/17/09	11:15	13.75	--	--	7.10	--	20.85
	03/12/09	12:09	13.79	--	--	7.06	--	20.85
	03/25/09	8:46	13.70	--	--	7.15	--	20.85
	04/08/09	10:16	13.30	--	--	7.55	--	20.85
	04/30/09	10:09	12.98	--	--	7.87	--	20.85
	05/12/09	10:10	12.72	12.70	0.02	8.13	--	20.85
	05/26/09	14:27	13.20	--	--	7.65	--	20.85
	06/09/09	9:41	13.91	--	--	6.94	--	20.85
	06/25/09	9:43	13.49	--	--	7.36	--	20.85
	07/07/09	9:35	13.75	Sheen	--	7.10	--	20.85
	07/13/09	8:09	14.23	--	--	6.62	--	20.85
	08/05/09	6:45	13.96	Sheen	--	6.89	--	20.85
	08/06/09	9:26	13.99	--	--	6.86	--	20.85
	08/20/09	8:41	14.18	--	--	6.67	--	20.85
(20.85)[9]	09/10/09	10:11	14.15	--	--	6.70	--	20.85
	09/23/09	9:33	14.07	Sheen	--	6.78	--	20.85
	10/08/09	9:49	14.21	--	--	6.64	--	20.85
	10/19/09	9:20	14.13	--	--	6.72	--	20.85
	11/12/09	9:33	12.43	--	--	8.42	--	20.85
	03/24/10	9:48	12.98	Sheen	--	7.87	--	20.85
	04/13/10	10:31	12.98	Sheen	--	7.87	--	20.85
	05/26/10	9:15	13.36	Sheen	--	7.49	--	20.85
	07/28/10	14:40	14.11	--	--	6.74	--	20.85
	08/05/10	11:49	14.10	--	--	6.75	--	20.85
	08/13/10	10:10	13.90	--	--	6.95	--	20.85
	08/18/10	8:36	13.92	--	--	6.93	--	20.85
	09/21/10	10:29	13.30	--	--	7.55	--	20.85
	10/11/10	11:01	13.40	--	--	7.45	--	20.85
	11/19/10	14:54	12.41	--	--	8.44	--	20.85

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
MW-30 (continued)	03/04/11	9:44	12.54	Sheen	--	8.31	--	20.85
	04/25/11	10:50	12.80	Sheen	--	8.05	--	20.85
	09/21/11	9:32	13.55	--	--	7.30	--	20.85
	11/21/11	11:00	13.74	--	--	7.11	--	20.85
	02/20/12	8:59	13.16	--	--	7.69	--	20.85
	04/17/12	11:55	12.90	Sheen	--	7.95	--	20.85
	10/10/12	12:10	14.41	--	--	6.44	--	20.85
	12/24/12	11:40	13.00	--	--	7.85	--	20.85
	01/08/13	14:20	11.88	--	--	8.97	--	20.85
	04/30/13	10:55	13.34	--	--	7.51	--	20.85
	09/19/13	9:54	13.74	--	--	7.11	--	20.85
	11/22/13	9:15	14.61	--	--	6.24	--	20.85
	06/23/14	10:27	14.04	--	--	6.81	--	20.85
	09/10/14	9:10	14.82	--	--	6.03	--	20.85
	12/15/14	13:27	11.38	--	--	9.47	--	20.85
	06/17/15	11:25	13.90	--	--	6.95	--	20.85
	12/09/15	10:39	10.00	--	--	10.85	--	20.85
	02/16/16	9:20	10.89	--	--	9.96	--	20.85
	06/13/16	8:40	13.79	LNAPL	--	7.06	--	20.85
	09/22/16	13:13	14.35	--	--	6.50	--	20.85
	01/12/17	12:44	--	LNAPL	--	--	--	20.85
	03/27/17	13:13	10.71	LNAPL	--	10.14	15.85	20.85
	06/16/17	9:46	13.39	13.38	--	7.46	15.85	20.85
	11/07/17	13:18	13.97	--	--	6.88	15.85	20.85
	03/26/18	8:46	13.48	--	--	7.37	15.85	20.85
	06/19/18	16:05	13.90	LNAPL	--	6.95	15.85	20.85
	09/27/18	12:49	14.01	--	--	6.84	15.85	20.85
	12/12/18	15:28	12.87	--	--	7.98	15.85	20.85
	03/25/19	15:40	13.05	LNAPL	--	7.80	15.85	20.85
	06/24/19	17:21	13.50	LNAPL	--	7.35	15.85	20.85
	09/25/19	9:26	13.69	--	--	7.16	15.85	20.85
	12/16/19	13:57	13.66	--	--	7.19	15.85	20.85
	03/25/20	14:19	13.19	--	--	7.66	15.85	20.85
	06/17/20	9:51	13.80	13.79	0.01	7.06	15.85	20.85
	09/11/20	10:02	14.39	--	--	6.46	15.85	20.85
	11/17/20	11:21	13.33	--	--	7.53	15.85	20.85
	03/15/21	**13:15**	**--***	**--**	**--**	**--**	15.85	**20.85**
	06/09/21	**12:06**	**14.00**	**LNAPL**	**--**	6.85	15.85	**20.85**
MW-34	12/11/02	13:45	9.45	NR	NR	-4.12	--	5.33
(5.33)	03/20/03	11:43	6.99	NR	NR	-1.66	--	5.33
	07/03/03	8:29	9.02	NR	NR	-3.69	--	5.33
	09/18/03	9:55	9.57	NR	NR	-4.24	--	5.33
	12/02/03	11:45	7.00	NR	NR	-1.67	--	5.33
	03/09/04	12:15	8.42	NR	NR	-3.09	--	5.33
	06/03/04	11:25	8.95	NR	NR	-3.62	--	5.33
	09/03/04	13:53	8.63	NR	NR	-3.30	--	5.33
	12/06/04	9:45	9.48	NR	NR	-4.15	--	5.33
	03/04/05	13:55	8.87	NR	NR	-3.54	--	5.33
	06/03/05	--	9.08	NR	NR	-3.75	--	5.33
	09/01/05	9:08	9.38	NR	NR	-4.05	--	5.33
	12/01/05	10:49	6.72	NR	NR	-1.39	--	5.33
	03/02/06	10:50	9.25	NR	NR	-3.92	--	5.33
	06/06/06	9:20	8.82	NR	NR	-3.49	--	5.33
	09/15/06	--	8.66	NR	NR	-3.33	--	5.33
	03/07/07	--	--	NR	NR	--	--	5.33
	02/13/08	Well Possibly Removed During Previous Excavation Activities						5.33
MW-35	12/11/02	13:35	9.29	NR	NR	-4.18	--	5.11
(5.11)	03/20/03	11:42	7.65	NR	NR	-2.54	--	5.11
	07/03/03	--	--	NR	NR	--	--	5.11
	09/18/03	--	--	NR	NR	--	--	5.11
	12/02/03	--	--	NR	NR	--	--	5.11
	03/09/04	--	--	NR	NR	--	--	5.11
	06/03/04	--	--	NR	NR	--	--	5.11
	09/03/04	--	--	NR	NR	--	--	5.11
	12/06/04	--	--	NR	NR	--	--	5.11
	03/04/05	--	--	NR	NR	--	--	5.11
	06/03/05	--	--	NR	NR	--	--	5.11
	09/01/05	--	--	NR	NR	--	--	5.11
	12/01/05	--	--	NR	NR	--	--	5.11
	03/02/06	--	--	NR	NR	--	--	5.11
	06/06/06	--	--	NR	NR	--	--	5.11
	09/15/06	--	--	NR	NR	--	--	5.11
	03/07/07	--	--	NR	NR	--	--	5.11
	02/13/08	Well Possibly Removed During Previous Excavation Activities						5.11
MW-42	12/11/02	13:30	9.38	NR	NR	-4.18	--	5.20
(5.20)	03/20/03	11:50	7.86	NR	NR	-2.66	--	5.20
	07/03/03	8:11	9.44	NR	NR	-4.24	--	5.20
	09/18/03	10:21	10.92	NR	NR	-5.72	--	5.20
	12/02/03	11:36	9.14	NR	NR	-3.94	--	5.20
	03/09/04	10:09	8.58	NR	NR	-3.38	--	5.20
	06/03/04	11:10	9.19	NR	NR	-3.99	--	5.20
	09/03/04	14:01	9.02	NR	NR	-3.82	--	5.20
	12/06/04	9:48	9.43	NR	NR	-4.23	--	5.20
	03/04/05	13:56	8.99	NR	NR	-3.79	--	5.20
	06/03/05	--	9.24	NR	NR	-4.04	--	5.20
(5.20)	09/01/05	9:00	9.55	NR	NR	-4.35	--	5.20
	12/01/05	10:54	8.91	NR	NR	-3.71	--	5.20
	03/02/06	10:45	9.25	NR	NR	-4.05	--	5.20
	06/06/06	9:28	8.93	NR	NR	-3.73	--	5.20
	09/15/06	--	8.87	NR	NR	-3.67	--	5.20
	03/07/07	--	--	NR	NR	--	--	5.20
	02/13/08	Well Possibly Removed During Previous Excavation Activities						5.20
MW-43	12/11/02	13:40	9.06	NR	NR	-4.12	--	4.94
(4.94)	03/20/03	11:30	7.10	NR	NR	-2.16	--	4.94
	07/03/03	8:15	8.86	NR	NR	-3.92	--	4.94
	09/18/03	--	--	NR	NR	--	--	4.94
	12/02/03	--	--	NR	NR	--	--	4.94
	03/09/04	--	--	NR	NR	--	--	4.94
	06/03/04	--	--	NR	NR	--	--	4.94
	09/03/04	--	--	NR	NR	--	--	4.94
	12/06/04	--	--	NR	NR	--	--	4.94

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
MW-43 (continued)	03/04/05	--	--	NR	NR	--	--	4.94
	06/03/05	--	--	NR	NR	--	--	4.94
	09/01/05	--	--	NR	NR	--	--	4.94
	12/01/05	--	--	NR	NR	--	--	4.94
	03/02/06	--	--	NR	NR	--	--	4.94
	06/06/06	--	--	NR	NR	--	--	4.94
	09/15/06	--	--	NR	NR	--	--	4.94
	03/07/07	--	--	NR	NR	--	--	4.94
	02/13/08	Well Possibly Removed During Previous Excavation Activities						4.94
MW-44	12/11/02	--	--	NR	NR	--	--	5.46
(5.46)	03/20/03	--	--	NR	NR	--	--	5.46
	07/03/03	--	--	NR	NR	--	--	5.46
	09/18/03	--	--	NR	NR	--	--	5.46
	12/02/03	--	--	NR	NR	--	--	5.46
	03/09/04	--	--	NR	NR	--	--	5.46
	06/03/04	--	--	NR	NR	--	--	5.46
	09/03/04	--	--	NR	NR	--	--	5.46
	12/06/04	--	--	NR	NR	--	--	5.46
	03/04/05	--	--	NR	NR	--	--	5.46
	06/03/05	--	--	NR	NR	--	--	5.46
	09/01/05	--	--	NR	NR	--	--	5.46
	12/01/05	--	--	NR	NR	--	--	5.46
	03/02/06	--	--	NR	NR	--	--	5.46
	06/06/06	--	--	NR	NR	--	--	5.46
	09/15/06	--	--	NR	NR	--	--	5.46
	03/07/07	--	--	NR	NR	--	--	5.46
MW-61A-R[w]	03/02/06	--	15.15[9]	NR	NR	-1.81	1.91	13.35
(13.35)	06/06/06	8:00	14.96	NR	NR	-1.61	--	13.35
	09/15/06	--	14.26	NR	NR	-0.91	--	13.35
	03/07/07	8:44	14.04	--	NR	-0.69	--	13.35
	06/07/07	9:15	14.36	--	NR	-1.01	--	13.35
	07/10/07	9:50	14.84	--	NR	-1.49	--	13.35
	07/25/07	11:40	14.55	--	NR	-1.20	--	13.35
	08/22/07	9:40	14.72	--	NR	-1.37	--	13.35
	09/06/07	9:55	14.90	--	NR	-1.55	--	13.35
	09/26/07	9:16	15.09	--	NR	-1.74	--	13.35
	10/11/07	8:00	14.82	--	NR	-1.47	--	13.35
	11/01/07	9:55	14.81	--	NR	-1.46	--	13.35
	11/16/07	15:30	14.59	--	NR	-1.24	--	13.35
	11/26/07	13:48	14.40	--	NR	-1.05	--	13.35
	12/19/07	9:35	13.83	--	NR	-0.48	--	13.35
	01/03/08	8:41	12.93	--	NR	0.42	--	13.35
	01/17/08	9:00	12.76	--	NR	0.59	--	13.35
	02/12/08	9:24	13.65	--	NR	-0.30	--	13.35
	03/03/08	9:24	14.14	--	NR	-0.79	--	13.35
	03/17/08	9:23	14.49	--	NR	-1.14	--	13.35
	04/01/08	9:10	14.22	14.21	0.01	-0.87	--	13.35
	04/14/08	9:06	14.41	14.39	0.02	-1.06	--	13.35
	04/28/08	9:36	14.70	14.64	0.06	-1.35	--	13.35
(22.44)[8]	05/13/08	9:29	14.88	--	--	7.56	11.00	22.44
	05/27/08	13:53	14.93	Sheen	--	7.51	--	22.44
	06/10/08	10:20	14.73	--	--	7.71	--	22.44
	06/24/08	9:41	14.92	--	--	7.52	--	22.44
	07/07/08	9:56	14.70	--	--	7.74	--	22.44
	07/22/08	9:34	14.72	14.70	0.02	7.72	--	22.44
	08/12/08	9:50	14.75	14.68	0.07	7.69	--	22.44
	09/03/08	--	15.58	15.56	0.02	6.86	--	22.44
	09/26/08	--	14.89	14.79	0.10	7.55	--	22.44
	10/17/08	9:03	15.12	14.92	0.20	7.32	--	22.44
	10/29/08	8:50	15.21	15.00	0.21	7.23	--	22.44
	11/12/08	10:51	13.95	13.81	0.14	8.49	--	22.44
	12/03/08	12:52	14.25	14.19	0.06	8.19	--	22.44
	01/06/09	9:40	13.12	12.99	0.13	9.32	--	22.44
	01/20/09	12:50	13.06	13.01	0.05	9.38	--	22.44
	02/03/09	9:43	14.40	13.88	0.52	8.04	--	22.44
	02/17/09	11:20	14.30	13.80	0.50	8.14	--	22.44
	03/12/09	12:16	14.20	14.05	0.15	8.24	--	22.44
	03/25/09	8:50	14.01	13.91	0.10	8.43	--	22.44
	04/08/09	10:21	13.81	13.71	0.10	8.63	--	22.44
(22.44)[8]	04/30/09	10:12	14.14	13.95	0.19	8.30	--	22.44
	05/12/09	10:51	13.66	13.64	0.02	8.78	--	22.44
	05/26/09	14:15	13.74	--	--	8.70	--	22.44
	06/09/09	9:46	13.40	--	--	9.04	--	22.44

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
MW-61A-R (continued)	06/25/09	9:47	14.14	13.94	0.20	8.30	--	22.44
	07/07/09	9:40	14.18	14.15	0.03	8.26	--	22.44
	07/13/09	8:14	14.88	14.87	0.01	7.56	--	22.44
	08/05/09	6:45	14.68	14.39	0.29	7.76	--	22.44
	08/06/09	9:29	14.64	14.62	0.02	7.80	--	22.44
	08/20/09	8:51	14.85	14.84	0.01	7.59	--	22.44
	09/10/09	10:15	14.84	14.78	0.06	7.60	--	22.44
	09/23/09	9:37	14.89	14.81	0.08	7.55	--	22.44
	10/08/09	9:39	15.01	14.94	0.07	7.43	--	22.44
	10/19/09	9:05	14.98	14.91	0.07	7.46	--	22.44
	11/12/09	9:36	12.85	12.80	0.05	9.59	--	22.44
	03/24/10	9:54	13.20	12.95	0.25	9.24	--	22.44
	04/13/10	10:37	13.06	12.95	0.11	9.38	--	22.44
	05/26/10	9:06	13.91	13.76	0.15	8.53	--	22.44
	07/28/10	14:56	14.78	--	--	7.66	--	22.44
	08/05/10	11:28	14.79	--	--	7.65	--	22.44
	08/13/10	9:38	13.62	--	--	8.82	--	22.44
	08/13/10	10:37	13.61	--	--	8.83	--	22.44
	08/13/10	10:42	13.61	--	--	8.83	--	22.44
	08/13/10	15:42	13.64	--	--	8.80	--	22.44
	08/18/10	8:55	14.70	--	--	7.74	--	22.44
	09/21/10	10:42	15.35	--	--	7.09	--	22.44
	10/11/10	11:20	14.35	14.31	0.04	8.09	--	22.44
	11/19/10	15:25	13.30	13.19	0.11	9.14	--	22.44
	03/04/11	10:04	12.80	12.63	0.17	9.64	--	22.44
	04/25/11	11:20	12.70	Sheen[10]	--	9.74	--	22.44
	09/21/11	9:45	14.65	14.10	0.55	7.79	--	22.44
	11/21/11	11:05	14.82	14.26	0.56	7.62	--	22.44
	02/20/12	9:15	13.55	13.15	0.40	8.89	--	22.44
	04/17/12	12:10	13.18	12.79	0.39	9.26	--	22.44
	10/10/12	12:25	14.80	14.39	0.41	7.64	--	22.44
	12/24/12	11:28	12.61	12.20	0.41	9.83	--	22.44
	01/08/13	14:30	11.84	11.74	0.10	10.60	--	22.44
	04/30/13	11:10	13.59	13.35	0.24	8.85	--	22.44
	09/19/13	9:48	14.45	14.40	0.05	7.99	--	22.44
	11/22/13	9:25	15.28	15.22	0.06	7.16	--	22.44
	06/23/14	10:36	14.60	--	--	7.84	--	22.44
	06/24/14	--	14.80	14.61	0.19	7.64	--	22.44
	09/10/14	9:30	14.92	--	--	7.52	--	22.44
	12/15/14	13:35	11.71	--	--	10.73	--	22.44
	12/16/14	15:25	11.90	11.81	0.01	10.54	--	22.44
	06/17/15	11:15	14.79	14.78	0.01	7.65	--	22.44
	12/09/15	10:45	10.99	10.98	0.01	11.45	--	22.44
	02/16/16	9:15	11.08	--	--	11.36	--	22.44
	06/13/16	8:30	14.40	--	--	8.04	--	22.44
	09/22/16	13:21	15.00	--	--	7.44	--	22.44
	01/12/17	13:09	12.26	--	--	10.18	--	22.44
	03/27/17	13:22	10.62	--	--	11.82	--	22.44
	06/16/17	9:41	14.73	13.84	0.89	7.71	--	22.44
	11/07/17	13:21	14.93	14.84	0.09	7.51	--	22.44
	03/26/18	8:41	13.68	--	--	8.76	--	22.44
	06/19/18	15:55	14.45	--	--	7.99	--	22.44
	09/27/18	12:36	15.21	15.10	0.11	7.31	--	22.44
	12/12/18	15:23	13.65	--	--	8.79	--	22.44
	03/25/19	15:33	13.49	--	--	8.95	--	22.44
	06/24/19	17:09	14.42	--	--	8.02	--	22.44
	09/25/19	9:01	14.59	--	--	7.85	--	22.44
	12/16/19	13:50	14.55	--	--	7.89	--	22.44
	03/25/20	14:04	13.59	--	--	8.85	--	22.44
	06/17/20	21:33	14.48	14.46	0.02	8.03	--	22.44
	09/11/20	9:58	15.13	--	--	7.31	--	22.44
	11/17/20	11:09	14.18	--	--	8.33	--	22.44
	03/15/21	**14:32**	**12.88**	**--**	**--**	**9.56**	**--**	**22.44**
	06/09/21	**12:02**	**14.70**	**14.70**	**0.00**	**7.74**	**--**	**22.44**
PZ-7.5	04/30/13	9:45	7.18	--	--	UK	--	
	09/15/13	8:46	7.19	--	--	UK	--	
	11/22/13	9:27	8.03	--	--	UK	--	
	06/11/14			Well Decommissioned				
PZ-9.5	04/30/13	9:53	9.00	--	--	UK	--	
	09/15/13	8:52	9.86	--	--	UK	--	
	11/22/13	9:37	9.86	--	--	UK	--	
	06/10/14			Well Decommissioned				
PZ-61A-R[11]	09/21/10	10:36	14.05	--	--	UK	--	
	09/28/09	8:50	14.04	--	--	UK	--	
	10/11/10	11:12	14.18	--	--	UK	--	
	03/04/11	9:55	12.46	--	--	UK	--	
	04/25/11	11:30	13.05	0.27	12.78	UK	--	
	09/21/11	9:40	14.18	14.17	0.01	UK	--	
	11/21/11	11:10	14.34	--	--	UK	--	
	02/20/12	9:10	13.28	13.18	0.10	UK	--	
	04/17/12	12:05	12.84	--	--	UK	--	
	10/10/12	12:30	14.89	--	--	UK	--	
	12/24/12	11:31	12.66	--	--	UK	--	
	01/08/13	14:31	11.73	--	--	UK	--	
	04/30/13	11:05	13.38	--	--	UK	--	
	09/19/13	9:51	14.10	--	--	UK	--	
	11/22/13	9:30	15.01	--	--	UK	--	
	06/12/14			Well Decommissioned				
PZ-203[11]	09/21/10	11:24	13.29	--	--	UK	--	
	04/25/11	13:50	11.80	--	--	UK	--	
	09/21/11	10:29	13.67	--	--	UK	--	
	11/21/11	10:24	12.60	--	--	UK	--	
	02/20/12			UNABLE TO LOCATE				
	04/17/12	12:25	13.00	--	--	UK	--	
	10/10/12			UNABLE TO LOCATE				
	12/24/12	10:39	14.52	--	--	UK	--	
	01/08/13	15:25	10.13	--	--	UK	--	
	04/30/13	10:26	11.53	--	--	UK	--	

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
PZ-203[11] (continued)	09/19/13	9:27	12.30	--	--	UK	--	
	11/22/13	10:10	12.03	--	--	UK	--	
	06/12/14			Well Decommissioned				
PZ-204[11]	09/21/10	11:32	19.02	--	--	UK	--	
	04/25/11	14:05	17.67	--	--	UK	--	
	09/21/11	10:18	19.34	--	--	UK	--	
	11/21/11	10:30	18.71	--	--	UK	--	
	02/20/12			UNABLE TO LOCATE				
	04/17/12	11:35	18.23	--	--	UK	--	
	10/10/12			UNABLE TO LOCATE				
	12/24/12	10:21	16.65	--	--	UK	--	
	01/08/13	15:15	16.82	--	--	UK	--	
	04/30/13	10:34	17.75	--	--	UK	--	
	09/19/13	9:21	18.40	--	--	UK	--	
	11/22/13	9:55	18.80	--	--	UK	--	
	06/12/14			Well Decommissioned				
MW-65	12/11/02	14:03	14.69	NR	NR	-3.86	--	10.83
(10.83)	03/20/03	10:44	10.09	NR	NR	0.74	--	10.83
	07/03/03	11:12	13.85	NR	NR	-3.02	--	10.83
	09/18/03	10:40	14.15	NR	NR	-3.32	--	10.83
	12/02/03	11:14	12.38	NR	NR	-1.55	--	10.83
	03/09/04	10:50	13.63	NR	NR	-2.80	--	10.83
	06/03/04	11:42	14.24	NR	NR	-3.41	--	10.83
	09/03/04	14:08	13.77	NR	NR	-2.94	--	10.83
	12/06/04	9:32	14.59	NR	NR	-3.76	--	10.83
	03/04/05	14:04	14.06	NR	NR	-3.23	--	10.83
	06/03/05	--	14.14	NR	NR	-3.31	--	10.83
	09/01/05	9:55	14.67	NR	NR	-3.84	--	10.83
	12/01/05	11:19	12.05	NR	NR	-1.22	--	10.83
	03/02/06	11:12	14.28	NR	NR	-3.45	--	10.83
	06/06/06	8:26	13.83	NR	NR	-3.00	--	10.83
	09/15/06	--	13.90	NR	NR	-3.07	--	10.83
	03/07/07	8:51	13.63	--	--	-2.80	--	10.83
	06/07/07	8:30	13.69	--	--	-2.86	--	10.83
	09/26/07	9:27	14.29	--	--	-3.46	--	10.83
	11/26/07	10:00	13.62	--	--	-2.79	--	10.83
	12/03/07			Well Decommissioned				10.83
MW-66	12/11/02	14:15	15.36	NR	NR	-3.74	--	11.62
(11.62)	03/20/03	13:04	12.21	NR	NR	-0.59	--	11.62
	07/03/03	11:22	14.73	NR	NR	-3.11	--	11.62
	09/18/03	10:34	15.25	NR	NR	-3.63	--	11.62
	12/02/03	11:27	11.99	NR	NR	-0.37	--	11.62
	03/09/04	11:02	13.67	NR	NR	-2.05	--	11.62
	06/03/04	11:45	14.78	NR	NR	-3.16	--	11.62
	09/03/04	14:12	14.16	NR	NR	-2.54	--	11.62
	12/06/04	9:39	15.22	NR	NR	-3.60	--	11.62
	03/04/05	14:01	14.54	NR	NR	-2.92	--	11.62
	06/03/05	--	14.69	NR	NR	-3.07	--	11.62
	09/01/05	10:10	15.31	NR	NR	-3.69	--	11.62
	12/01/05	11:26	11.78	NR	NR	-0.16	--	11.62
	03/02/06	11:20	14.77	NR	NR	-3.15	--	11.62
	06/06/06	8:15	14.35	NR	NR	-2.73	--	11.62
	09/15/06	--	14.39	NR	NR	-2.77	--	11.62
	03/07/07	9:00	14.11	--	--	-2.49	--	11.62
	09/26/07	9:36	14.97	--	--	-3.35	--	11.62
	11/26/07	13:42	14.23	--	--	-2.61	--	11.62
	12/03/07			Well Decommissioned				11.62
MW-200[6]	03/07/07	9:45	8.88	--	--	-4.10	-0.22	4.78
(4.78)	06/07/07	15:53	9.26	--	--	-4.48	--	4.78
	07/06/07	10:00	9.76	--	--	-4.98	--	4.78
	09/26/07	8:08	9.43	--	--	-4.65	--	4.78
	11/26/07	14:48	8.54	--	--	-3.76	--	4.78
	02/13/08	11:15	8.57	--	--	-3.79	--	4.78
(14.36)[8]	05/13/08	10:16	10.02	--	--	4.34	9.36	14.36
	09/03/08	--	9.56	--	--	4.80	--	14.36
	12/03/08	12:10	9.11	--	--	5.25	--	14.36
	02/17/09	10:43	8.28	--	--	6.08	--	14.36
	05/12/09	12:02	8.95	--	--	5.41	--	14.36
	05/26/09	13:54	9.40	--	--	4.96	--	14.36
	09/10/09	10:39	9.74	--	--	4.62	--	14.36
	04/13/10	11:21	9.23	--	--	5.13	--	14.36
	06/16/10	10:05	9.10	--	--	5.26	--	14.36
	08/12/10	9:45	8.92	Sheen	--	5.44	--	14.36
	09/14/10	1:48	9.31	--	--	5.05	--	14.36
	09/14/10	1:53	9.31	--	--	5.05	--	14.36
	09/15/10	15:03	9.34	--	--	5.02	--	14.36
	09/15/10	15:05	9.33	--	--	5.03	--	14.36
	09/15/10	15:10	9.31	--	--	5.05	--	14.36
	09/15/10	15:15	9.29	--	--	5.07	--	14.36
	09/15/10	15:20	9.28	--	--	5.08	--	14.36
	09/15/10	15:25	9.26	--	--	5.10	--	14.36
	09/15/10	15:35	9.38	--	--	4.98	--	14.36
	09/15/10	15:39	9.49	--	--	4.87	--	14.36
(14.36)[8]	09/15/10	15:45	9.58	--	--	4.78	--	14.36
	09/15/10	15:50	9.66	--	--	4.70	--	14.36
	09/15/10	15:55	9.70	--	--	4.66	--	14.36
	09/15/10	16:00	9.74	--	--	4.62	--	14.36
	09/15/10	16:05	9.76	--	--	4.60	--	14.36
	09/15/10	16:10	9.79	--	--	4.57	--	14.36
	09/15/10	16:16	9.82	--	--	4.54	--	14.36
	09/15/10	16:28	9.80	--	--	4.56	--	14.36
	09/15/10		9.69	--	--	4.67	--	14.36

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
MW-200 (continued)	09/15/10	16:36	9.56	--	--	4.80	--	14.36
	09/15/10	16:40	9.50	--	--	4.86	--	14.36
	09/15/10	16:46	9.43	--	--	4.93	--	14.36
	09/15/10	16:55	9.35	--	--	5.01	--	14.36
	09/15/10	17:05	9.27	--	--	5.09	--	14.36
	09/15/10	17:20	9.21	--	--	5.15	--	14.36
	09/15/10	17:29	9.20	--	--	5.16	--	14.36
	09/21/10	11:14	9.50	--	--	4.86	--	14.36
	09/22/10	11:00	9.40	--	--	4.96	--	14.36
	04/26/11	10:45	9.30	--	--	5.06	--	14.36
	09/21/11	10:45	10.15	--	--	4.21	--	14.36
	11/21/11			Unable to Gauge due to rain fillup of well				14.36
	02/20/12			UNABLE TO LOCATE				14.36
	04/17/12	14:00	9.78	--	--	4.58	--	14.36
	10/10/12	11:35	10.35	--	--	4.01	--	14.36
	12/24/12	10:54	7.94	--	--	6.42	--	14.36
	01/08/13	15:40	7.83	--	--	6.53	--	14.36
	04/30/13	10:21	8.62	--	--	5.74	--	14.36
	09/19/13	9:33	9.40	--	--	4.96	--	14.36
	11/22/13	10:30	9.82	--	--	4.54	--	14.36
	06/23/14	9:52	9.61	--	--	4.75	--	14.36
	12/15/14	12:59	8.00	--	--	6.36	--	14.36
	06/17/15	10:25	8.51	--	--	5.85	--	14.36
	12/09/15	10:08	5.89	--	--	8.47	--	14.36
	01/15/16	16:47	8.16	--	--	6.20	--	14.36
	02/16/16	8:40	8.25	--	--	6.11	--	14.36
	06/13/16	9:10	9.75	--	--	4.61	--	14.36
	09/22/16	12:42	9.20	--	--	5.16	--	14.36
	01/12/17	11:15	8.06	--	--	6.30	--	14.36
	03/27/17	12:55	8.58	--	--	5.78	9.36	14.36
	06/16/17	8:44	8.90	--	--	5.46	9.36	14.36
	11/07/17	12:51	8.69	--	--	5.67	9.36	14.36
	03/26/18	8:20	8.68	--	--	5.68	9.36	14.36
	06/19/18	15:20	9.42	--	--	4.94	9.36	14.36
	09/27/18	11:27	9.41	--	--	4.95	9.36	14.36
	12/12/18	14:50	8.15	--	--	6.21	9.36	14.36
	03/25/19	14:40	8.84	--	--	5.52	9.36	14.36
	06/24/19	16:33	9.92	--	--	4.44	9.36	14.36
	09/25/19	8:28	9.58	--	--	4.78	9.36	14.36
	12/16/19	14:48	8.32	--	--	6.04	9.36	14.36
	12/16/19	14:48	8.32	--	--	6.04	9.36	14.36
	03/25/20	13:01	9.22	--	--	5.64	9.36	14.36
	06/16/20	8:59	9.31	--	--	5.05	9.36	14.36
	09/11/20	8:23	9.84	--	--	4.52	9.36	14.36
	11/17/20	9:53	7.82	--	--	6.54	9.36	14.36
	03/15/21	**13:33**	**9.06**	**--**	**--**	**5.30**	**9.36**	**14.36**
	06/09/21	**11:31**	**9.40**	**--**	**--**	**4.96**	**9.36**	**14.36**
MW-201[o]	03/07/07	9:55	9.41	Sheen	--	-4.13	0.28	5.28
(5.28)	06/07/07	16:35	9.79	--	--	-4.51	--	5.28
	07/06/07	11:00	10.27	--	--	-4.99	--	5.28
	09/26/07	8:20	9.97	--	--	-4.69	--	5.28
	11/27/07	14:38	9.04	--	--	-3.76	--	5.28
	02/12/08	10:24	9.65	--	--	-4.37	--	5.28
(14.86)[s]	05/13/08	10:24	10.34	--	--	4.52	9.86	14.86
	09/03/08	--	10.08	--	--	4.78	--	14.86
	12/03/08	12:17	9.66	--	--	5.20	--	14.86
	02/17/09	10:37	8.82	--	--	6.04	--	14.86
	05/12/09	12:13	9.52	--	--	5.34	--	14.86
	05/26/09	13:50	9.90	--	--	4.96	--	14.86
	08/11/09	9:02	10.31	--	--	4.55	--	14.86
	08/28/09	14:50	10.21	--	--	4.65	--	14.86
	09/10/09	10:42	10.29	--	--	4.57	--	14.86
	04/13/10	11:17	9.75	--	--	5.11	--	14.86
	08/11/10	14:45	10.68	Sheen	--	4.18	--	14.86
	09/14/10	13:55	9.89	--	--	4.97	--	14.86
	09/14/10	14:00	9.89	--	--	4.97	--	14.86
	09/14/10	15:05	10.04	--	--	4.82	--	14.86
	09/14/10	15:07	10.02	--	--	4.84	--	14.86
	09/14/10	15:19	9.92	--	--	4.94	--	14.86
	09/14/10	15:26	9.89	--	--	4.97	--	14.86
	09/14/10	15:36	9.86	--	--	5.00	--	14.86
	09/17/10	18:14	9.59	--	--	5.27	--	14.86
	09/17/10	20:07	9.36	--	--	5.50	--	14.86
	09/21/10	11:18	10.06	--	--	4.80	--	14.86
	04/25/11	13:15	9.22	--	--	5.64	--	14.86
	09/21/11	10:40	10.81	--	--	4.05	--	14.86
	11/21/11	10:15	10.17	--	--	4.69	--	14.86
	02/20/12	11:20	9.68	--	--	5.18	--	14.86
	04/17/12	11:20	10.11	--	--	4.75	--	14.86
	10/10/12	11:45	10.91	--	--	3.95	--	14.86
	12/24/12	10:47	8.35	--	--	6.51	--	14.86
	01/08/13	15:35	8.35	--	--	6.51	--	14.86
	04/30/13	10:23	9.14	--	--	5.72	--	14.86
	09/19/13	9:30	9.90	--	--	4.96	--	14.86
	11/22/13	10:20	10.27	--	--	4.59	--	14.86
	06/23/14	9:56	10.14	--	--	4.72	--	14.86
	12/15/14	12:51	8.60	--	--	6.26	--	14.86
	06/17/15	10:20	8.99	--	--	5.87	--	14.86
	12/09/15	10:14	6.59	--	--	8.27	--	14.86
	01/15/16	16:56	8.85	--	--	6.01	--	14.86
	02/16/16	8:35	8.91	--	--	5.95	--	14.86
	06/13/16	9:15	10.39	--	--	4.47	--	14.86
(14.86)[s]	09/22/16	12:45	9.86	--	--	5.00	--	14.86
	01/12/17	11:37	9.72	--	--	5.14	--	14.86
	03/27/17	12:52	9.25	--	--	5.61	9.86	14.86
	06/16/17	8:42	9.55	--	--	5.31	9.86	14.86
	11/07/17	12:46	9.32	--	--	5.54	9.86	14.86
	03/26/18	8:25	9.29	--	--	5.57	9.86	14.86

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
MW-201 (continued)	06/19/18	15:27	10.06	--	--	4.80	9.86	14.86
	09/27/18	11:36	10.00	--	--	4.86	9.86	14.86
	12/12/18	14:55	8.77	--	--	6.09	9.86	14.86
	03/25/19	14:29	9.39	--	--	5.47	9.86	14.86
	06/24/19	16:38	9.73	--	--	5.13	9.86	14.86
	09/25/19	8:23	10.22	--	--	4.64	9.86	14.86
	12/16/19	14:51	9.00	--	--	5.86	9.86	14.86
	03/25/20	13:10	9.94	--	--	4.92	9.86	14.86
	06/17/20	9:03	9.94	--	--	4.92	9.86	14.86
	09/11/20	8:34	10.62	--	--	4.24	9.86	14.86
	11/17/20	9:57	8.41	--	--	6.45	9.86	14.86
	03/15/21	**13:37**	**9.81**	**--**	**--**	**5.05**	**9.86**	**14.86**
	06/09/21	**11:26**	**9.05**	**--**	**--**	**5.81**	**9.86**	**14.86**
MW-202[6]	03/07/07	9:25	8.79	--	--	-3.78	-2.74	5.01
(5.01)	06/07/07	14:53	9.52	--	--	-4.51	--	5.01
	07/06/07	10:05	10.16	--	--	-5.15	--	5.01
	09/26/07	7:48	9.59	--	--	-4.58	--	5.01
	11/26/07	15:16	8.43	--	--	-3.42	--	5.01
	02/12/08	10:26	8.59	--	--	-3.58	--	5.01
(14.58)[8]	05/13/08	10:06	10.20	--	--	4.38	6.83	14.58
	09/03/08	--	9.61	--	--	4.97	--	14.58
	12/03/08	11:55	8.86	--	--	5.72	--	14.58
	02/17/09	10:32	8.15	--	--	6.43	--	14.58
	05/12/09	11:58	9.77	--	--	4.81	--	14.58
	05/26/09	13:56	10.84	--	--	3.74	--	14.58
	08/11/09	9:25	9.96	--	--	4.62	--	14.58
	08/28/09	14:29	9.85	--	--	4.73	--	14.58
	09/10/09	10:58	9.90	--	--	4.68	--	14.58
	04/13/10	11:23	10.17	--	--	4.41	--	14.58
	06/16/10	9:58	8.95	--	--	5.63	--	14.58
	08/11/10	11:45	10.00	--	--	4.58	--	14.58
	08/16/10	14:40	8.46	--	--	6.12	--	14.58
	08/16/10	14:43	8.46	--	--	6.12	--	14.58
	08/16/10	14:45	9.01	--	--	5.57	--	14.58
	08/16/10	14:57	9.02	--	--	5.56	--	14.58
	08/16/10	14:48	9.06	--	--	5.52	--	14.58
	08/16/10	14:49	9.13	--	--	5.45	--	14.58
	08/16/10	14:50	9.14	--	--	5.44	--	14.58
	08/16/10	14:51	9.13	--	--	5.45	--	14.58
	08/16/10	14:56	9.19	--	--	5.39	--	14.58
	08/16/10	14:56	8.75	--	--	5.83	--	14.58
	08/16/10	14:57	8.60	--	--	5.98	--	14.58
	08/16/10	14:57	8.59	--	--	5.99	--	14.58
	08/16/10	14:58	8.53	--	--	6.05	--	14.58
	08/18/10	9:12	11.12	--	--	3.46	--	14.58
	09/17/10	14:32	18.86	--	--	-4.28	--	14.58
	09/17/10	16:18	9.18	--	--	5.40	--	14.58
	09/17/10	17:52	8.83	--	--	5.75	--	14.58
	09/21/10	11:10	10.55	--	--	4.03	--	14.58
	09/22/10	9:30	9.66	--	--	4.92	--	14.58
	04/25/11	14:40	9.32	--	--	5.26	--	14.58
	09/21/11	10:47	10.90	--	--	3.68	--	14.58
	11/21/11	9:56	10.03	--	--	4.55	--	14.58
	02/20/12	11:29	9.61	--	--	4.97	--	14.58
	04/17/12	11:00	10.30	--	--	4.28	--	14.58
	10/10/12	11:50	11.00	--	--	3.58	--	14.58
	12/24/12	11:00	7.85	--	--	6.73	--	14.58
	01/08/13	15:45	7.59	--	--	6.99	--	14.58
	04/30/13	10:18	8.75	--	--	5.83	--	14.58
	09/19/13	9:36	10.12	--	--	4.46	--	14.58
	11/22/13	10:40	7.00	--	--	7.58	--	14.58
	06/23/14	9:45	10.65	--	--	3.93	--	14.58
	12/15/14	13:06	7.41	--	--	7.17	--	14.58
	06/17/15	10:35	8.84	--	--	5.74	--	14.58
	12/09/15	10:00	6.61	--	--	7.97	--	14.58
	01/15/16	16:32	9.06	--	--	5.52	--	14.58
	02/16/16	8:45	8.37	--	--	6.21	--	14.58
	06/13/16	9:05	10.65	--	--	3.93	--	14.58
	09/22/16	12:38	9.21	--	--	5.37	--	14.58
	01/12/17	10:32	8.32	--	--	6.26	--	14.58
	03/27/17	12:56	9.44	--	--	5.14	6.78	14.58
	06/16/17	8:47	9.43	--	--	5.15	6.78	14.58
	11/07/17	12:55	9.00	--	--	5.58	6.78	14.58
	03/26/18	8:15	8.95	--	--	5.63	6.78	14.58
	06/19/18	15:33	10.55	--	--	4.03	6.78	14.58
	09/27/18	12:05	10.00	--	--	4.58	6.78	14.58
	12/12/18	14:57	8.54	--	--	6.04	6.78	14.58
	03/25/19	14:52	9.42	--	--	5.16	6.78	14.58
	06/24/19	16:26	10.85	--	--	3.73	6.78	14.58
	09/25/19	8:31	10.63	--	--	3.95	6.78	14.58
	12/16/19	14:41	8.68	--	--	5.90	6.78	14.58
	03/25/20	12:47	8.89	--	--	5.69	6.78	14.58
	06/17/20	8:57	10.37	--	--	4.21	6.78	14.58
	09/11/20	8:18	10.98	--	--	3.60	6.78	14.58
	11/17/20	9:44	7.53	--	--	7.05	6.78	14.58
	03/15/21	**13:29**	**9.81**	**--**	**--**	**4.77**	**6.78**	**14.58**
	06/09/21	**11:21**	**10.41**	**--**	**--**	**4.17**	**6.78**	**14.58**
MW-203[6]	03/07/07	--	11.86	--	--	-3.88	-2.52	7.98
(7.98)	06/07/07	13:54	12.45	--	--	-4.47	--	7.98
	07/06/07	11:01	13.07	--	--	-5.09	--	7.98
	09/26/07	8:30	12.69	--	--	-4.71	--	7.98
	11/26/07	14:33	11.56	--	--	-3.58	--	7.98
	02/12/08	10:05	12.29	--	--	-4.31	--	7.98
	05/13/08	10:32	13.56	--	--	3.99	7.05	17.55
(17.55)[8]	09/03/08	--	13.40	--	--	4.15	--	17.55
	12/03/08	12:26	11.76	--	--	5.79	--	17.55
	02/17/09	10:47	11.00	--	--	6.55	--	17.55
	05/12/09	12:21	12.81	--	--	4.74	--	17.55
	05/26/09	13:45	13.51	--	--	4.04	--	17.55
	08/28/09	15:14	12.67	--	--	4.88	--	17.55

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
MW-203[o] (continued)	09/10/09	10:45	12.99	--	--	4.56	--	17.55
	04/13/10	11:12	12.92	--	--	4.63	--	17.55
	07/21/10	16:30	12.59	--	--	4.96	--	17.55
	08/11/10	11:12	11.68	--	--	5.87	--	17.55
	08/11/10	11:28	11.89	--	--	5.66	--	17.55
	08/11/10	11:29	11.84	--	--	5.71	--	17.55
	08/13/10	16:15	13.10	--	--	4.45	--	17.55
	08/16/10	7:12	13.96	--	--	3.59	--	17.55
	08/16/10	7:13	13.96	--	--	3.59	--	17.55
(17.55)[o]	09/02/10	14:45	12.76	--	--	4.79	--	17.55
	09/02/10	14:55	12.71	--	--	4.84	--	17.55
	09/02/10	15:10	12.31	--	--	5.24	--	17.55
	09/02/10	15:33	12.56	--	--	4.99	--	17.55
	09/15/10	6:47	14.20	--	--	3.35	--	17.55
	09/16/10	15:55	12.02	--	--	5.53	--	17.55
	09/16/10	16:00	12.01	--	--	5.54	--	17.55
	09/16/10	16:11	11.95	--	--	5.60	--	17.55
	09/16/10	16:20	11.90	--	--	5.65	--	17.55
	09/21/10	11:28	13.54	--	--	4.01	--	17.55
	04/25/11	13:45	12.06	--	--	5.49	--	17.55
	09/21/11	14:26	12.68	--	--	4.87	--	17.55
	11/21/11	10:21	11.69	--	--	5.86	--	17.55
	02/20/12	11:14	12.25	--	--	5.30	--	17.55
	04/17/12	13:45	13.39	--	--	4.16	--	17.55
	10/10/12	11:20	14.18	--	--	3.37	--	17.55
	12/24/12	10:35	9.67	--	--	7.88	--	17.55
	01/08/13	15:30	10.34	--	--	7.21	--	17.55
	04/30/13	10:28	11.76	--	--	5.79	--	17.55
	09/19/13	9:39	12.81	--	--	4.74	--	17.55
	11/22/13	10:05	12.48	--	--	5.07	--	17.55
	06/23/14	10:04	13.68	--	--	3.87	--	17.55
	12/15/14	12:46	10.46	--	--	7.09	--	17.55
	06/17/15	10:15	11.94	--	--	5.61	--	17.55
	12/09/15	10:19	9.63	--	--	7.92	--	17.55
	01/15/16	16:16	11.89	--	--	5.66	--	17.55
	02/16/16	8:30	11.48	--	--	6.07	--	17.55
	06/13/16	9:20	13.62	--	--	3.93	--	17.55
	09/22/16	12:50	12.01	--	--	5.54	--	17.55
	01/12/17	11:50	11.40	--	--	6.15	--	17.55
	03/27/17	12:50	12.41	--	--	5.14	7.05	17.55
	06/16/17	8:38	12.31	--	--	5.24	7.05	17.55
	11/07/17	12:40	11.86	--	--	5.69	7.05	17.55
	03/26/18	8:30	11.89	--	--	5.66	7.05	17.55
	06/19/18	15:10	13.15	--	--	4.40	7.05	17.55
	09/27/18	11:43	12.79	--	--	4.76	7.05	17.55
	12/12/18	14:39	11.37	--	--	6.18	7.05	17.55
	03/25/19	14:22	12.25	--	--	5.30	7.05	17.55
	06/24/19	16:51	13.87	--	--	3.68	7.05	17.55
	09/25/19	8:19	13.45	--	--	4.10	7.05	17.55
	12/16/19	14:57	11.61	--	--	5.94	7.05	17.55
	03/25/20	13:15	12.95			4.60	7.05	17.55
	06/17/20	9:10	13.05	--	--	4.50	7.05	17.55
	09/11/20	8:44	13.94	--	--	3.61	7.05	17.55
	11/17/20	10:03	10.46	--	--	7.09	7.05	17.55
	03/15/21	**13:42**	**12.83**	**--**	**--**	**4.72**	**7.05**	**17.55**
	06/09/21	**11:36**	**13.41**	**--**	**--**	**4.14**	**7.05**	**17.55**
MW-204[o]	03/07/07	10:15	18.12	--	--	-3.74	-2.87	14.38
(14.38)	06/07/07	14:50	18.52	--	--	-4.14	--	14.38
	07/06/07	11:40	19.03	--	--	-4.65	--	14.38
	09/26/07	8:37	18.85	--	--	-4.47	--	14.38
	11/26/07	14:29	17.78	--	--	-3.40	--	14.38
	02/12/08	10:03	18.00	--	--	-3.62	--	14.38
(23.93)[o]	05/13/08	10:38	19.43	--	--	4.50	6.68	23.93
	09/03/08	--	18.76	--	--	5.17	--	23.93
	10/01/08	10:25	18.40	--	--	5.53	--	23.93
	10/17/08	9:29	18.72	--	--	5.21	--	23.93
	12/03/08	12:31	18.06	--	--	5.87	--	23.93
	02/17/09	10:54	17.42	--	--	6.51	--	23.93
	05/12/09	12:41	19.81	--	--	4.12	--	23.93
	05/26/09	13:41	19.20	--	--	4.73	--	23.93
	07/13/09	8:18	19.82	--	--	4.11	--	23.93
	08/04/09	--	18.88	--	--	5.05	--	23.93
	08/06/09	9:36	18.33	--	--	5.60	--	23.93
	08/20/09	9:02	18.21	--	--	5.72	--	23.93
	09/10/09	10:47	19.02	--	--	4.91	--	23.93
	04/13/10	10:59	18.71	--	--	5.22	--	23.93
	06/16/10	10:15	18.06	--	--	5.87	--	23.93
	08/11/10	16:16	18.65	--	--	5.28	--	23.93
	08/12/10	12:31	18.11	--	--	5.82	--	23.93
	08/12/10	12:34	18.12	--	--	5.81	--	23.93
	08/12/10	16:13	18.95	--	--	4.98	--	23.93
	08/12/10	16:15	18.94	--	--	4.99	--	23.93
	08/12/10	16:17	18.90	--	--	5.03	--	23.93
	08/13/10	16:25	18.79	--	--	5.14	--	23.93
	08/14/10	7:17	19.70	--	--	4.23	--	23.93
	08/14/10	7:18	19.70	--	--	4.23	--	23.93
	09/02/10	14:33	18.93	--	--	5.00	--	23.93
	09/02/10	14:35	18.93	--	--	5.00	--	23.93
	09/02/10	14:39	18.93	--	--	5.00	--	23.93
	09/02/10	15:37	18.73	--	--	5.20	--	23.93
	09/02/10	17:35	18.57	--	--	5.36	--	23.93
	09/14/10	11:58	18.91	--	--	5.02	--	23.93
	09/14/10	12:37	18.70	--	--	5.23	--	23.93
	09/14/10	12:46	18.65	--	--	5.28	--	23.93
	09/16/10	7:10	19.67	--	--	4.26	--	23.93
	09/16/10	7:12	19.67	--	--	4.26	--	23.93
	09/16/10	7:13	19.67	--	--	4.26	--	23.93
	09/16/10	7:14	19.68	--	--	4.25	--	23.93

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
MW-204 Continued	09/16/10	7:15	19.68	--	--	4.25	--	23.93
	09/16/10	7:17	19.69	--	--	4.24	--	23.93
	09/16/10	7:19	19.69	--	--	4.24	--	23.93
	09/16/10	7:21	19.70	--	--	4.23	--	23.93
	09/16/10	7:23	19.70	--	--	4.23	--	23.93
	09/16/10	7:25	19.71	--	--	4.22	--	23.93
	09/16/10	7:27	19.72	--	--	4.21	--	23.93
	09/16/10	7:29	19.72	--	--	4.21	--	23.93
	09/16/10	7:30	19.75	--	--	4.18	--	23.93
	09/17/10	14:30	18.93	--	--	5.00	--	23.93
	09/17/10	16:20	18.47	--	--	5.46	--	23.93
(23.93)[8]	09/17/10	19:57	18.26	--	--	5.67	--	23.93
	09/21/10	11:35	19.18	--	--	4.75	--	23.93
	04/25/11	14:15	18.07	--	--	5.86	--	23.93
	09/21/11	10:22	19.62	--	--	4.31	--	23.93
	11/21/11	10:30	18.71	--	--	5.22	--	23.93
	02/20/12	10:53	17.99	--	--	5.94	--	23.93
	04/17/12	13:25	19.03	--	--	4.90	--	23.93
	10/10/12	11:10	19.87	--	--	4.06	--	23.93
	12/24/12	10:16	16.73	--	--	7.20	--	23.93
	01/08/13	15:20	16.69	--	--	7.24	--	23.93
	04/30/13	10:40	17.97	--	--	5.96	--	23.93
	09/19/13	9:18	18.63	--	--	5.30	--	23.93
	11/22/13	9:50	18.95	--	--	4.98	--	23.93
	06/23/14	10:13	19.51	--	--	4.42	--	23.93
	12/15/14	12:37	16.71	--	--	7.22	--	23.93
	06/17/15	10:10	18.20	--	--	5.73	--	23.93
	12/09/15	10:24	15.49	--	--	8.44	--	23.93
	01/15/16	15:44	17.59	--	--	6.34	--	23.93
	02/16/16	8:20	17.31	--	--	6.62	--	23.93
	06/13/16	9:25	19.42	--	--	4.51	--	23.93
	09/22/16	12:53	18.41	--	--	5.52	--	23.93
	01/12/17	12:09	17.43	--	--	6.50	--	23.93
	03/27/17	12:45	17.99	--	--	5.94	6.58	23.93
	06/16/17	8:27	18.39	--	--	5.54	6.58	23.93
	11/07/17	12:04	17.98	--	--	5.95	6.58	23.93
	03/26/18	8:34	18.00	--	--	5.93	6.58	23.93
	06/19/18	15:06	19.00	--	--	4.93	6.58	23.93
	09/27/18	11:51	18.99	--	--	4.94	6.58	23.93
	12/12/18	14:17	17.46	--	--	6.47	6.58	23.93
	03/25/19	14:16	18.22	--	--	5.71	6.58	23.93
	06/24/19	16:55	19.66	--	--	4.27	6.58	23.93
	09/25/19	8:11	19.23	--	--	4.70	6.58	23.93
	12/16/19	15:03	17.82	--	--	6.11	6.58	23.93
	03/25/20	13:25	18.85	--	--	9.04	6.58	23.93
	06/17/20	9:13	19.00	--	--	4.93	6.58	23.93
	09/11/20	8:52	19.75	--	--	4.18	6.58	23.93
	11/17/20	10:16	16.91	--	--	7.02	6.58	23.93
	03/15/21	**13:49**	**18.70**	**--**	**--**	**5.23**	**6.58**	**23.93**
	06/09/21	**11:41**	**19.26**	**--**	**--**	**4.67**	**6.58**	**23.93**
MW-205[o]	03/07/07	10:30	22.20	Sheen	--	-3.77	0.43	18.43
(18.43)	06/07/07	15:45	22.45	--	--	-4.02	--	18.43
	07/06/07	11:47	22.93	--	--	-4.50	--	18.43
	09/26/07	8:46	22.83	--	--	-4.40	--	18.43
	11/26/07	14:23	21.76	--	--	-3.33	--	18.43
	02/12/08	10:01	21.78	--	--	-3.35	--	18.43
(27.89)[8]	05/13/08	10:43	23.38	--	--	4.51	9.89	27.89
	09/03/08	--	22.68	--	--	5.21	--	27.89
	12/03/08	12:36	22.01	--	--	5.88	--	27.89
	02/17/09	10:59	21.40	--	--	6.49	--	27.89
	05/12/09	12:47	22.73	--	--	5.16	--	27.89
	05/26/09	13:36	23.06	--	--	4.83	--	27.89
	08/04/09	--	22.84	--	--	5.05	--	27.89
	08/28/09	15:34	22.71	--	--	5.18	--	27.89
	09/10/09	10:46	23.01	--	--	4.88	--	27.89
	04/13/10	11:07	22.62	--	--	5.27	--	27.89
	08/13/10	8:45	22.31	--	--	5.58	--	27.89
	08/16/10	14:18	21.50	--	--	6.39	--	27.89
	08/16/10	12:22	21.75	--	--	6.14	--	27.89
	09/14/10	11:59	22.66	--	--	5.23	--	27.89
	09/16/10	9:24	24.00	--	--	3.89	--	27.89
	09/16/10	9:25	24.00	--	--	3.89	--	27.89
	09/16/10	9:28	24.00	--	--	3.89	--	27.89
	09/16/10	15:05	22.42	--	--	5.47	--	27.89
	09/17/10	13:43	23.12	--	--	4.77	--	27.89
	09/17/10	13:48	23.11	--	--	4.78	--	27.89
	09/17/10	13:55	23.05	--	--	4.84	--	27.89
	09/17/10	14:00	23.05	--	--	4.84	--	27.89
	09/17/10	14:04	23.02	--	--	4.87	--	27.89
	09/17/10	14:09	23.03	--	--	4.86	--	27.89
	09/17/10	14:19	22.96	--	--	4.93	--	27.89
	09/17/10	14:26	22.92	--	--	4.97	--	27.89
	09/21/10	11:40	23.15	--	--	4.74	--	27.89
	09/28/10	8:15	23.05	Sheen[9]	--	4.84	--	27.89
	10/11/10	10:48	21.89	--	--	6.00	--	27.89
	11/19/10	16:51	22.81	--	--	5.08	--	27.89
	03/04/11	10:32	21.98	--	--	5.91	--	27.89
	04/25/11	14:20	22.04	--	--	5.85	--	27.89
	04/26/11	13:40	--	LNAPL	--	--	--	27.89
	05/12/11	7:49	22.68	--	--	5.21	--	27.89
	06/03/11	11:33	22.70	--	--	5.19	--	27.89
	06/09/11	14:48	22.66	Sheen	--	5.23	--	27.89
	09/21/11	10:13	23.60	--	--	4.29	--	27.89
	09/30/11	13:50	22.26	--	--	5.63	--	27.89
	10/06/11	14:35	22.31	--	--	5.58	--	27.89
	10/14/11	6:15	22.61	--	--	5.28	--	27.89
	10/21/11	6:30	22.40	--	--	5.49	--	27.89
	10/28/11	13:40	22.53	--	--	5.36	--	27.89

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
MW-205 (continued)	11/04/11	13:05	22.42	--	--	5.47	--	27.89
	11/10/11	14:35	22.18	--	--	5.71	--	27.89
	11/21/11	10:43	22.76	--	--	5.13	--	27.89
	02/20/12	11:10	22.32	--	--	5.57	--	27.89
	04/17/12	11:45	23.03	--	--	4.86	--	27.89
	10/10/12	11:00	23.80	--	--	4.09	--	27.89
	12/24/12	10:10	20.73	--	--	7.16	--	27.89
	01/08/13	15:00	20.73	--	--	7.16	--	27.89
	04/30/13	10:45	21.91	--	--	5.98	--	27.89
	09/19/13	9:15	22.33	--	--	5.56	--	27.89
	11/22/13	9:40	22.69	--	--	5.20	--	27.89
	06/23/14	10:17	23.50	--	--	4.39	--	27.89
	12/15/14	12:30	20.78	--	--	7.11	--	27.89
(27.89)[8]	06/17/15	10:05	22.22	--	--	5.67	--	27.89
	12/09/15	10:27	19.51	--	--	8.38	--	27.89
	01/15/16	16:10	21.56	--	--	6.33	--	27.89
	02/16/16	8:10	21.28	--	--	6.61	--	27.89
	06/13/16	9:30	23.37	--	--	4.52	--	27.89
	09/22/16	12:58	22.31	--	--	5.58	--	27.89
	01/12/17	12:29	21.34	--	--	6.55	--	27.89
	03/27/17	12:40	19.89	--	--	8.00	9.89	27.89
	06/16/17	8:22	22.33	--	--	5.56	9.89	27.89
	11/07/17	11:59	21.89	--	--	6.00	9.89	27.89
	03/26/18	8:36	21.91	--	--	5.98	9.89	27.89
	06/19/18	15:02	22.80	--	--	5.09	9.89	27.89
	09/27/18	12:00	22.88	--	--	5.01	9.89	27.89
	12/12/18	14:15	21.38	--	--	6.51	9.89	27.89
	03/25/19	14:12	22.11	--	--	5.78	9.89	27.89
	06/24/19	16:58	23.66	--	--	4.23	9.89	27.89
	09/25/19	8:03	23.12	--	--	4.77	9.89	27.89
	12/16/19	15:14	21.75	--	--	6.14	9.89	27.89
	03/25/20	13:31	22.84			5.05	9.89	27.89
	06/17/20	9:17	22.94	--	--	4.95	9.89	27.89
	09/11/20	8:59	23.75	--	--	4.14	9.89	27.89
	11/17/20	10:20	20.78	--	--	7.11	9.89	27.89
	03/15/21	**13:57**	**22.67**	**--**	**--**	**5.22**	**9.89**	**27.89**
	06/09/21	**11:49**	**23.23**	**--**	**--**	**4.66**	**9.89**	**27.89**
MW-206[9]	03/07/07	9:15	9.15	--	--	-3.56	-5.41	5.59
(5.59)	06/07/07	13:26	10.24	--	--	-4.65	--	5.59
	07/06/07	9:22	10.84	--	--	-5.25	--	5.59
	09/26/07	7:35	10.21	--	--	-4.62	--	5.59
	11/26/07	15:08	8.47	--	--	-2.88	--	5.59
	02/12/08	10:28	8.69	--	--	-3.10	--	5.59
(15.15)[9]	05/13/08	9:59	11.80	--	--	3.35	4.15	15.15
	09/03/08	--	9.91	--	--	5.24	--	15.15
	10/01/08	9:30	9.21	--	--	5.94	--	15.15
	12/03/08	11:51	8.78	--	--	6.37	--	15.15
	02/17/09	10:29	8.28	--	--	6.87	--	15.15
	05/12/09	11:47	11.83	--	--	3.32	--	15.15
	05/26/09	13:59	13.30	--	--	1.85	--	15.15
	08/11/09	9:38	10.02	--	--	5.13	--	15.15
	08/28/09	14:07	9.78	--	--	5.37	--	15.15
	09/10/09	11:14	9.81	--	--	5.34	--	15.15
	04/13/10	11:27	12.60	--	--	2.55	--	15.15
	08/11/10	17:30	13.10	--	--	2.05	--	15.15
	08/16/10	11:52	9.70	--	--	5.45	--	15.15
	08/16/10	12:26	8.60	--	--	6.55	--	15.15
	08/18/10	9:07	13.10	--	--	2.05	--	15.15
	09/17/10	16:12	8.69	--	--	6.46	--	15.15
	09/17/10	17:55	10.03	--	--	5.12	--	15.15
	09/21/10	11:07	12.65	--	--	2.50	--	15.15
	09/22/10	9:20	11.09	--	--	4.06	--	15.15
	04/25/11	14:50	10.84	--	--	4.31	--	15.15
	09/21/11	10:52	11.00	--	--	4.15	--	15.15
	11/21/11	9:50	10.20	--	--	4.95	--	15.15
	02/20/12	11:32	11.31	--	--	3.84	--	15.15
	04/17/12	10:55	12.45	--	--	2.70	--	15.15
	10/10/12	12:00	10.65	--	--	4.50	--	15.15
	12/24/12	11:10	8.45	--	--	6.70	--	15.15
	01/08/13	15:48	8.47	--	--	6.68	--	15.15
	04/30/13	10:15	9.64	--	--	5.51	--	15.15
	09/19/13	9:42	12.46	--	--	2.69	--	15.15
	11/22/13	10:50	9.22	--	--	5.93	--	15.15
	06/23/14	9:41	13.04	--	--	2.11	--	15.15
	12/15/14	13:13	7.09	--	--	8.06	--	15.15
	06/17/15	10:45	10.67	--	--	4.48	--	15.15
	12/09/15	9:54	7.86	--	--	7.29	--	15.15
	02/16/16	8:50	8.51	--	--	6.64	--	15.15
	06/13/16	9:00	12.46	--	--	2.69	--	15.15
	09/22/16	12:34	8.90	--	--	6.25	--	15.15
	01/12/17	10:24	9.45	--	--	5.70	--	15.15
	03/27/17	12:58	11.59	--	--	3.56	4.15	15.15
	06/16/17	8:50	11.59	--	--	3.56	4.15	15.15
	11/07/17	12:59	10.18	--	--	4.97	4.15	15.15
	03/26/18	8:08	10.00	--	--	5.15	4.15	15.15
	06/19/18	15:38	12.92	--	--	2.23	4.15	15.15
	09/27/18	12:20	11.99	--	--	3.16	4.15	15.15
	12/12/18	15:06	9.79	--	--	5.36	4.15	15.15
	03/25/19	15:00	12.00	--	--	3.15	4.15	15.15
	06/24/19	16:20	12.80	--	--	2.35	4.15	15.15
	09/25/19	8:36	13.07	--	--	2.08	4.15	15.15
	12/16/19	14:38	9.65	--	--	5.50	4.15	15.15
	03/25/20	12:44	12:10	--	--	3.05	4.15	15.15
	06/17/20	8:55	12.39	--	--	2.76	4.15	15.15
	09/11/20	8:15	13.06	--	--	2.09	4.15	15.15
	11/17/20	9:42	7.13	--	--	8.02	4.15	15.15
	03/15/21	**13:26**	**12.06**	**--**	**--**	**3.09**	**4.15**	**15.15**
	06/09/21	**11:15**	**12.94**	**--**	**--**	**2.21**	**4.15**	**15.15**
MW-207[9]	03/07/07	10:40	10.64	--	--	-4.82	-3.68	5.82
(5.82)	06/07/07	17:10	10.53	--	--	-4.71	--	5.82

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
MW-207[R] (continued)	07/06/07	9:10	11.20	--	--	-5.38	--	5.82
	09/26/07	7:25	10.30	--	--	-4.48	--	5.82
	11/26/07	15:03	8.84	--	--	-3.02	--	5.82
	02/12/08	10:31	8.90	--	--	-3.08	--	5.82
(15.40)[R]	05/13/08	9:53	12.07	--	--	3.33	5.90	15.40
	09/03/08	--	10.14	--	--	5.26	--	15.40
	10/01/08	8:10	9.51	--	--	5.89	--	15.40
	12/03/08	11:46	9.05	--	--	6.35	--	15.40
	02/17/09	10:25	8.40	--	--	7.00	--	15.40
	05/12/09	11:43	11.70	--	--	3.70	--	15.40
	05/26/09	14:03	13.52	--	--	1.88	--	15.40
	08/11/09	9:46	10.41	--	--	4.99	--	15.40
	08/28/09	13:45	10.35	--	--	5.05	--	15.40
	09/10/09	11:25	10.20	--	--	5.20	--	15.40
	04/13/10	11:30	12.43	--	--	2.97	--	15.40
	06/16/10	9:54	9.70	--	--	5.70	--	15.40
	08/13/10	13:30	12.52	--	--	2.88	--	15.40
	08/16/10	11:22	10.35	--	--	5.05	--	15.40
	08/16/10	11:25	10.32	--	--	5.08	--	15.40
	08/16/10	11:28	10.32	--	--	5.08	--	15.40
	08/16/10	11:31	10.29	--	--	5.11	--	15.40
	08/16/10	11:33	10.26	--	--	5.14	--	15.40
	08/16/10	11:37	10.25	--	--	5.15	--	15.40
	08/16/10	11:50	9.70	--	--	5.70	--	15.40
	09/21/10	11:02	12.55	--	--	2.85	--	15.40
	04/25/11	14:55	10.83	--	--	4.57	--	15.40
	09/21/11	10:55	11.45	--	--	3.95	--	15.40
	11/21/11	9:45	10.08	--	--	5.32	--	15.40
(15.40)[R]	02/20/12	11:36	11.25	--	--	4.15	--	15.40
	04/17/12	10:45	12.30	--	--	3.10	--	15.40
	10/10/12	12:05	11.19	--	--	4.21	--	15.40
	12/24/12	11:15	8.73	--	--	6.67	--	15.40
	01/08/13	15:52	8.42	--	--	6.98	--	15.40
	04/30/13	10:10	9.59	--	--	5.81	--	15.40
	09/19/13	9:45	12.23	--	--	3.17	--	15.40
	11/22/13	11:00	8.98	--	--	6.42	--	15.40
	06/23/14	9:01	12.88	--	--	2.52	--	15.40
	12/15/14	13:18	7.45	--	--	7.95	--	15.40
	06/17/15	10:55	10.24	--	--	5.16	--	15.40
	12/09/15	9:45	7.82	--	--	7.58	--	15.40
	01/15/16	15:38	10.63	--	--	4.77	--	15.40
	02/16/16	8:55	8.94	--	--	6.46	--	15.40
	06/13/16	8:55	12.48	--	--	2.92	--	15.40
	09/22/16	12:27	9.36	--	--	6.04	--	15.40
	01/12/17	10:11	9.24	--	--	6.16	--	15.40
	03/27/17	13:00	11.49	--	--	3.91	5.90	15.40
	06/16/17	8:53	10.25	--	--	5.15	5.90	15.40
	11/07/17	13:04	10.21	--	--	5.19	5.90	15.40
	03/26/18	8:00	10.01	--	--	5.39	5.90	15.40
	06/19/18	15:42	13.06	--	--	2.34	5.90	15.40
	09/27/18	12:13	11.70	--	--	3.70	5.90	15.40
	12/12/18	15:08	9.79	--	--	5.61	5.90	15.40
	03/25/19	15:09	11.69	--	--	3.71	5.90	15.40
	06/24/19	16:16	12.90	--	--	2.50	5.90	15.40
	09/25/19	8:43	13.27	--	--	2.13	5.90	15.40
	12/16/19	14:31	9.66	--	--	5.74	5.90	15.40
	03/25/20	12:38	11.82			3.58	5.90	15.40
	06/17/20	8:53	12.25	--	--	3.15	5.90	15.40
	09/11/20	8:12	13.36	--	--	2.04	5.90	15.40
	11/17/20	9:37	7.59	--	--	7.81	5.90	15.40
	03/15/21	**13:18**	**11.82**	**--**	**--**	**3.58**	**5.90**	**15.40**
	06/09/21	**11:10**	**13.03**	**--**	**--**	**2.37**	**5.90**	**15.40**
MW-209	02/16/16	9:45	8.26	--	--	7.27	--	15.53
(15.53)	06/13/16	9:50	10.31	--	--	5.22	--	15.53
	09/22/16	12:12	10.21	--	--	5.32	--	15.53
	01/12/17	11:51	8.01	--	--	7.52	--	15.53
	03/27/17	12:35	8.46	--	--	7.07	12.53	15.53
	06/16/17	9:26	9.59	--	--	5.94	12.53	15.53
	12/16/19	14:07	8.84	--	--	6.69	12.53	15.53
	03/25/20	13:54	9.80			5.73	12.53	15.53
	06/17/20	10:20	10.09	--	--	5.04	12.53	15.53
	09/11/20	9:28	10.51	--	--	5.02	12.53	15.53
	11/17/20	10:50	8.58	--	--	6.95	12.53	15.53
	03/15/21	**14:20**	**9.53**	**--**	**--**	**6.00**	**12.53**	**15.53**
	06/09/21	**12:43**	**10.14**	**--**	**--**	**5.39**	**12.53**	**15.53**
MW-210	02/16/16	9:50	7.52	--	--	7.61	--	15.13
(15.13)	06/13/16	9:45	9.59	--	--	5.54	--	15.13
	09/22/16	12:08	9.71	--	--	5.42	--	15.13
	01/12/17	11:56	8.31	--	--	6.82	--	15.13
	03/27/17	12:30	8.61	--	--	6.52	12.13	15.13
	06/16/17	9:24	8.94	--	--	6.19	12.13	15.13
	12/16/19	14:12	9.73	--	--	5.40	12.13	15.13
	03/25/20	9:23	8.93	--	--	6.09	12.13	15.13
	06/17/20	10:18	9.24	--	--	5.78	12.13	15.13
	09/11/20	9:24	9.68	--	--	5.45	12.13	15.13
	11/17/20	12:31	8.02	--	--	7.11	12.13	15.13
	03/15/21	**14:16**	**8.81**	**--**	**--**	**6.32**	**12.13**	**15.13**
	06/09/21	**12:49**	**9.29**	**--**	**--**	**5.84**	**12.13**	**15.13**
MW-211	02/16/16	9:55	7.91	--	--	7.11	--	15.02
(15.02)	06/13/16	9:40	9.79	--	--	5.23	--	15.02
	09/22/16	12:05	9.77	--	--	5.25	--	15.02
	01/12/17	11:59	8.18	--	--	6.84	--	15.02
	03/27/17	12:25	8.04	--	--	6.98	12.02	15.02
	06/16/17	9:20	9.55	--	--	5.47	12.02	15.02
	12/16/19	14:18	9.28	--	--	5.74	12.02	15.02
	03/25/20	13:46	9.28	--	--	6.33	12.02	15.02
	06/17/20	10:16	9.58	--	--	6.03	12.02	15.02
	09/11/20	9:20	10.02	--	--	5.00	12.02	15.02
	11/17/20	10:44	8.22	--	--	6.80	12.02	15.02
	03/15/21	**14:14**	**9.02**	**--**	**--**	**6.00**	**12.02**	**15.02**
	06/09/21	**12:54**	**9.66**	**--**	**--**	**5.36**	**12.02**	**15.02**

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
MW-70R	02/16/16	9:05	9.14	--	--	6.47	--	15.61
(15.61)	06/13/16	8:50	12.41	--	--	3.20	--	15.61
	09/22/16	12:30	9.69	--	--	5.92	--	15.61
	01/12/17	9:48	9.25	--	--	6.36	--	15.61
	03/27/17	13:05	11.41	--	--	4.20	11.61	15.61
	06/16/17	8:59	10.42	--	--	5.19	11.61	15.61
	11/07/17	13:09	10.32	--	--	5.29	11.61	15.61
	03/26/18	7:51	10.09	--	--	5.52	11.61	15.61
	06/19/18	15:45	12.64	--	--	2.97	11.61	15.61
	09/27/18	12:16	11.66	--	--	3.95	11.61	15.61
	12/12/18	15:15	9.88	--	--	5.73	11.61	15.61
	03/25/19	15:15	11.54	--	--	4.07	11.61	15.61
	06/24/19	16:12	12.63	--	--	2.98	11.61	15.61
	09/25/19	8:47	12.88	--	--	2.73	11.61	15.61
	12/16/19	14:26	9.76	--	--	5.85	11.61	15.61
	03/25/20	12:33	11.58	--	--	4.03	11.61	15.61
	06/17/20	8:51	11.93	--	--	3.68	11.61	15.61
	09/11/20	8:07	13.01	--	--	2.60	11.61	15.61
	11/17/20	9:34	7.82	--	--	7.79	11.61	15.61
	03/15/21	**13:15**	**11.56**	**--**	**--**	**4.05**	**11.61**	**15.61**
	06/09/21	**12:49**	**12.49**	**--**	**--**	**3.12**	**11.61**	**15.61**
RW-1	09/13/07	--	9.12	--	--	-4.47	--	4.65
(4.65)	11/01/07	10:45	9.60	--	--	-4.95	--	4.65
	11/26/07	11:57	8.43	--	--	-3.78	--	4.65
	12/07/07	11:55	7.00	--	--	-2.35	--	4.65
	12/19/07	9:25	7.75	--	--	-3.10	--	4.65
	01/03/08	9:05	7.78	--	--	-3.13	--	4.65
	01/30/07	8:34	8.22	--	--	-3.57	--	4.65
	02/12/08	9:00	8.55	--	--	-3.90	--	4.65
	03/03/08	8:58	8.88	--	--	-4.23	--	4.65
	03/17/08	8:52	8.80	--	--	-4.15	--	4.65
	04/01/08	8:49	8.79	--	--	-4.14	--	4.65
	04/14/08	8:51	8.85	--	--	-4.20	--	4.65
	04/28/08	9:01	8.90	--	--	-4.25	--	4.65
	05/13/08	9:10	9.25	--	--	-4.60	--	4.65
(14.20)[8]	05/27/08	10:25	9.05	--	--	5.15	--	14.20
	06/10/08	10:36	8.88	--	--	5.32	--	14.20
	06/24/08	9:15	8.98	--	--	5.22	--	14.20
	07/07/08	9:26	8.65	--	--	5.55	--	14.20
	07/22/08	9:15	8.88	--	--	5.32	--	14.20
	08/12/08	9:23	8.86	--	--	5.34	--	14.20
	09/03/08	--	9.13	--	--	5.07	--	14.20
	10/17/08	8:29	6.33	--	--	7.87	--	14.20
	10/29/08	8:17	9.23	--	--	4.97	--	14.20
	11/12/08	9:09	7.63	--	--	6.57	--	14.20
	12/03/08	11:25	9.82	--	--	4.38	--	14.20
	01/06/09	9:15	7.86	--	--	6.34	--	14.20
	01/20/09	12:20	8.34	--	--	5.86	--	14.20
	02/03/09	9:08	8.89	--	--	5.31	--	14.20
	02/17/09	9:06	8.41	--	--	5.79	--	14.20
	03/12/09	11:18	8.75	--	--	5.45	--	14.20
	03/25/09	9:05	8.62	--	--	5.58	--	14.20
	04/08/09	9:14	8.58	--	--	5.62	--	14.20
	04/30/09	9:20	8.55	--	--	5.65	--	14.20
	05/12/09	9:21	7.98	--	--	6.22	--	14.20
	05/26/09	13:19	8.24	--	--	5.96	--	14.20
	06/09/09	9:09	8.00	--	--	6.20	--	14.20
	06/25/09	9:19	8.08	--	--	6.12	--	14.20
	07/07/09	9:13	8.34	--	--	5.86	--	14.20
	09/10/09	9:52	8.98	--	--	5.22	--	14.20
	09/23/09	9:09	8.98	--	--	5.22	--	14.20
	10/08/09	9:24	9.01	--	--	5.19	--	14.20
	10/19/09	9:36	8.60	--	--	5.60	--	14.20
(14.20)[8]	11/12/09	9:10	7.75	--	--	6.45	--	14.20
	03/24/10	9:24	8.39	--	--	5.81	--	14.20
	04/13/10	10:15	8.29	--	--	5.91	--	14.20
	05/24/10	10:14	8.38	--	--	5.82	--	14.20
	09/21/10	9:59	8.00	--	--	6.20	--	14.20
	11/19/10	16:25	7.98	--	--	6.22	--	14.20
	03/04/11	9:12	7.96	--	--	6.24	--	14.20
	04/25/11	9:10	8.25	--	--	5.95	--	14.20
	09/21/11	8:30	8.94	--	--	5.26	--	14.20
	11/21/11	8:30	8.67	--	--	5.53	--	14.20
	02/20/12	9:55	8.41	--	--	5.79	--	14.20
	04/17/12	9:22	8.40	--	--	5.80	--	14.20
	10/10/12	9:40	9.41	--	--	4.79	--	14.20
	12/24/12	UNABLE TO ACCESS						14.20
	01/08/13	13:40	7.54	--	--	6.66	--	14.20
	04/30/13	9:20	8.31	--	--	5.89	--	14.20
	09/15/13	8:25	6.30	--	--	7.90	--	14.20
	11/22/13	8:00	9.04	--	--	5.16	--	14.20
	02/25/14	12:00	7.80	--	--	6.40	--	14.20
	05/05/14	8:45	7.30	--	--	6.90	--	14.20
	06/12/14	Well Decommissioned						14.20
RW-2	04/28/08	9:10	9.98	--	--	-5.51	--	4.47
(4.47)	05/13/08	9:08	8.29	--	--	-3.82	--	4.47
(14.3)[6]	05/27/08	10:23	9.12	--	--	5.18	--	14.30
	06/10/08	10:38	9.00	--	--	5.30	--	14.30
	06/24/08	9:19	9.12	--	--	5.18	--	14.30
	07/07/08	9:30	8.86	--	--	5.44	--	14.30
	07/22/08	9:19	9.03	--	--	5.27	--	14.30
	08/12/08	9:27	8.78	--	--	5.52	--	14.30
	09/03/08	--	9.23	--	--	5.07	--	14.30
	10/17/08	8:35	6.34	--	--	7.96	--	14.30
	10/29/08	8:21	9.37	--	--	4.93	--	14.30
	11/12/08	9:13	6.32	--	--	7.98	--	14.30
	12/03/08	11:23	8.92	--	--	5.38	--	14.30
	01/06/09	9:18	6.84	--	--	7.46	--	14.30
	01/20/09	12:23	8.40	--	--	5.90	--	14.30
	02/03/09	9:13	9.08	--	--	5.22	--	14.30
	02/17/09	9:09	8.55	--	--	5.75	--	14.30

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
RW-2 (continued)	03/12/09	11:21	8.91	--	--	5.39	--	14.30
	03/25/09	9:07	8.50	--	--	5.80	--	14.30
	04/08/09	9:18	8.68	--	--	5.62	--	14.30
	04/30/09	9:24	8.70	--	--	5.60	--	14.30
	05/12/09	9:15	8.15	--	--	6.15	--	14.30
	05/26/09	13:17	8.31	--	--	5.99	--	14.30
	06/09/09	9:13	8.21	--	--	6.09	--	14.30
	06/25/09	9:22	8.28	--	--	6.02	--	14.30
	07/07/09	9:17	8.49	--	--	5.81	--	14.30
	09/10/09	9:50	9.11	--	--	5.19	--	14.30
	09/23/09	9:12	9.10	--	--	5.20	--	14.30
	10/08/09	9:27	9.24	--	--	5.06	--	14.30
	10/19/09	9:40	8.72	--	--	5.58	--	14.30
	11/12/09	9:12	7.16	--	--	7.14	--	14.30
	03/24/10	9:28	8.42	--	--	5.88	--	14.30
	04/13/10	10:12	8.35	--	--	5.95	--	14.30
	05/24/10	10:16	8.46	--	--	5.84	--	14.30
	08/16/10	7:40	7.87	--	--	6.43	--	14.30
	08/16/10	7:42	7.87	--	--	6.43	--	14.30
	09/02/10	10:14	9.24	--	--	5.06	--	14.30
	09/02/10	10:42	9.25	--	--	5.05	--	14.30
	09/02/10	11:45	9.32	--	--	4.98	--	14.30
	09/02/10	11:46	9.32	--	--	4.98	--	14.30
	09/02/10	11:47	9.32	--	--	4.98	--	14.30
	09/02/10	11:48	9.32	--	--	4.98	--	14.30
	09/02/10	11:49	9.32	--	--	4.98	--	14.30
	09/02/10	11:55	9.33	--	--	4.97	--	14.30
	09/02/10	12:00	9.33	--	--	4.97	--	14.30
	09/02/10	12:05	9.33	--	--	4.97	--	14.30
	09/02/10	12:10	9.33	--	--	4.97	--	14.30
	09/02/10	12:15	9.34	--	--	4.96	--	14.30
	09/02/10	12:20	9.34	--	--	4.96	--	14.30
	09/02/10	12:25	9.34	--	--	4.96	--	14.30
	09/02/10	12:42	9.35	--	--	4.95	--	14.30
	09/02/10	13:00	9.36	--	--	4.94	--	14.30
	09/02/10	13:32	9.36	--	--	4.94	--	14.30
	09/03/10	9:12	9.52	--	--	4.78	--	14.30
	09/03/10	10:26	9.48	--	--	4.82	--	14.30
	09/03/10	10:54	9.55	--	--	4.75	--	14.30
	09/03/10	11:08	9.54	--	--	4.76	--	14.30
	09/21/10	9:57	8.10	--	--	6.20	--	14.30
	11/19/10	16:24	7.62	--	--	6.68	--	14.30
	03/04/11	9:16	7.80	--	--	6.50	--	14.30
	04/25/11	9:15	8.20	--	--	6.10	--	14.30
	09/21/11	8:33	8.39	--	--	5.91	--	14.30
	11/21/11	8:36	8.82	--	--	5.48	--	14.30
	02/20/12	9:57	8.53	--	--	5.77	--	14.30
(14.3)[6]	04/17/12	9:25	8.38	--	--	5.92	--	14.30
	10/10/12	9:50	9.26	--	--	5.04	--	14.30
	12/24/12	UNABLE TO ACCESS						14.30
	01/08/13	13:42	7.40	--	--	6.90	--	14.30
	04/30/13	9:25	8.35	--	--	5.95	--	14.30
	09/15/13	8:28	8.32	--	--	5.98	--	14.30
	11/22/13	8:05	9.22	--	--	5.08	--	14.30
	02/25/14	11:52	7.54	--	--	6.76		14.30
	05/05/14	08:55	7.00	--	--	7.30		14.30
	06/12/14	Well Decommissioned						14.30
RW-3	09/13/07	--	9.45	--	--	-4.75	--	4.70
(4.70)	11/01/07	10:52	10.00	--	--	-5.30	--	4.70
	11/26/07	12:00	8.60	--	--	-3.90	--	4.70
	12/07/07	11:50	7.10	--	--	-2.40	--	4.70
	12/19/07	9:20	7.63	--	--	-2.93	--	4.70
	01/03/08	9:07	7.49	--	--	-2.79	--	4.70
	01/30/08	8:38	8.44	--	--	-3.74	--	4.70
	02/12/08	9:30	8.84	--	--	-4.14	--	4.70
	03/03/08	9:02	9.11	--	--	-4.41	--	4.70
	03/17/08	8:58	8.91	--	--	-4.21	--	4.70
	04/01/08	8:43	9.01	--	--	-4.31	--	4.70
	04/14/08	8:44	9.16	--	--	-4.46	--	4.70
	04/28/08	9:16	9.10	--	--	-4.40	--	4.70
(14.3)[6]	05/13/08	9:03	9.53	--	--	4.77	--	14.30
	05/27/08	10:20	9.36	--	--	4.94	--	14.30
	06/10/08	10:41	9.34	Sheen	--	4.96	--	14.30
	06/24/08	9:23	9.34	--	--	4.96	--	14.30
	07/07/08	9:34	9.04	--	--	5.26	--	14.30
	07/22/08	9:22	9.21	--	--	5.09	--	14.30
	08/12/08	9:30	9.21	--	--	5.09	--	14.30
	09/03/08	--	9.51	--	--	4.79	--	14.30
	10/17/08	8:39	9.60	--	--	4.70	--	14.30
	10/29/08	8:26	9.53	--	--	4.77	--	14.30
	11/12/08	9:17	7.10	--	--	7.20	--	14.30
	12/03/08	11:19	8.04	--	--	6.26	--	14.30
	01/06/09	9:21	7.69	--	--	6.61	--	14.30
	01/20/09	12:26	8.58	--	--	5.72	--	14.30
	02/03/09	9:17	9.22	Sheen	--	5.08	--	14.30
	02/17/09	9:11	8.69	--	--	5.61	--	14.30
	03/12/09	11:24	9.08	--	--	5.22	--	14.30
	03/25/09	9:09	8.91	8.90	0.01	5.39	--	14.30
	04/08/09	9:20	8.83	8.82	0.01	5.47	--	14.30
	04/30/09	9:25	8.90	Sheen	--	5.40	--	14.30
	05/12/09	9:26	8.45	Sheen	--	5.85	--	14.30
	05/26/09	14:38	9.09	--	--	5.21	--	14.30
	06/09/09	9:16	8.40	--	--	5.90	--	14.30
	06/25/09	9:23	8.35	--	--	5.95	--	14.30
	07/07/09	9:21	8.62	--	--	5.68	--	14.30
	08/20/09	8:26	8.60	Sheen	--	5.70	--	14.30

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
RW-3 (continued)	08/28/09	16:00	9.76	--	--	4.54	--	14.30
	09/10/09	9:47	9.54	--	--	4.76	--	14.30
	09/23/09	9:16	9.41	Sheen	--	4.89	--	14.30
	10/08/09	9:30	9.46	--	--	4.84	--	14.30
	10/19/09	9:45	9.13	--	--	5.17	--	14.30
	11/12/09	9:15	8.36	--	--	5.94	--	14.30
	03/24/10	9:31	8.60	Sheen	--	5.70	--	14.30
	04/13/10	10:09	8.58	--	--	5.72	--	14.30
	05/24/10	10:18	8.82	--	--	5.48	--	14.30
	08/16/10	7:40	8.40	--	--	5.90	--	14.30
	08/16/10	7:50	8.36	--	--	5.94	--	14.30
	09/02/10	10:13	9.81	--	--	4.49	--	14.30
	09/02/10	10:40	9.79	--	--	4.51	--	14.30
	09/21/10	9:55	8.58	--	--	5.72	--	14.30
	11/19/10	16:32	7.73	--	--	6.57	--	14.30
	03/04/11	9:19	7.92	--	--	6.38	--	14.30
	04/25/11	9:30	8.43	--	--	5.87	--	14.30
	09/21/11	8:37	8.39	--	--	5.91	--	14.30
	11/21/11	8:43	9.00	--	--	5.30	--	14.30
	02/20/12	10:00	8.60	--	--	5.70	--	14.30
	04/17/12	9:30	8.58	--	--	5.72	--	14.30
	10/10/12	9:55	9.67	--	--	4.63	--	14.30
	12/24/12			UNABLE TO ACCESS				14.30
	01/08/13	13:43	7.46	--	--	6.84	--	14.30
	04/30/13	9:28	8.49	LNAPL on probe	--	5.81	--	14.30
	09/15/13	8:31	8.65	--	--	5.65	--	14.30
	11/22/13	8:10	9.55	--	--	4.75	--	14.30
	02/25/14	11:15	7.67			6.63		14.30
	05/05/14	8:04	7.50			6.80		14.30
	06/12/14			Well Decommissioned				14.30
RW-4				UNABLE TO LOCATE				
RW-5	09/13/07	--	8.6	--	--	5.30	--	13.90
(13.9)[6]	11/01/07	11:00	9.4	--	--	4.50	--	13.90
	11/26/07	12:05	7.89	--	--	6.01	--	13.90
	12/07/07	11:45	6.4	--	--	7.50	--	13.90
	12/19/07	9:15	2.2	--	--	11.70	--	13.90
(13.9)[6]	05/13/08	9:01	8.72	--	--	5.18	--	13.90
	09/03/08	--	8.74	--	--	5.16	--	13.90
	12/03/08	11:16	8.45	--	--	5.45	--	13.90
	02/17/09	9:14	7.77	Sheen	--	6.13	--	13.90
	05/12/09	9:12	7.48	--	--	6.42	--	13.90
	05/26/09	13:15	7.94	--	--	5.96	--	13.90
	09/10/09	9:44	8.95	--	--	4.95	--	13.90
	04/13/10	10:07	7.75	--	--	6.15	--	13.90
	09/21/10	9:52	7.82	--	--	6.08	--	13.90
	04/25/11			UNABLE TO LOCATE				13.90
	09/21/11	8:48	8.52	--	--	5.38	--	13.90
	11/21/11	8:49	8.52	--	--	5.38	--	13.90
	02/20/12	10:02	7.85	--	--	6.05	--	13.90
	04/17/12	9:35	7.82	--	--	6.08	--	13.90
	10/10/12	10:02	9.00	--	--	4.90		13.90
	12/24/12			UNABLE TO ACCESS				13.90
	01/08/13	13:44	6.90	--	--	7.00	--	13.90
	04/30/13	9:35	7.75	--	--	6.15	--	13.90
	09/15/13	8:34	8.00	--	--	5.90	--	13.90
	11/22/13	8:15	9.20	--	--	4.70	--	13.90
	02/25/14	11:35	7.43	--	--	6.47	--	13.90
	05/05/14	09:27	7.23	--	--	6.67	--	13.90
	06/11/14			Well Decommissioned				13.90
RW-6	05/13/08[7]	8:58	8.35	--	--	5.55	--	13.90
(13.9)[6]	09/03/08	--	8.14	--	--	5.76	--	13.90
	12/03/08	11:13	7.95	--	--	5.95	--	13.90
	02/17/09	9:17	7.80	--	--	6.10	--	13.90
	05/12/09	9:10	7.57	--	--	6.33	--	13.90
	05/26/09	13:12	7.65	--	--	6.25	--	13.90
	09/10/09	9:43	7.90	--	--	6.00	--	13.90
	04/13/10	10:05	7.42	--	--	6.48	--	13.90
	09/21/10	9:50	6.74	--	--	7.16	--	13.90
	04/25/11			UNABLE TO LOCATE				13.90
	09/21/11			UNABLE TO LOCATE				13.90
	11/21/11			UNABLE TO LOCATE				13.90
	02/20/12			UNABLE TO LOCATE				13.90
	04/17/12			UNABLE TO LOCATE				13.90
	10/10/12			UNABLE TO LOCATE				13.90
	12/24/12			UNABLE TO ACCESS				13.90
	01/08/13	13:45	6.87	--	--	7.03	--	13.90
	04/30/13	9:40	7.60	--	--	6.30	--	13.90
	09/15/13	8:40	7.73	--	--	6.17	--	13.90
	11/22/13	8:20	8.02	--	--	5.88	--	13.90
	02/25/14	11:25	6.98	--	--	6.92	--	13.90
	05/05/14	09:36	7.02	--	--	6.88	--	13.90
	06/11/14			Well Decommissioned				13.90
RW-7	09/13/07	--	8.75	--	--	5.45	--	14.20
(14.2)[6]	11/01/07	11:20	9.3	--	--	4.90	--	14.20
	11/26/07	12:07	8.1	--	--	6.10	--	14.20
	12/07/07	11:40	6.45	--	--	7.75	--	14.20
	12/07/07	9:10	6.4	--	--	7.80	--	14.20
	05/13/08	8:43	8.80	--	--	5.40	--	14.20
	09/03/08	--	8.84	--	--	5.36	--	14.20
	12/03/08	11:11	8.60	--	--	5.60	--	14.20
	02/17/09	9:20	8.95	--	--	5.25	--	14.20
	05/12/09	9:08	7.41	--	--	6.79	--	14.20
	05/26/09	13:10	7.81	--	--	6.39	--	14.20
	08/04/09	--	8.18	--	--	6.02	--	14.20
	09/10/09	9:40	8.83	--	--	5.37	--	14.20
	04/13/10	10:03	7.78	--	--	6.42	--	14.20

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
RW-7 (continued)	09/21/10	9:47	7.88	--	--	6.32	--	14.20
	04/25/11	9:40	7.62	--	--	6.58	--	14.20
	09/21/11	8:51	8.49	--	--	5.71	--	14.20
	11/21/11	8:56	4.62	--	--	9.58	--	14.20
	02/20/12	10:04	7.92	--	--	6.28	--	14.20
	04/17/12	9:40	7.87	--	--	6.33	--	14.20
	10/10/12	10:07	8.99	--	--	5.21	--	14.20
	12/24/12			UNABLE TO ACCESS				14.20
	01/08/13	13:46	6.24	--	--	7.96	--	14.20
	04/30/13	9:43	7.92	--	--	6.28	--	14.20
	09/15/13	8:40	8.08	--	--	6.12	--	14.20
	11/22/13	8:25	8.95	--	--	5.25	--	14.20
	02/25/14	11:15	7.40	--	--	6.80	--	14.20
	05/05/14	09:46	7.40	--	--	6.80	--	14.20
	06/11/14			Well Decommissioned				14.20
RW-8 (13.9)[s]	09/13/07	--	8.75	--	--	5.15	--	13.90
	11/01/07	11:25	8.9	--	--	5.00	--	13.90
	11/26/07	12:09	7.9	--	--	6.00	--	13.90
	12/07/07	11:35	6.07	--	--	7.83	--	13.90
	12/19/07	9:05	7.18	--	--	6.72	--	13.90
	05/13/08	8:39	8.59	--	--	5.31	--	13.90
	09/03/08	--	8.53	--	--	5.37	--	13.90
	12/03/08	11:09	8.20	--	--	5.70	--	13.90
	02/17/09	9:24	7.70	--	--	6.20	--	13.90
	05/12/09	9:05	7.41	--	--	6.49	--	13.90
(13.9)[s]	05/26/09	13:07	7.59	--	--	6.31	--	13.90
	09/10/09	9:38	8.61	--	--	5.29	--	13.90
	04/13/10	10:00	7.39	--	--	6.51	--	13.90
	09/21/10	9:43	7.58	--	--	6.32	--	13.90
	04/25/11	9:45	7.21	--	--	6.69	--	13.90
	09/21/11	8:53	8.15	--	--	5.75	--	13.90
	11/21/11	9:03	8.24	--	--	5.66	--	13.90
	02/20/12	10:05	7.55	--	--	6.35	--	13.90
	04/17/12	9:45	7.56	--	--	6.34	--	13.90
	10/10/12	10:10	8.61	--	--	5.29	--	13.90
	12/24/12			UNABLE TO ACCESS				13.90
	01/08/13	13:54	6.65	--	--	7.25	--	13.90
	04/30/13	9:48	7.52	--	--	6.38	--	13.90
	09/15/13	8:43	7.71	--	--	6.19	--	13.90
	11/22/13	8:30	8.55	--	--	5.35	--	13.90
	02/25/14	11:00	7.00	--	--	6.90	--	13.90
	05/05/14	10:04	7.11	--	--	6.79	--	13.90
	06/11/14			Well Decommissioned				13.90
RW-9 (14.1)[s]	09/13/07	--	8.45	--	--	5.65	--	14.10
	11/01/07	11:30	7.4	--	--	6.70	--	14.10
	11/26/07	12:11	7.44	--	--	6.66	--	14.10
	12/07/07	11:32	5.55	--	--	8.55	--	14.10
	12/19/07	9:00	6.15	--	--	7.95	--	14.10
	05/13/08	8:33	8.61	--	--	5.49	--	14.10
	09/03/08	--	7.38	--	--	6.72	--	14.10
	12/03/08	11:06	6.95	--	--	7.15	--	14.10
	02/17/09	9:27	6.80	--	--	7.30	--	14.10
	05/12/09	9:03	7.22	--	--	6.88	--	14.10
	05/26/09	13:04	10.06	--	--	4.04	--	14.10
	09/10/09	9:34	7.47	--	--	6.63	--	14.10
	04/13/10	9:57	8.28	--	--	5.82	--	14.10
	09/21/10	9:40	8.47	--	--	5.63	--	14.10
	04/25/11	9:50	7.29	--	--	6.81	--	14.10
	09/21/11	8:54	8.20	--	--	5.90	--	14.10
	11/21/11	9:08	7.68	--	--	6.42	--	14.10
	02/20/12	10:07	7.78	--	--	6.32	--	14.10
	04/17/12	9:50	8.02	--	--	6.08	--	14.10
	10/10/12	10:15	8.35	--	--	5.75	--	14.10
	12/24/12			UNABLE TO ACCESS				14.10
	01/08/13	13:55	5.55	--	--	8.55	--	14.10
	04/30/13	9:51	7.02	--	--	7.08	--	14.10
	09/15/13	8:49	8.88	--	--	5.22	--	14.10
	11/22/13	8:35	7.06	--	--	7.04	--	14.10
	02/25/14	10:50	6.28	--	--	7.82	--	14.10
	05/05/14	10:18	6.70	--	--	7.40	--	14.10
	06/10/14			Well Decommissioned				14.10
RW-10 (14.3)[s]	09/13/07	--	8.9	--	--	5.40	--	14.30
	11/01/07	11:40	8.7	--	--	5.60	--	14.30
	11/26/07	12:12	7.89	--	--	6.41	--	14.30
	12/07/07	11:29	6.26	--	--	8.04	--	14.30
	12/19/07	8:55	7.25	--	--	7.05	--	14.30
	05/13/08	8:31	8.86	--	--	5.44	--	14.30
	09/03/08	--	8.41	--	--	5.89	--	14.30
	12/03/08	11:03	7.87	--	--	6.43	--	14.30
	02/17/09	9:28	7.90	--	--	6.40	--	14.30
	05/12/09	9:01	7.47	--	--	6.83	--	14.30
	05/26/09	13:02	8.95	--	--	5.35	--	14.30
	09/10/09	9:32	8.58	--	--	5.72	--	14.30
	04/13/10	9:55	7.80	--	--	6.50	--	14.30
	09/21/10	9:38	8.12	--	--	6.18	--	14.30
	04/25/11	9:51	6.70	--	--	7.60	--	14.30
	09/21/11	8:56	8.76	--	--	5.54	--	14.30
	11/21/11	9:14	8.42	--	--	5.88	--	14.30
	02/20/12	10:10	7.75	--	--	6.55	--	14.30
	04/17/12	9:53	7.90	--	--	6.40	--	14.30
	10/10/12	10:18	9.09	--	--	5.21	--	14.30
	12/24/12			UNABLE TO ACCESS				14.30
	01/08/13	13:59	6.32	--	--	7.98		14.30
	04/30/13	9:51	7.46	--	--	6.84	--	14.30
	09/15/13	8:55	8.66	--	--	5.64	--	14.30
	11/22/13	8:40	8.22	--	--	6.08	--	14.30

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
RW-10 (continued)	02/25/14	10:38	7.07	--	--	7.23	--	14.30
	05/05/14	10:33	7.22	--	--	7.08	--	14.30
	06/10/14			Well Decommissioned				14.30
RW-11	12/07/07	11:14	6.5	--	--	7.60	--	14.10
(14.1)[s]	12/19/07	8:50	7.6	--	--	6.50	--	14.10
	05/13/08	8:28	8.86	--	--	5.24	--	14.10
	09/03/08	--	8.79	--	--	5.31	--	14.10
	12/03/08	11:01	8.26	--	--	5.84	--	14.10
	02/17/09	9:31	7.80	--	--	6.30	--	14.10
RW-11 (continued)	05/12/09	8:59	7.64	--	--	6.46	--	14.10
	05/26/09	12:59	8.33	--	--	5.77	--	14.10
	09/10/09	9:29	8.61	--	--	5.49	--	14.10
	04/13/10	9:53	7.85	--	--	6.25	--	14.10
	09/21/10	9:35	7.98	--	--	6.12	--	14.10
(14.1)[s]	04/25/11	9:55	7.46	--	--	6.64	--	14.10
	09/21/11	8:57	8.77	--	--	5.33	--	14.10
	11/21/11	9:20	8.52	--	--	5.58	--	14.10
	02/20/12	10:11	7.92	--	--	6.18	--	14.10
	04/17/12	10:00	7.90	--	--	6.20	--	14.10
	10/10/12	10:21	9.12	--	--	4.98	--	14.10
	12/24/12			UNABLE TO ACCESS				14.10
	01/08/13	14:00	6.74	--	--	7.36	--	14.10
	04/30/13	9:54	7.73	--	--	6.37	--	14.10
	09/15/13	8:58	8.50	--	--	5.60	--	14.10
	11/22/13	8:45	8.90	--	--	5.20	--	14.10
	02/25/14	10:30	7.40	--	--	6.70	--	14.10
	05/05/14	10:45	7.51	--	--	6.59	--	14.10
	06/10/14			Well Decommissioned				14.10
RW-12	12/07/07	11:08	6.78	--	--	7.22	--	14.00
(14.0)[s]	12/19/07	8:40	7.88	--	--	6.12	--	14.00
	05/13/08	8:25	8.97	--	--	5.03	--	14.00
	09/03/08	--	9.02	--	--	4.98	--	14.00
	12/03/08	10:48	8.56	--	--	5.44	--	14.00
	02/17/09	9:33	7.85	--	--	6.15	--	14.00
	05/12/09	8:56	7.76	--	--	6.24	--	14.00
	05/26/09	12:55	8.37	--	--	5.63	--	14.00
	09/10/09	9:27	9.22	--	--	4.78	--	14.00
	04/13/10	9:50	7.93	--	--	6.07	--	14.00
	09/21/10			UNABLE TO LOCATE				14.00
	04/25/11			UNABLE TO LOCATE				14.00
	09/21/11			UNABLE TO LOCATE				14.00
	11/21/11			UNABLE TO LOCATE				14.00
	02/20/12			UNABLE TO LOCATE				14.00
	04/17/12			UNABLE TO LOCATE				14.00
	10/10/12			UNABLE TO LOCATE				14.00
	12/24/12			UNABLE TO ACCESS				14.00
	01/08/13			UNABLE TO LOCATE				14.00
	04/30/13			UNABLE TO LOCATE				14.00
	09/15/13			UNABLE TO LOCATE				14.00
	11/22/13			UNABLE TO LOCATE				14.00
	06/09/14			UNABLE TO LOCATE DURING FINAL DECOMMISSIONING ACTIVITIES				14.00
RW-13	12/07/07	11:05	6.83	--	--	7.27	--	14.10
(14.1)[s]	12/19/07	8:35	7.5	--	--	6.60	--	14.10
	05/13/08	8:22	9.01	--	--	5.09	--	14.10
	09/03/08	--	9.05	--	--	5.05	--	14.10
	12/03/08	10:45	8.64	--	--	5.46	--	14.10
	02/17/09	9:36	8.22	--	--	5.88	--	14.10
	05/12/09	8:53	7.85	--	--	6.25	--	14.10
	05/26/09	12:53	8.48	--	--	5.62	--	14.10
	09/10/09	9:22	8.89	--	--	5.21	--	14.10
	04/13/10	9:47	8.01	--	--	6.09	--	14.10
	09/21/10	9:30	8.15	--	--	5.95	--	14.10
	04/25/11	10:00	7.51	--	--	6.59	--	14.10
	09/21/11	9:00	8.99	--	--	5.11	--	14.10
	11/21/11	9:27	8.56	--	--	5.54	--	14.10
	02/20/12	10:13	8.24	--	--	5.86	--	14.10
	04/17/12	10:04	8.21	--	--	5.89	--	14.10
	10/10/12	10:25	9.47	--	--	4.63	--	14.10
	12/24/12			UNABLE TO ACCESS				14.10
	01/08/13	14:02	7.07	--	--	7.03	--	14.10
	04/30/13	9:56	7.96	--	--	6.14	--	14.10
	09/15/13	9:01	8.68	--	--	5.42	--	14.10
	11/22/13	8:50	9.25	--	--	4.85	--	14.10
	02/25/14	10:00	8.16	--	--	5.94	--	14.10
	05/05/14	11:00	7.65	--	--	6.45	--	14.10
	06/10/14			Well Decommissioned				14.10
RW-14				UNABLE TO LOCATE				
RW-15	09/13/07	--	8.83	--	--	5.07	--	13.90
(13.9)[s]	11/01/07	11:50	9	--	--	4.90	--	13.90
	11/26/07	12:18	8.4	--	--	5.50	--	13.90
	12/07/07	10:56	6.55	--	--	7.35	--	13.90
	12/19/07	8:25	6.31	--	--	7.59	--	13.90
	05/13/08	8:17	8.97	--	--	4.93	--	13.90
	09/03/08	--	8.52	--	--	5.38	--	13.90
	12/03/08	10:40	8.31	--	--	5.59	--	13.90
	02/17/09	9:44	8.24	--	--	5.66	--	13.90
	05/12/09	8:50	8.19	--	--	5.71	--	13.90
	05/26/09	12:48	8.25	--	--	5.65	--	13.90
	09/10/09	9:20	5.52	--	--	8.38	--	13.90
	04/13/10	9:45	7.88	--	--	6.02	--	13.90
	09/21/10			UNABLE TO LOCATE				13.90
	04/25/11			UNABLE TO LOCATE				13.90
	09/21/11			UNABLE TO LOCATE				13.90
	11/21/11			UNABLE TO LOCATE				13.90
	2/20/12			UNABLE TO LOCATE				13.90
	04/17/12			UNABLE TO LOCATE				13.90

Appendix E
Summary of Historical Groundwater Elevation Data

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Well Number[1] (Well Casing Elevation)	Date Measured	Time Measured (hr:min)	Depth to Groundwater[2] (feet)	Depth to LNAPL[3] (feet)	LNAPL Thickness[3] (feet)	Groundwater Elevation[4] (feet)	Top of Well Screen Elevation[5] (feet)	Top of Casing
RW-15 (continued)	10/10/12			UNABLE TO LOCATE				13.90
	12/24/12			UNABLE TO LOCATE				13.90
	01/08/13			UNABLE TO LOCATE				13.90
(13.9)[8]	04/30/13			UNABLE TO LOCATE				13.90
	09/15/13			UNABLE TO LOCATE				13.90
	11/22/13			UNABLE TO LOCATE				13.90
	06/09/14			UNABLE TO LOCATE DURING FINAL DECOMMISSIONING ACTIVITIES				13.90
RW-21	09/13/07	--	9.85	Sheen	--	5.45	--	15.30
(5.87)	11/01/07	10:35	9.90	7.90	2.00	7.00	--	15.30
	11/26/07	12:23	--	Sheen	--	--	--	15.30
	12/07/07	9:40	6.90	Sheen	--	8.40	--	15.30
	12/19/07	--	7.79	--	--	7.51	--	15.30
	01/03/07	9:25	7.88	--	--	7.42	--	15.30
	01/30/07	8:44	8.67	--	--	6.63	--	15.30
	02/12/08	9:11	8.80	--	--	6.50	--	15.30
	03/03/08	9:10	9.25	--	--	6.05	--	15.30
	03/17/08	9:07	9.21	--	--	6.09	--	15.30
	04/01/08	9:05	9.09	--	--	6.21	--	15.30
	04/14/08	8:55	9.32	--	--	5.98	--	15.30
	04/28/08	9:24	9.33	--	--	5.97	--	15.30
	05/13/08			UNABLE TO ACCESS				15.30
(15.3)[8]	05/27/08	11:20	9.45	--	--	5.85	--	15.30
	06/10/08	10:45	9.21	--	--	6.09	--	15.30
	06/24/08	9:29	9.49	--	--	5.81	--	15.30
	07/07/08	9:39	9.19	--	--	6.11	--	15.30
	07/22/08	9:00	9.38	--	--	5.92	--	15.30
	08/12/08	9:36	9.35	--	--	5.95	--	15.30
	09/03/08	--	9.36	Sheen	--	5.94	--	15.30
	10/08/08	8:30	9.72	Sheen	--	5.58	--	15.30
	10/17/08	8:41	9.50	--	--	5.80	--	15.30
	10/29/08	8:31	9.58	--	--	5.72	--	15.30
	11/12/08	9:27	7.83	--	--	7.47	--	15.30
	12/03/08	10:10	9.22	9.20	0.02	6.10	--	15.30
	01/06/09	9:26	7.89	Sheen	--	7.41	--	15.30
	01/20/09	12:29	8.56	8.55	0.01	6.75	--	15.30
	02/03/09	9:24	9.20	Sheen	--	6.10	--	15.30
	02/17/09	9:50	9.05	Sheen	--	6.25	--	15.30
	03/12/09	11:31	9.16	Sheen	--	6.14	--	15.30
	03/25/09	9:24	9.01	Sheen	--	6.29	--	15.30
	04/08/09	9:57	8.91	8.90	0.01	6.40	--	15.30
	04/30/09	9:49	8.88	Sheen	--	6.42	--	15.30
	05/12/09	9:43	8.45	8.44	0.01	6.86	--	15.30
	05/26/09	14:48	8.82	--	--	6.48	--	15.30
	06/09/09	9:26	8.64	--	--	6.66	--	15.30
	06/25/09	9:29	8.68	--	--	6.62	--	15.30
	07/07/09	9:26	8.95	Sheen	--	6.35	--	15.30
	07/13/09	8:05	9.45	--	--	5.85	--	15.30
	08/05/09	6:45	8.96	Sheen	--	6.34	--	15.30
	08/06/09	9:18	9.06	--	--	6.24	--	15.30
	08/20/09	8:34	9.15	--	--	6.15	--	15.30
	09/10/09	9:57	9.28	--	--	6.02	--	15.30
	09/23/09	9:21	9.25	Sheen	--	6.05	--	15.30
	10/08/09	9:16	9.31	Sheen	--	5.99	--	15.30
	10/19/09	9:50	9.23	Sheen	--	6.07	--	15.30
	11/12/09	9:19	7.82	Sheen	--	7.48	--	15.30
	03/24/10	9:37	8.62	Sheen	--	6.68	--	15.30
	04/13/10	10:19	8.61	Sheen	--	6.69	--	15.30
	05/26/10	9:32	8.73	Sheen	--	6.57	--	15.30
	09/21/10	10:05	8.46	Sheen	--	6.84	--	15.30
	11/19/10	16:01	9.21	Sheen	--	6.09	--	15.30
	03/04/11	9:31	8.18	Sheen	--	7.12	--	15.30
	04/25/11	8:50	8.50	8.49	0.01	6.81	--	15.30
	09/21/11	9:18	9.20	LNAPL on probe	--	6.10	--	15.30
	11/21/11	9:34	9.03	--	--	6.27	--	15.30
	02/20/12	10:23	8.76	LNAPL on probe	--	6.54	--	15.30
	04/17/12	10:10	8.65	--	--	6.65	--	15.30
	10/10/12	9:20	9.70	LNAPL on probe	--	5.60	--	15.30
	12/24/12			UNABLE TO ACCESS				15.30
	01/08/13			UNABLE TO ACCESS				15.30
	04/30/13	10:00	8.74	Tar on probe	--	6.56		15.30
	09/19/13	10:10	9.43	Tar on probe	--	5.87	--	15.30
	11/22/13	8:55	10.23	--	--	5.07	--	15.30
	06/12/14			Well Decommissioned				15.30

Notes:

[1]Well casing elevations listed in feet above mean sea level. Approximate monitoring well locations are shown in Figure 2.

"--" = not measured or not obtainable

[2]Below top of casing.

[3]Light non-aqueous phase liquid

[4]Elevation referenced to city of Seattle datum.

[5]Top of well screen elevation data from historic records.

[6]TOC elevations for wells MW-200 to 207, MW-27R, and MW-61A-R were surveyed using an arbitrary datum point, 9.65 feet lower than the datum from the upper well survey.

[7]Depth to water was measured with pump in well.

[8]Survey by OTAK 5/27/08.

[9]Groundwater elevation recorded prior to pump testing at the site. Sheen observed on extracted groundwater during hydraulic conductivity testing on well MW-205.

[10]LNAPL indicated in field notes, measurement not taken

[11]TOC elevations for wells PZ-61A-R, PZ-203, and PZ-204 unknown.

NR = Not reported.

UK = TOC elevations unknown.

* MW-30 could not be gauged due to the presence of viscous substance, suspected to be LNAPL, interfering with the oil/water interface probe.

Bolded data are for the current reporting period.

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
			B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
Upper Yard RALs		*No visible sheen*	*40*	*14,300*	*1,400*	*4,400*	--	*1*	*10*	*15*	*50*
Upper Yard											
MW-37	06/01/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
	10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
	01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
	04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2
	09/15/95	ND	<0.50	<0.50	<0.50	<1.0	--	<1.0	<1.0	<0.75	--
	12/14/95	ND	<0.50	<0.50	<0.50	<1.0	--	<0.05	<0.27	<0.75	--
MW-38	06/01/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
	10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
	01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
	04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2
MW-39	01/17/91	--	<0.5	0.5	0.6	2.2	--	<1	<1	--	<5
	04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	--
MW-40	06/01/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
	10/16/90	--	<0.5	1.0	0.6	<0.5	<1	--	--	--	<5
	01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
	04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	--
MW-61A	03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.956	2.14	<0.750	--
	06/18/98	ND	<2.50	<2.50	<2.50	<5.00	--	1.01	3.49	<0.750	
	09/03/98	ND	<0.500	<0.500	<0.500	<0.500	--	0.396	1.85	<0.750	<1.00
	12/15/98	Sheen	<2.50	<2.50	2.82	12.8	--	10.2	146/73.0	<30.8/<15.8	--
Duplicate	12/15/98	Sheen	<2.50	<2.50	<2.50	5.81	--	2.93	32.3/14.6	<3.75/<0.750	--
	03/23/99	Sheen	<0.500	<0.500	2.56	13.8	--	4.34	39.7/32.7	<8.25/<3.75	--
Duplicate	03/23/99	Sheen	<2.50	<2.50	<2.50	<5.00	--	1.56	52.8/42.1	<8.25/<8.25	--
	07/01/99	ND	<0.500	<0.500	<0.900	<3.70	--	1.38[4]	4.43/2.08	<0.750/<0.750	<1.00
Duplicate	07/01/99	ND	<1.00	<1.00	<1.40	<5.60	--	1.30[4]	4.45/3.08	<0.750/<0.750	--
	09/29/99	Sheen	<0.500	<5.00	<5.00	<1.00	--	2.16[5]	7.57/4.04	<0.750/<0.750	--
Duplicate	09/29/99	Sheen	<0.500	<0.500	<5.00	<10.0	--	2.80[5]	19.7/21.1	0.758/<1.57	--
	12/16/99	Sheen	<0.500	<5.00	<3.50	<17.00	--	7.61	33.4/30.1	<15.8/<8.25	--
Duplicate	01/04/00[6]	Sheen	<0.500	<5.00	<5.00	<4.15	--	1.40	12.1/8.29	<1.34/<1.34	--
	03/21/00	ND	<0.500	<0.500	<0.550	<1.85	--	0.831	13.1[7]	<0.750[7]	--
Duplicate	03/21/00	ND	<0.500	<0.500	<0.720	<3.40	--	1.05	6.36[7]	<0.750[7]	--
	06/22/00[8]	ND	0.779	<0.500	<0.500	2.32	--	1.00	4.23/3.38	<0.750/<0.750	<1.00
Duplicate	06/22/00	ND	0.880	<0.500	0.591	2.46	--	0.836	5.99/4.13	<0.750/<0.750	--
	09/14/00	ND	<0.500	<0.500	<0.704	<3.11	--	1.36	2.49/1.50	<0.750/<0.750	--
Duplicate	09/14/00	ND	<0.500	<0.500	0.986	<3.21	--	1.00	5.00/3.13	<0.750/<0.750	--
	12/21/00	ND	<0.500	<1.24	<0.500	<3.87	--	1.18	4.62/2.48	<0.750/<0.750	--
Duplicate	12/21/00[9]	ND	<0.500	<0.500	<0.500	<1.00	--	0.721	5.64/3.81	<0.750/<0.750	--
	03/14/01	ND	<0.565	<0.500	<1.38	<4.31	--	0.962	2.55/1.28	<0.750/<0.750	--
Duplicate	03/14/01	ND	<0.500	<0.500	<0.500	<1.12	--	0.498	1.82/0.668	<0.750/<0.750	--
	06/21/01	ND	<0.500	0.855	<0.500	1.14	--	0.773	2.45/1.55	<0.750/<0.750	<1.00
Duplicate	06/21/01	ND	<0.500	<0.500	<0.500	2.61	--	0.676	1.80/1.04	<0.750/<0.750	--
	09/25/01	Sheen	<0.500	<0.500	<0.500	2.62	--	0.839	14.3/11.3	<8.25/<0.750	--
Duplicate	09/25/01	Sheen	<0.500	0.923	0.592	4.22	--	0.918	5.12/4.47	<0.750/<0.750	--
	12/19/01	Sheen	0.825	<2.00	<1.00	<1.50	--	2.54	19.4/14.8[10]	<3.00/<3.00[10]	--
	03/26/02	Sheen	<0.500	<0.500	<0.500	1.24	--	0.414	1.38/0.615	<0.750/<0.750	--
Duplicate	03/26/02	Sheen	<0.500	<0.500	<0.500	1.85	--	0.592	1.99/0.847	<0.750/<0.750	--
Duplicate	06/19/03	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.360	1.43	<0.750	--
	09/18/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.728	<0.750	--
	12/03/03	Sheen	<0.500	<0.500	<0.500	1.22	--	0.604	2.46	<0.750	--
Duplicate	12/03/03	Sheen	<0.500	<0.500	<0.500	1.30	--	0.701	2.35	<0.750	--
MW-61A-R	03/02/06	Sheen/LNAPL	--	--	--	<1.00	--	--	--	--	--
	06/06/06	Sheen	<2.50	<2.50	7.64	7.48	--	3.92	20.6	<3.75	--
	09/15/06	Sheen	396	79.7	26.4	243	--	17.2	200	<142	--
	03/07/07	ND	<0.5	<0.5	0.5	<1.5	--	0.18	0.29	<0.095	--
	06/08/07	ND	<0.500	<2.0[16]	1.500	1.7	--	0.400	0.600	<0.095	<0.037
	09/26/07	ND	<0.5	<0.5	1.4	<1.5	--	0.430	0.770	0.120	--
	11/28/07	ND	<0.5	<0.5	0.9	<1.5	--	0.410	0.340	<0.100	--
Duplicate	11/28/07	ND	<0.5	<0.5	0.9	<1.5	--	0.400	0.670	0.370	--
	02/13/08	ND	<0.500	<0.500	0.980	1.14	--	0.455	0.308	<0.485	--
	05/14/08	ND	<0.500	<0.500	1.24	1.43	--	0.363	0.406	<0.472	--
	09/04/08	Sheen	<0.500	1.16	3.58	1.13	--	0.933	0.380	<0.490	--
	12/03/08	LNAPL	--	--	--	--	--	--	--	--	--
	02/18/09	Sheen	<0.500	<0.500	<0.500	1.32	--	0.490	0.830	<0.481	--
	09/10/09	LNAPL	--	--	--	--	--	--	--	--	--
	04/14/10	LNAPL	--	--	--	--	--	--	--	--	--
	09/23/10	ND	<0.50	<0.50	0.68	<2.0	--	0.76	1.5	<0.26	--
	04/25/11	LNAPL	--	--	--	--	--	--	--	--	--
	09/21/11	LNAPL	--	--	--	--	--	--	--	--	--
	04/18/12	LNAPL	--	--	--	--	--	--	--	--	--
	10/10/12	LNAPL	--	--	--	--	--	--	--	--	--
	04/30/13	LNAPL	--	--	--	--	--	--	--	--	--
	09/19/13	LNAPL	--	--	--	--	--	--	--	--	--
	06/24/14	LNAPL	--	--	--	--	--	--	--	--	--
	12/16/15	LNAPL	--	--	--	--	--	--	--	--	--
	06/17/15	LNAPL	--	--	--	--	--	--	--	--	--
	12/09/15	LNAPL	--	--	--	--	--	--	--	--	--
	06/15/16	ND	<0.5	<0.5	<0.5	<1.5	--	0.220	0.120	<0.067	--
	01/13/17	ND	<0.5	<0.5	0.5	2	--	1.000	0.490	<0.074	--
	06/16/17	LNAPL	--	--	--	--	--	--	--	--	--
	11/08/17	LNAPL	--	--	--	--	--	--	--	--	--
	06/20/18	LNAPL	--	--	--	--	--	--	--	--	--
	09/27/18	LNAPL	--	--	--	--	--	--	--	--	--
	12/14/18	ND	<0.5	0.8	<0.5	<1.5	--	0.680	0.190	<0.100	--
	06/25/19	ND	<0.2	<0.2	<0.4	<1	--	0.250 J	<0.046	<0.100	--
	12/17/19	ND	<0.2	<0.2	<0.4	<1	--	0.38	0.16	<0.100	--
	06/16/20	LNAPL	--	--	--	--	--	--	--	--	--
	11/19/20	ND	<0.2	<0.2	<0.4	<1	--	0.220 J	<0.046 * *1	<0.100	--
	06/09/21	**LNAPL**	--	--	--	--	--	--	--	--	--
MW-62A	03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.288	<.0250	<.0750	--
	06/18/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	09/03/98	ND	<1.00	<0.500	0.901	2.79	--	0.134	<0.250	<0.750	<1.00
	12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	03/23/99	ND	10.8	<5.00	<5.00	<10.0	--	<0.500	0.371/<0.250	<0.750/<0.750	--
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.311/<0.250	<0.750/<0.750	1.09
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.709/<0.250	<0.750/<0.750	--
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.376/<0.250	<0.750/<0.750	--
	12/21/00[9]	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	03/14/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	09/25/01	ND	<0.500	<0.500	<0.500	1.57	--	<0.0500	0.373/<0.250	<0.750/<0.250	--
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	<0.250[10]	<0.750[10]	--
	03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.320/<0.250	<0.750/<0.750	<1.00
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.863	<0.750	--
	12/03/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
			B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-63A	03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/18/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	09/03/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	03/23/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.389/<0.250	<0.750/<0.750	1.82
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.305/<0.539	<0.750/<1.62	--
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.380/<0.250	<0.750/<0.750	--
	03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.366/<0.462	<0.750/<1.39	<1.00
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.273/<0.250	<0.750/<0.750	--
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.575/<0.250	<0.750/<0.750	--
	03/14/01	ND	<0.500	0.922	<0.500	1.92	--	<0.0500	<0.250	<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.468/<0.250[10]	<0.750/<0.750[10]	--
	03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.379/<0.250	<0.750/<0.750	--
	06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.299/<0.250	<0.750/<0.750	<1.00
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.514	<0.750	--
	12/03/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-64	06/18/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	09/03/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.325/<0.250	<0.750/<0.750	--
	03/23/99	ND	<0.500	<0.500	<0.500	2.42	--	<0.0500	0.354/<0.250	<0.750/<0.750	--
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.319/<0.250	<0.750/<0.750	1.09
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.448/<0.564	<0.750/<0.169	--
	01/04/00[6]	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250/<0.250	<0.750/<0.750	--
	03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.255[7]	<0.750	--
	06/22/00[8]	ND	<0.500	1.39	0.654	5.39	--	0.0908	0.315/<0.487	<0.750/<1.46	<1.00
	07/25/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.298/<0.250	<0.750/<0.750	--
	03/14/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.263/<0.250[11]	<0.750/<0.750[11]	--
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.372/<0.250[10]	<0.750/<0.750[10]	--
	03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.499/<0.250	<0.750/<0.750	<1.00
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	0.0563	0.38	<0.750	--
	12/03/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.379	<0.750	--
Elliott Avenue RALs		*No visible sheen*	*40*	*14,300*	*1,400*	*4,400*	--	*1*	*10*	*15*	*50*
Elliott Avenue											
MW-30[12]	01/31/89	--	4.0	0.6	<0.5	<0.5	6	<5	--	--	--
	04/27/89	--	5.0	<0.5	0.6	<0.5	0.37	<5	--	--	--
	07/25/89	--	8.0	4.9	17.0	11.1	13	<5	--	--	--
	10/26/89	LNAPL	--	--	--	--	--	--	--	--	--
	01/16/90	LNAPL	--	--	--	--	--	--	--	--	--
	04/16/90	LNAPL	--	--	--	--	--	--	--	--	--
	07/25/90	LNAPL	--	--	--	--	--	--	--	--	--
	09/20/90		--	--	--	--	1	--	--	--	--
	10/16/90	--	<5.0	<5.0	<5.0	<5.0	10	--	--	--	28
	01/17/91	--	<0.5	<0.5	0.6	3.5	24	2	13	--	<5
	04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2
	09/17/91	LNAPL	--	--	--	--	--	--	--	--	--
	12/10/91	LNAPL	--	--	--	--	--	--	--	--	--
	01/29/92	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--
	03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.341	<0.750	--
Duplicate	03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.0522	<0.250	<0.750	--
	06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
Duplicate	06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	09/04/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.575	<0.750	--
Duplicate	09/04/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.416	<0.750	--
	12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.900/0.310	<0.750/<0.750	--
	03/24/99	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.47/0.580	1.38/<0.750	--
	07/01/99	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.526/<0.250	<0.750/<0.750	<1.00
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.12/<0.454	1.19/<1.36	--
	12/15/99	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.0657	2.72/0.679	<1.43/<1.43	--
	03/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.68/0.753	1.35/<0.750	--
	06/21/00	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.0545	0.345/<0.250	<0.750/<0.750	<1.00
	09/14/00	--	--	--	--	--	--	--	--	--	--
	12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	0.0766	1.17/0.353	<0.750/<0.750	--
	03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	0.248	4.85/3.27	6.28/3.25	--
	06/22/01	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.448/<0.250	<0.750/<0.750	--
	09/25/01	Sheen	<0.500	<0.500	<0.500	1.12	--	<0.0500	2.73/1.60	2.20/1.22	--
	12/18/01	Sheen	<0.500	<2.00	<1.00	<1.50	--	<0.100	1.09/<0.250[10]	<0.750/<0.750[10]	--
Duplicate	12/18/01	Sheen	<0.500	<2.00	<1.00	<1.50	--	0.107	1.05/<0.250[10]	<0.750/<0.750[10]	--
	03/27/02	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.0793	1.62/0.536	0.936/<0.750	--
	06/20/02	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.527/<0.250	<0.750/<0.750	--
	09/19/02	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/13/02	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.419	<0.750	--
	06/19/03	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	09/18/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/03/03	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	03/09/04	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/03/04	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.544	<0.750	--
Duplicate	06/03/04	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.913	0.765	--
	09/03/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.451	<0.750	--
Duplicate	09/03/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.33	0.765	--
	12/06/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.381	<0.750	--
Duplicate	12/06/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.268	<0.750	--
	03/04/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.747	0.898	--
Duplicate	03/04/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.835	0.976	--
	06/03/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.278	<0.750	--
Duplicate	06/03/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	09/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.416	<0.750	--
Duplicate	09/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.366	<0.750	--
	12/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.359	<0.708	--
Duplicate	12/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.438	<0.714	--
	03/02/06	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.236	<0.708	--
Duplicate	03/02/06	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.236	<0.708	--
	06/06/06	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
Duplicate	06/06/06	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	09/15/06	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.708	--
Duplicate	09/15/06	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.708	--
	03/07/07	Sheen	<0.5	<0.5	<0.5	<1.5	--	<0.048	1.6	0.53	--
	06/08/07	ND	<0.500	<0.500	<0.500	<1.50	--	<0.050	0.800	<0.095	<0.037
	09/26/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.300	<0.095	--
	11/28/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.340	0.120	--
	02/13/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.278	<0.556	--
	05/14/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	--
	09/04/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.243	<0.485	--
	12/05/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.245	<0.490	--
	02/18/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.248	<0.495	--

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
			B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-30 (continued)	05/12/09	LNAPL	--	--	--	--	--	--	--	--	--
	09/10/09	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.250	<0.500	--
	04/14/10	Sheen	<0.50	<0.50	<0.50	<2.0	--	<0.050	<0.13	<0.27	--
	09/23/10	ND	<0.50	<0.50	<0.50	<2.0	--	<0.050	<0.13	<0.25	--
	04/27/11	Sheen	<0.50	<0.50	<0.50	<1.0	--	0.052	--	--	--
	09/22/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	<0.12	<0.24	--
	09/22/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	0.17 [17]	<0.24	--
	04/18/12	Sheen	--	--	--	--	--	--	--	--	--
	10/12/12	ND	<0.50	<0.50	<0.50	<0.50	--	<0.025	0.19	<0.24	--
	04/26/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.069	--
	09/19/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
	06/24/14	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050 UJ	<0.029	<0.067	--
	12/16/14	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
	06/18/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.5	0.640	--
	12/07/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.120	0.310	--
	06/13/16	LNAPL	--	--	--	--	--	--	--	--	--
	01/12/17	LNAPL	--	--	--	--	--	--	--	--	--
	03/27/17	LNAPL	--	--	--	--	--	--	--	--	--
	06/16/17	LNAPL	--	--	--	--	--	--	--	--	--
	11/08/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.25	<0.100	--
	06/20/18	LNAPL	--	--	--	--	--	--	--	--	--
	12/14/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.019	<0.045	<0.100	
	06/24/19	LNAPL	--	--	--	--	--	--	--	--	--
	12/17/19	ND	<0.2	<0.2	<0.4	<1	--	<0.019	0.23	0.220 J	
	06/16/20	LNAPL	--	--	--	--	--	--	--	--	
	11/19/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.045 * *1	<0.100	
	06/09/21	**LNAPL**	--	--	--	--	--	--	--	--	--
MW-31	08/10/89	--	<0.5	1.4	2.1	5.9	4.1	--	--	--	<5
	10/26/89	--	7.1	<0.5	1.0	3.3	5.5	--	--	--	<5
	01/16/90	--	4.2	<0.5	<0.5	<0.5	2.2	--	--	--	<5
	04/16/90	--	5.2	1.5	1.9	4.5	<1	--	--	--	<5
	07/25/90	--	2.0	<0.5	2.2	1.8	6	--	--	--	<5
	10/16/90	--	0.7	<0.5	<0.5	<0.5	<1	--	--	--	<5
	01/17/90	--	1.6	0.6	1.6	4.4	--	2	<1	--	<5
	04/16/91	--	1.8	0.6	1.9	4.5	--	<1	<1	--	<2
	09/17/91	--	--	--	--	--	--	--	--	--	--
	12/10/91	--	--	--	--	--	--	--	--	--	--
	09/14/95	ND	<0.50	<0.50	<0.50	<0.50	--	<0.05	0.54	0.94	--
	12/15/95	ND	<0.50	<0.50	<0.50	<1.0	--	<0.05	0.36	0.78	--
	03/14/96	ND	<0.50	<0.50	<0.50	<1.0	--	<0.05	1.2	0.94	--
	09/11/96	ND	<0.500	<0.500	<0.500	<1.00	--	0.0519	0.864	2.16	--
	03/18/97	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	0.546	<0.750	--
	06/26/97	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.250	<0.750	--
	06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.320/<0.250	<0.750/<0.750	--
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.269/<0.250	<0.750/<0.750	<1.00
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.723/<0.250	<0.750/<0.750	--
	06/22/00[8]	ND	<0.500	5.05	1.39	15.0	--	0.167	<0.250	<0.750	<1.00
	12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/22/01	ND	<0.500	<0.500	<0.500	<1.00	--	0.0576	<0.250	<0.750	<1.00
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	1.08/<0.250[10]	<0.750/<0.750[10]	<1.00
	06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.568/<0.250	<0.750/<0.750	<1.00
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.436	1.27	--
	12/03/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-32	08/10/89	--	2.7	2.9	0.8	2.3	1.7	--	--	--	<5
	10/26/89	--	<0.5	1.7	<0.5	0.7	2.1	--	--	--	<5
	01/16/90	--	<0.5	<0.5	<0.5	<0.5	0.76	--	--	--	<5
	04/16/90	--	<0.5	1.0	<0.5	<0.5	<1	--	--	--	<5
	07/25/90	--	<0.5	<0.5	1.1	<0.5	1	--	--	--	<5
	10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
	01/17/91	--	<0.5	<0.5	0.5	1.5	--	<1	<1	--	<5
	04/16/91	--	<0.5	0.6	0.6	1.6	--	<1	<1	--	<2
	09/17/91	--	--	--	--	--	--	--	--	--	--
	12/01/91	--	--	--	--	--	--	--	--	--	--
MW-58	09/15/95	ND	<0.50	<0.50	<0.50	<1.0	--	<1.0	<1.0	<0.75	--
	12/14/95	ND	<0.50	<0.50	<0.50	<1.0	--	<0.05	<0.25	<0.75	--
	03/14/96	ND	<0.50	<0.50	<0.50	<1.0	--	<0.05	<0.25	<0.75	--
	09/11/96	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.250	0.979	--
	12/11/96	ND	--	--	--	--	--	--	--	--	--
	03/18/97	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.372	<0.750	--
	06/25/97	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.250	<0.750	--
	06/30/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	2.43	--	<0.0500	<0.250	<0.750	<1.00
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	<0.250[10]	<0.750[10]	--
	06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/03/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-65	03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	09/04/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.482/<0.250	<0.750/<0.750	--
	03/24/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.975/<0.250	0.991/<0.750	--
	06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.750/<0.250	<0.750/<0.750	<1.00
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.683/<0.250	<0.750/<0.750	--
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.418/<0.250	<0.750/<0.750	--
	03/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.816/<0.250	<0.750/<0.750	--
	06/23/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.689/<0.250	<0.750/<0.750	<1.00
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.603/<0.250	<0.750/<0.750	--
	12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.408/<0.250	<0.750/<0.750	--
	03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.620/<0.250	<0.750/<0.750	--
	06/22/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.262/<0.250	<0.750/<0.750	<1.00
	09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.584/0.225	<0.750/<0.750	<1.00
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.675/<0.250[10]	0.779/<0.750[10]	<1.00
	03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.749/<0.250	<0.750/<0.750	--
	06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.675/<0.250	<0.750/<0.750	<1.00
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/03/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	03/07/07	ND	<0.500	<0.500	<0.500	<1.00	--	<0.048	0.730	0.170	--
	06/08/07	ND	<0.500	<0.500	<0.500	<1.50	--	<0.050	0.530	0.250	<0.037
	11/26/07	ND	<0.5	<0.5	0.7	<1.5	--	<0.050	0.470	0.190	--
MW-66	03/13/98	ND	<1.25	<1.25	<1.25	<5.00	--	1.20[5]	3.52	<0.750	--
	06/29/98	ND	<0.500	<0.500	<0.500	1.06	--	0.424	<0.250	<0.750	<1.00
	09/04/98	ND	<0.500	<0.500	<0.500	<2.00	--	0.257	1.27	<0.750	--
	12/15/98	ND	<0.500	<0.500	0.508	2.62	--	0.0387	0.906/<0.250	<0.750/<0.750	--
	03/24/99	ND	<0.500	<0.500	<0.900	<3.00	--	1.05	8.44/5.11	<0.750/<0.750	--
	07/01/99	Sheen	<0.500	<0.500	<0.500	<1.70	--	0.310[4]	1.37/0.596	<0.750/<0.750	<1.00
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.216[4]	2.32/1.10	<0.750/<0.750	--
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.332	0.659/<0.250	<0.750/<0.750	--
	03/22/00	ND	<0.500	<0.500	<0.500	<3.00	--	0.711	4.31/2.31	<0.750/<0.750	--

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
			B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-66 (continued)	03/15/01	ND	<0.570	<0.922	<0.500	<3.91	--	1.16	7.03/5.43	1.01/<0.750	--
	09/14/00	ND	<0.500	<0.500	<0.500	<2.16	--	0.416	1.601/1.43	<0.750/<0.750	--
	12/22/00	ND	<0.500	<0.500	<0.500	<2.35	--	0.475	1.87/0.819	<0.750/<0.750	--
	03/15/01	ND	<0.570	<0.922	<0.500	<3.91	--	1.16	7.03/5.43	1.01/<0.750	--
	06/22/01	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.130	0.409/<0.250	<0.750/<0.750	--
	09/25/01	Sheen	<0.500	<0.500	<0.500	1.06	--	0.142	4.06/3.14	0.811/<0.750	--
	12/18/01	Sheen	<0.500	<2.00	<1.00	<1.50	--	0.162	0.696/<0.250[10]	<0.750/<0.750[10]	--
	03/27/02	Sheen	<0.500	<0.500	<0.500	1.32	--	0.454	4.41/2.58	1.41/<0.750	--
	06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	0.052	0.650/<0.250	<0.750/<0.750	--
	09/19/02	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.128	<0.250[11]	<0.750[11]	--
	12/13/02	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.0845	0.688	<0.750	--
	03/21/03	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.114	2.72	<0.750	--
	06/19/03	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.189[5]	0.707	<0.750	--
	09/18/03	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.171	3.73	<0.750	--
	12/03/03	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.0509	1.45	<0.750	--
	03/09/04	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.131	0.446	<0.750	--
	06/03/04	ND	<0.500	<0.500	<0.500	<1.00	--	0.121	0.504	<0.750	--
	09/03/04	ND	<0.500	<0.500	<0.500	1.25	--	0.330	1.03	<0.750	--
	12/06/04	ND	<0.500	<0.500	<0.500	<1.00	--	0.116	0.380	<0.750	--
	03/04/05	ND	<0.500	<0.500	<0.500	1.4	--	0.275	0.577	<0.750	--
	06/03/05	ND	<0.500	<0.500	<0.500	<1.00	--	0.149	0.860	<0.750	--
	09/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	0.119	0.678	<0.750	--
	12/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	0.115	0.885	<0.721	--
	03/02/06	ND	<0.500	<0.500	<0.500	<1.00	--	0.0651	0.381	<0.714	--
	06/06/06	ND	<0.500	<0.500	<0.500	<1.00	--	0.128	<0.250	<0.750	--
	09/15/06	ND	<0.500	<0.500	<0.500	<1.00	--	0.0778	0.370	<0.708	--
	03/07/07	--	--	--	--	--	--	--	--	--	--
Lower Yard RALs		*No visible sheen*	*40*	*14,300*	*1,400*	*4,400*	--	*1*	*10*	*15*	*50*
Lower Yard											
MW-81	10/06/98	Sheen	<0.700	<0.500	<0.500	<1.50	--	0.136[4]	27.6/14.8	26.5/10.0	--
	12/14/98	Sheen	<0.500	<0.500	<0.500	<1.00	--	0.273	3.62/0.563	1.18/<0.750	--
	03/23/99	Sheen	<0.500	0.646	<0.500	2.28	--	0.0632	3.90/2.17	3.14/1.50	--
	06/29/99	Sheen	<0.500	<0.500	<0.500	<1.60	--	0.418	5.22/3.12	4.62/2.55	<1.00
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.566[4]	1.69/0.390	<0.750/<0.750	--
	12/15/99	Sheen	<0.500	<0.500	<0.500	1.15	--	0.0762	2.46/0.366	0.764/<0.750	--
	03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	0.0817	2.20/0.800	1.28/<0.750	--
	06/22/00[8]	ND	0.536	3.35	2.37	16.2	--	0.234	2.36/0.495	1.29/<0.750	--
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.20/0.347	<0.750/<0.750	--
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	0.585	1.5/0.374	<0.750/<0.750	--
	03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.16/0.324	<0.750/<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.60/0.751	1.32/<0.750	--
	09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.59/1.11	0.832/<0.750	--
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	1.62/0.323[10]	<0.750/<0.750[10]	--
	03/27/02	ND	<0.500	<0.500	<0.500	<1.00	--	0.0598	1.31/0.324	<0.750/<0.750	--
	06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.09/<0.250	<0.750/<0.750	--
MW-82	10/06/98	Sheen	<0.500	<0.500	<0.500	<3.50	--	0.311[4]	7.90/5.43	3.93/2.31	--
	12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.0793	0.787/<0.250	<0.750/<0.750	--
	03/23/99	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.757/0.268	<0.750/<0.750	--
	06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.2750	3.92/2.51	2.19/1.29	1.25
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.0566	1.48/0.784	<0.750/<0.750	--
	12/15/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.561/<0.250	<0.750/<0.750	--
	03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.797/0.349	<0.750/<0.750	--
	06/22/00[8]	ND	<0.500	1.72	1.48	13.6	--	0.2580	1.01/0.494	<0.750/<0.750	--
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.907/0.522	<0.750/<0.750	--
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.911/0.386	<0.750/<0.750	--
	03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.839/0.451	<0.750/<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.03/0.675	0.830/<0.750	--
	09/25/01	ND	<0.500	<0.500	<0.500	1.14	--	<0.0500	0.742/0.288	<0.750/<0.750	--
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.278/<0.250[10]	<0.750/<0.750[10]	--
	03/27/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.517/<0.250	<0.750/<0.750	--
	06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.513/<0.250	<0.750/<0.750	--
MW-83	10/06/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.0923[4]	2.19/1.31	2.36/1.11	--
	12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.634/<0.250	<0.750/<0.750	--
	03/23/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.413/<0.250	<0.750/<0.750	--
	06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.729/0.417	0.957/<0.750	<1.00
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.390/<0.250[13]	<0.750/<0.750[13]	--
	12/15/99	ND	<0.500	<0.500	<0.500	1.07	--	<0.0500	0.271/<0.250	<0.750/<0.750	--
	03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/22/00[8]	ND	<0.500	<0.500	<0.500	3.76	--	0.205	0.302/<0.250	<0.750/<0.750	--
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.316/<0.250	<0.750/<0.750	--
	03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.268/<0.250	<0.750/<0.750	--
	09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	<0.250[10]	<0.750[10]	--
	03/27/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.299/<0.250	<0.750/<0.750	--
MW-84	10/06/98	ND	<2.00	<1.00	<1.50	<8.00	--	1.09[4]	3.52/1.70	1.03/<0.750	--
	12/14/98	ND	<0.500	<0.500	<0.500	2.33	--	0.241	1.01/0.351	<0.750/<0.750	--
	03/23/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	Note 14	Note 14	--
	04/01/99	ND	--	--	--	--	--	--	0.0259	<0.750	--
	06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.0833	2.17/1.12	1.61/<0.750	<1.00
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.0517	0.941/0.338	<0.750/<0.750	--
	12/15/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.692/<0.250	<0.750/<0.750	--
	03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.859/<0.750	<0.750/<0.750	--
	06/22/00	ND	<0.500	<0.500	<0.500	1.37	--	0.0551	1.39/0.649	0.808/<0.750	--
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.485/<0.250	<0.750/<0.750	--
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.09/0.419	<0.750/<0.750	--
	03/15/01	ND	0.584	<0.500	<0.500	<1.00	--	<0.0500	0.559/<0.250	<0.750/<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.407/<0.250	<0.750/<0.750	--
	09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.324/<0.250	<0.750/<0.750	--
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.965/<0.250[10]	0.926/<0.750[10]	--
	03/27/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.883/<0.250	<0.750/<0.750	--
	06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.792/<0.250	<0.750/<0.750	--
MW-85	10/06/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.434/<0.250	<0.750/<0.750	--
	12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.451/<0.250	<0.750/<0.750	--
	03/23/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.404/<0.250	<0.750/<0.750	--
	06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.412/<0.250	<0.750/<0.750	<1.00
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.365/<0.250	<0.750/<0.750	--
	12/16/99	ND	<0.500	0.628	<0.500	<1.00	--	<0.0500	0.350/<0.250	<0.750/<0.750	--
	03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.350/<0.250	<0.750/<0.750	--
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.376/<0.250	<0.750/<0.750	--
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.360/<0.250	<0.750/<0.750	--
	03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	1.57	--	<0.0500	<0.250	<0.750	--
	09/25/01	ND	<0.500	<0.500	<0.500	1.57	--	<0.0500	<0.250	<0.750	--
	12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.600/<0.250[10]	<0.750/<0.750[10]	--
	03/27/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.271/<0.250	<0.750/<0.750	--
	06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.702/<0.250	<0.750/<0.750	--
MW-86	10/06/98	Sheen	<0.800	<0.500	<0.500	<1.00	--	<0.0500	2.28/2.99	2.57/2.92	--
	12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	1.65/<0.250	<0.750/<0.750	--
	03/23/99	Sheen	<0.500	<0.500	<0.500	2.54	--	<0.0500	1.39/<0.250	0.883/<0.750	--

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
			B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-86 (continued)	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.926/<0.250	<0.750/<0.750	<1.00
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.481/<0.250	<0.750/<0.750	--
	12/16/99	ND	<0.500	0.574	<0.500	<1.00	--	<0.0500	1.71/<0.250	<0.750/<0.750	--
	03/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.901[7]	<0.750[7]	--
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.535/<0.250	<0.750/<0.750	--
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.617/<0.250	<0.750/<0.750	--
	12/21/00[9]	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.374/<0.250	<0.750/<0.750	--
	03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.436/0.250	<0.750/<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.606/0.310	<0.750/<0.750	--
	09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	1.21/<0.250[10]	<0.750/<0.750[10]	--
	03/27/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.464/<0.250	<0.750/<0.750	--
	06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.629/<0.250	<0.750/<0.750	--
Offsite Area RALs		*No visible sheen*	*40*	*14,300*	*1,400*	*4,400*	--	*1*	*10*	*15*	*50*
Offsite Area											
MW-8	01/31/89	--	0.6	<0.5	<0.5	<0.5	0.21	--	--	--	<25
	04/27/89	--	<0.5	<0.5	<0.5	<0.5	1.1	--	--	--	<5
	07/25/89	--	4.3	2.1	<0.5	<0.5	0.17	--	--	--	18
	10/26/89	--	<0.5	<0.5	<0.5	<0.5	0.94	--	--	--	<5
	01/16/90	--	<0.5	<0.5	<0.5	<0.5	0.35	--	--	--	<5
	04/16/90	--	2.8	<0.5	<0.5	<0.5	<1	--	--	--	<50
	07/25/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<50
	10/16/90	--	<0.5	<0.5	<0.5	<0.5	2	--	--	--	<100
	01/17/91	--	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	--	<5
	04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<20
	09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	6
	12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<3.0
	06/25/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.523/<0.250	<0.750/<0.750	--
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.501/<0.403	<1.21/<1.21	--
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	0.0558	0.273/<0.249	<0.750/<0.737	--
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.441/<0.245	<0.750/<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.464/<0.250[10]	<0.750/<0.750[10]	--
	06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.271/<0.250	<0.750/<0.750	--
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.439	0.762	--
	12/02/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-10	01/31/89	--	<0.5	<0.5	<0.5	<0.5	0.36	--	--	--	<5
	04/27/89	--	<0.5	<0.5	<0.5	<0.5	2.2	--	--	--	<5
	07/25/89	--	<0.5	<0.5	<0.5	<0.5	0.45	--	--	--	<5
	10/26/89	--	<0.5	<0.5	<0.5	<0.5	3.4	--	--	--	<5
	01/16/90	--	<0.5	<0.5	<0.5	<0.5	0.35	--	--	--	<5
	04/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
	07/25/90	--	<0.5	<0.5	<0.5	<0.5	6	--	--	--	<5
	10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
	01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
	04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
	09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2
	12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<3
	06/25/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.0593	<0.250	<0.750	1.24
	12/14/98	ND	<0.500	<0.500	<0.500	1.28	--	0.0715	0.953/<0.250	<0.750/<0.750	--
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.652/<0.250	<0.750/<0.750	--
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	0.076	0.706/<0.475	<1.43/<1.43	--
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	0.0846	<0.503[13]	<1.51[13]	--
	12/21/00	ND	<0.500	<0.500	<0.500	1.10	--	0.0657	0.555/<0.250	<0.750/<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.301/<0.250	<0.750/<0.750	--
	12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.551/<0.250[10]	<0.750/<0.750[10]	--
	06/19/02	ND	<0.500	<0.500	<0.500	1.43	--	0.0545	0.656/<0.250	<0.750/<0.750	--
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/02/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-20	01/31/89	--	<0.5	<0.5	<0.5	<0.5	1.1	--	--	--	<5
	04/27/89	--	<0.5	<0.5	<0.5	<0.5	1.6	--	--	--	<5
	07/25/89	--	1.0	<0.5	<0.5	<0.5	0.31	--	--	--	<5
	10/26/89	--	0.7	<0.5	<0.5	<0.5	3.2	--	--	--	<5
	01/16/90	--	<0.5	<0.5	<0.5	<0.5	1.4	--	--	--	<5
	04/16/90	--	0.6	<0.5	<0.5	<0.5	<1	--	--	--	<5
	07/25/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
	10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
	01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
	04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2
	09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2
	12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	3.4
	06/25/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.287/<0.250	<0.750/<0.750	--
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.291/<0.250	<0.750/<0.750	--
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.452/<0.250	<0.750/<0.750	--
	06/22/00	ND	<0.500	<0.500	<0.500	1.67	--	<0.0500	<0.250	<0.750	--
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.569/<0.250	<0.750/<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.277/<0.250	<0.750/<0.750	--
	12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	1.05/<0.250[10]	<0.750/<0.750[10]	--
	06/20/02	ND	6.60	<0.500	<0.500	3.30	--	<0.0500	0.627/<0.250	<0.750/<0.750	--
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/02/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-25	01/31/89	--	<0.5	4.7	<0.5	2.3	3.7	--	--	--	<5
	04/27/89	--	7.2	1.2	1.6	<0.5	0.93	--	--	--	<5
	07/25/89	--	1.4	0.8	<0.5	1.2	3.4	--	--	--	<5
	10/26/89	--	<0.5	<0.5	<0.5	<0.5	7.8	--	--	--	<5
	01/16/90	--	1.3	<0.5	<0.5	<0.5	4.9	--	--	--	<5
	04/16/90	--	6.6	1.4	0.8	2.7	<1	--	--	--	<5
	07/25/90	--	2.5	0.6	0.6	0.8	<1	--	--	--	<5
	10/16/90	--	<0.5	<0.5	<0.5	0.8	<1	--	--	--	<5
	01/17/91	--	1.0	0.7	<0.5	1.4	<1	<1	<1	--	<5
	04/16/91	--	0.9	<0.5	<0.5	<0.5	--	<1	<1	--	<20
	09/19/91	--	<0.5	<0.5	<0.5	0.6	--	<1	<1	--	<20
	12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<3.0
	03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.160	<0.250	<0.750	--
	06/24/98	ND	<0.500	1.68	<0.500	<1.00	--	0.689	<0.250	<0.750	<1.00
	09/03/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.0716	<0.250	<0.750	--
	12/14/98	ND	<0.500	<0.500	0.795	1.31	--	0.0697	1.26/<0.250	<0.750/<0.750	--
	03/24/99	ND	<0.600	<0.700	<1.00	<2.50	--	0.118	0.969/<0.250	<0.750/<0.750	--
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.719/<0.250	<0.750/<0.750	<20.0
	09/29/99	ND	<0.500	3.52	<0.500	<10.0	--	0.136	1.58/<0.476	<1.43/<1.43	--
	12/16/99	ND	<0.500	<0.500	0.632	1.81	--	0.166	1.31/<0.250	<0.750/<0.750	--
	03/22/00	ND	<0.500	1.94	<0.500	<1.00	--	0.148	1.36/<0.447	<1.34/<1.34	--
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	0.0876	0.674/<0.250	<0.750/<0.750	<10.0
	09/15/00	ND	<0.500	<0.607	<0.500	<1.28	--	0.716	1.26/<0.250	<0.750/<0.750	--
	12/21/00	ND	<0.500	<0.500	<0.500	1.18	--	0.0991	1.25/<0.250	<0.750/<0.750	--
	03/15/01	ND	<0.500	<0.500	<0.500	1.75	--	0.0664	1.19/<0.250	<0.750/<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.538/<0.250	<0.750/<0.750	<1.00
	09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	0.0596	0.864/<0.250	<0.750/<0.750	--
	12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	0.175	2.22/<0.250[10]	0.852/<0.750[10]	--

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
			B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-25 (continued)	03/26/02	ND	<0.500	<0.500	<0.500	1.39	--	0.12	0.861/<0.250	<0.750/<0.750	--
	06/19/02	ND	<0.500	<0.500	<0.500	1.44	--	0.108	0.706/<0.250	<0.750/<0.750	<1.00
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	0.0578	<0.250	<0.750	--
	12/02/03	ND	<0.500	<0.500	<0.500	<1.00	--	0.110	<0.250	<0.750	--
MW-26	01/31/89	--	<0.5	<0.5	<0.5	<0.5	0.64	--	--	--	25
	04/27/89	--	<0.5	<0.5	<0.5	<0.5	0.08	--	--	--	<5
	07/25/89	--	<0.5	<0.5	<0.5	<0.5	1.4	--	--	--	<5
	10/26/89	--	<0.5	<0.5	<0.5	<0.5	0.94	--	--	--	<5
	01/16/90	--	<0.5	<0.5	<0.5	<0.5	1.8	--	--	--	<5
	04/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
	07/25/90	--	<0.5	<0.5	<0.5	<0.5	2	--	--	--	<5
	10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<50
	01/17/91	--	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	--	<50
	04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2
	09/19/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2
	12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<3.0
	06/30/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250/<0.250	<0.750/<0.750	--
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.445/<0.250[10]	<0.750/<0.750[10]	--
	06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/02/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-27	01/31/89	--	<0.5	1.8	<0.5	<0.5	0.64	--	--	--	<5
	04/27/89	--	<0.5	<0.5	<0.5	<0.5	0.23	--	--	--	<5
	07/25/89	--	1.0	<0.5	<0.5	<0.5	0.68	--	--	--	<5
	10/26/89	--	1.3	0.7	<0.5	0.7	1.1	--	--	--	<5
	01/16/90	--	<0.5	<0.5	<0.5	<0.5	1.3	--	--	--	<5
	04/16/90	--	<0.5	<0.5	<0.5	0.6	<1	--	--	--	<5
	07/25/90	--	<0.5	<0.5	<0.5	<0.5	2	--	--	--	<5
	10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
	01/17/91	--	0.6	<0.5	<0.5	<0.5	--	<1	<1	--	<5
	04/16/91	--	<0.5	<0.5	<0.5	0.9	--	<1	<1	--	<2
	09/19/91	--	<0.5	<0.5	<0.5	1.1	--	<1	<1	--	4
	12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<3.0
	03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/24/98	ND	<0.500	2.85	<0.500	<1.00	--	0.188	<0.250	<0.750	<1.00
	09/03/98	ND	<0.800	<0.500	<0.500	<1.00	--	0.0961	0.316	<0.750	--
	12/14/98	ND	<4.00	<0.500	<0.500	1.33	--	0.119	0.485/<0.250	<0.750/<0.750	--
	03/24/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.394/<0.250	<0.750/<0.750	--
	07/01/99	ND	<0.500	<2.20	<0.500	<1.00	--	0.0823	0.394/<0.250	<0.750/<0.750	--
	09/29/99	ND	<0.500	1.87	<0.500	<1.00	--	<0.0500	0.830/<0.323	<0.750/<0.750	--
	12/16/99	ND	<0.500	<0.500	<0.500	1.29	--	0.0925	0.544[15]	<0.750[15]	--
	03/22/00	ND	<0.500	0.874	<0.500	<1.00	--	<0.0500	0.468/<0.250	<0.750/<0.750	--
	06/22/00	ND	0.692	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	09/15/00	ND	<0.605	<0.500	<0.500	<1.00	--	<0.0500	0.420/<0.250	<0.750/<0.750	--
	12/21/00	ND	1.89	<0.500	<0.500	<1.00	--	0.0727	0.308/<0.250	<0.750/<0.750	--
	03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.537/<0.250	<0.750/<0.750	--
	06/21/01	Sheen	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.259/<0.250	<0.750/<0.750	--
	09/25/01	ND	0.571	<0.500	<0.500	<1.00	--	<0.0500	1.38/0.547	<0.750/<0.750	--
	12/19/01	Sheen	<0.500	<2.00	<1.00	<1.50	--	<0.100	<0.250[10]	<0.750[10]	--
	03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.257/<0.250	<0.750/<0.750	--
	06/19/02	ND	<0.500	<0.500	<0.500	1.05	--	<0.0500	<0.250	<0.750	--
	09/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	03/21/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/19/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	09/18/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.672	<0.750	--
	12/03/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	03/09/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/03/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	09/03/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/06/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	03/04/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/03/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	09/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/01/05	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.236	<0.708	--
	03/02/06	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.236	<0.708	--
MW-27R	03/07/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.048	<0.076	<0.094	--
	09/26/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.077	<0.096	<0.47
	11/27/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.080	<0.100	0.091
MW-34	10/26/89	--	1.7	3	<0.5	2.1	0.27	--	--	--	<5
	01/16/90	--	<0.5	<0.5	<0.5	<0.5	0.08	--	--	--	<5
	04/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
	07/25/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
	10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
	01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
	04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2
	09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	3
	12/01/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	3.0
MW-35	10/26/89	--	33	1.1	<0.5	1.4	<0.5	--	--	--	<5
	01/16/90	--	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	<5
	04/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
	07/25/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
	10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
	01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
	04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
	09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	2
	12/01/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	3.3
MW-36	10/26/89	--	330	1.9	2.5	8.0	2	--	--	--	<5
	01/16/90	--	95	3.1	<0.5	9.4	0.39	--	--	--	<5
	04/16/90	--	140	7.8	<0.5	<5.0	3.2	--	--	--	<5
	07/25/90	--	<0.5	<0.5	3.4	17	4	--	--	--	<5
	10/16/90	--	8.0	<0.5	<0.5	4.8	8	--	--	--	<5
	01/17/91	--	1.2	5.6	12	58	6	11	20	--	<5
	04/16/91	--	1.7	6.4	<0.5	4.9	--	<1	<1	--	<2
	09/17/91	--	<0.5	<0.5	1.1	3.2	--	15	29	--	<2
	12/01/91	--	<0.5	<0.5	2.5	6.5	--	<1	<1	--	<3.0
	03/13/98	ND	<0.500	<0.500	<0.500	<1.00	--	0.609	12.5	2.69	--
	06/25/98	ND	<0.500	<0.500	<0.500	<2.50	--	0.345	<0.250	<0.750	<1.00
	09/03/98	ND	<0.800	<0.500	<0.750	<4.00	--	0.499	7.42	1.43	--
	12/14/98	ND	1.24	0.699	0.707	4.12	--	0.536	1.43/<0.250	<0.750/<0.750	--
	03/24/99	ND	1.96	<1.10	<1.40	<3.50	--	0.999	27.1/18.1	5.86/3.39	--
	07/01/99	ND	<0.500	<0.500	<0.500	<2.00	--	0.257[4]	1.28/<0.250	<0.750/<0.750	--
	09/29/99	ND	<0.500	<0.500	<5.00	<10.0	--	0.562[4]	4.63/2.01	0.849/<0.0750	--
	12/16/99	ND	0.813	<1.50	<5.00	<2.00	--	0.344	0.867/<0.250	<0.750/<0.750	--
	03/22/00	ND	<0.500	0.792	<0.500	<3.00	--	0.584	6.42/4.30	1.58/<0.750	--

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
			B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-36 (continued)	06/22/00[8]	ND	5.80	70.0	33.2	240	--	2.17	0.850/<0.250	<0.750/<0.750	--
	09/15/00	Sheen	<0.500	<2.39	<0.704	<5.46	--	0.923	9.25/6.10	1.70/0.927	--
	12/21/00	ND	0.636	<1.12	<0.500	<2.20	--	0.229	1.26/<0.250	<0.750/<0.750	--
	03/15/01	ND	2.00	<1.04	<0.500	<12.5	--	2.19	5.46/4.03	1.40/<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	0.207	0.643/<0.250	<0.750/<0.750	--
	09/25/01	Sheen	1.03	<0.500	<0.500	2.54	--	0.514	8.88/6.64	1.92/<0.750	--
	12/19/01	ND	1.49	<2.00	<1.00	<1.50	--	0.415	1.15/<0.250[10]	<0.750/<0.750[10]	--
	03/26/02	ND	1.01	<0.500	<0.500	1.9	--	0.38	1.47/0.794	<0.750/<0.750	--
	06/20/02	ND	0.618	<0.500	<0.500	<1.00	--	0.106	1.01/<0.250	<0.750/<0.750	--
	09/19/02	Sheen	0.914	<0.500	<0.500	1.85	--	0.307	1.39[13]	<0.750[6]	--
	12/13/02	Sheen	<0.500	<0.500	<0.500	1.07	--	0.186	15.5	<0.750	--
	03/21/03	Sheen	0.846	<0.500	<0.500	2.4	--	0.398	3.25	<0.750	--
	06/19/03[14]	Sheen	0.691	0.508	0.503	2.93	--	0.623[7]	6.09	1.27	--
	09/18/03	Sheen	<0.500	<0.500	<0.500	1.29	--	0.219	4.87	0.943	--
	12/02/03	Sheen	0.538	<0.500	<0.500	1.37	--	0.242	1.97	<0.750	--
MW-41	09/18/90	--	--	--	--	--	2	--	--	--	<5
	10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
	01/17/91	--	<0.5	<0.5	1.2	3.9	<1	1	<1	--	<5
	04/16/91	--	3.5	0.9	4.5	1.4	--	<1	<1	--	<2
	09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	4	--	<2
	12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<3.0
	06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/16/99	ND	<0.500	<0.500	<5.00	<1.00	--	<0.0500	<0.250	<0.750	--
	06/22/00[8]	ND	<0.500	6.55	3.97	35.8	--	0.433	<0.250	<0.750	--
	12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/22/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	<0.250[10]	<0.750[10]	--
	06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-42	10/16/90	--	<0.5	<0.5	<0.5	<0.5	<1	--	--	--	<5
	01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
	04/16/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<2
	09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	3
	12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<3.0
MW-43	10/16/90	--	2.9	<0.5	17	5.3	<1	--	--	--	<5
	01/17/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<5
	04/16/91	--	<0.5	<0.5	0.7	0.6	--	<1	<1	--	<2
	09/17/91	--	<0.5	<0.5	<0.5	<0.5	--	3	9	--	3
	12/10/91	--	<0.5	<0.5	<0.5	<0.5	--	<1	<1	--	<3.0
MW-52	06/25/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.522/<0.250	<0.750/<0.750	--
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.250/<0.250	<0.750/<0.750	--
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.257/<0.250	<0.750/<0.750	--
	06/22/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.325/<0.250[10]	<0.750/<0.750[10]	--
	06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.289/<0.250	<0.750/<0.750	--
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/02/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-67	03/13/98	ND	<0.500	0.658	1.57	3.37	--	0.237	<0.250	<0.750	--
	06/24/98	ND	<0.500	1.44	<0.500	<1.00	--	0.0597	<0.250	<0.750	<1.00
	09/03/98	ND	<1.00	<0.500	0.913	<1.00	--	0.0661	0.287	<0.750	--
	12/14/98	ND	<0.800	<2.00	2.44	4.87	--	0.432	0.813/0.328	<0.750/<0.750	--
	03/24/99	ND	4.84	<0.500	<0.500	<1.00	--	0.158	0.566/<0.250	<0.750/<0.750	--
	07/01/99	ND	<4.20	<1.00	2.68	4.66	--	0.341	0.833/0.275	<0.750/<0.750	<20.0
	09/29/99	ND	0.554	1.88	0.884	1.55	--	0.239	0.544/<0.250	<0.750/<0.750	--
	12/16/99	ND	<8.20	<1.25	1.9	8.65	--	0.561	0.807/<0.250	<0.750/<0.750	--
	03/22/00	ND	<0.500	1.71	0.533	1.46	--	0.156	0.651/0.292	<0.750/<0.750	--
	06/22/00	ND	4.74	1.02	1.65	4.53	--	0.395	0.951/<0.250	<0.750/<0.750	<10.0
	09/15/00	ND	<3.00	<0.500	<0.520	<1.81	--	0.157	0.607/<0.250	<0.750/<0.750	--
	12/21/00	ND	7.35	<1.38	<2.04	5.73	--	0.413	0.646/<0.250	<0.750/<0.750	--
	03/15/01	ND	<0.500	<0.500	<0.624	<1.77	--	0.165	0.524/<0.250	<0.750/<0.750	--
	06/21/01	ND	<0.500	1.21	2.47	2.61	--	0.403	0.479/<0.250	<0.750/<0.750	<1.00
	09/25/01	ND	3.45	<0.500	1.46	2.10	--	0.230	0.585/0.295	<0.750/<0.750	--
	12/19/01	ND	13.2	<2.00	1.46	2.97	--	1.01	0.760/<0.250[10]	<0.750/<0.750[10]	--
	03/26/02	ND	3.01	<0.500	0.671	1.09	--	0.178	0.672/<0.250	0.839/<0.750	--
	06/19/02	ND	<0.500	<0.500	<0.500	1.21	--	<0.0500	<0.250	<0.750	<1.00
	09/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250[13]	<0.750[13]	--
	12/13/02	ND	<0.500	<0.500	0.751	2.99	--	<0.0500	<0.250	<0.750	--
	03/21/03	ND	<0.500	<0.500	0.751	<1.00	--	<0.0500	0.352	1.44	--
	06/19/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	09/18/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/03/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-70	06/25/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.488/<0.250	<0.750/<0.750	--
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<20.0
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.392/<0.250	<0.750/<0.750	--
	06/22/00[8]	ND	<0.500	1.31	0.610	3.83	--	0.0632	<0.250[13]	<0.750[13]	<1.00
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.372/<0.250[10]	<0.750/<0.750[10]	--
	06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/02/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/06/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-70R	02/16/16	ND	<0.500	<0.500	<0.500	<1.50	--	<0.0500	<0.029	<0.067	--
Duplicate	02/16/16	ND	<0.500	<0.500	<0.500	<1.50	--	<0.0500	<0.029	<0.067	--
	06/14/16	ND	<0.500	<0.500	<0.500	<1.50	--	<0.0500	<0.028	<0.066	--
	09/22/16	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.030	<0.070	--
	01/12/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.046	<0.070	--
Duplicate	01/12/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.046	<0.070	--
	03/27/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
	06/16/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.068	--
	11/08/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.047	<0.100	--
	03/26/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
Duplicate	03/26/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
	06/20/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
Duplicate	06/20/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.066	--
	09/27/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.019	<0.030	<0.070	--
Duplicate	09/27/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.019	<0.031	<0.072	--
	12/13/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.019	<0.045	<0.100	--
	03/25/19	ND	<0.5	<0.5	<0.5	<1.5	--	<0.019	<0.046	<0.100	--
Duplicate	03/25/19	ND	<0.5	<0.5	<0.5	<1.5	--	<0.019	<0.046	<0.100	--
	06/25/19	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.046	<0.100	--
	09/26/19	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.120	<0.280	--
Duplicate	09/26/19	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.044	<0.099	--
	12/18/19	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.055	<0.120	--
Duplicate	12/18/19	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.048	<0.110	--
	03/24/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.047	<0.10	--
Duplicate	03/24/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.048	<0.11	--

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
			B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-70R (continued)	06/16/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.046	<0.10	--
Duplicate	06/16/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.047	<0.10	--
	09/11/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.052 *1	<0.110	--
Duplicate	09/11/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.052 *1	<0.120	--
	11/18/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.047 *	<0.110	--
Duplicate	11/18/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.049 *	<0.110	--
	03/16/21	**ND**	**<0.20**	**<0.20**	**<0.40**	**<1.4**	**--**	**<0.019**	**<0.048**	**<0.110**	**--**
Duplicate	**03/16/21**	**ND**	**<0.20**	**<0.20**	**<0.40**	**<1.4**	**--**	**<0.019**	**<0.048 *1**	**<0.110**	**--**
	06/07/21	**ND**	**<0.30**	**<0.30**	**<0.40**	**<1.4**	**--**	**<0.019**	**<0.049 H**	**<0.110 H**	**--**
Duplicate	**06/09/21**	**ND**	**<0.30**	**<0.30**	**<0.40**	**<1.4**	**--**	**<0.019**	**<0.049**	**<0.110**	**--**
MW-71	06/25/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	12/14/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	3.77/<0.250	<0.750/<0.750	--
	07/01/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<20.0
	12/16/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.430[15]	<0.904[15]	--
	06/22/00[8]	ND	<0.500	0.980	0.522	3.08	--	0.0746	<0.250	<0.750	<1.00
	12/21/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/21/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.514/<0.0.250[10]	<0.750/<0.750[10]	--
	06/19/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/02/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-72	03/13/98	ND	<11.0	<3.00	<3.00	<11.0	--	1.30	0.369	<0.750	--
	06/24/98	ND	<1.00	<1.00	<0.500	<2.00	--	0.699	0.286	<0.750	<1.00
	09/03/98	ND	<9.38	<2.50	<2.50	<4.50	--	1.03	3.11	1.78	--
	12/14/98	Sheen	5.45	0.644	1.07	1.68	--	0.196	0.847/<0.250	<0.750/<0.750	--
	03/24/98	Sheen	4.69	<0.950	<0.950	<3.30	--	0.269	1.74/0.744	1.42/<0.750	--
	07/01/99	ND	<2.80	<0.900	<0.500	<2.26	--	0.248	1.05/<0.250	<0.750/<0.750	<1.00
	09/29/99	Sheen	5.71	2.71	0.68	5.01	--	0.481	1.86/0.424[13]	1.01/<0.750[13]	--
	12/16/99	Sheen	<7.40	<1.40	<0.500	6.87	--	0.421	0.905/<0.475	<1.43/<1.43	--
	03/22/00	ND	2.88	5.40	0.846	6.42	--	0.596	1.40/0.462	<0.750/<0.750	--
	06/22/00	ND	5.98	1.11	0.599	2.38	--	0.344	1.11/<0.250	<0.750/<0.750	<1.00
	09/15/00	ND	1.47	<1.20	<0.525	<5.42	--	0.547	1.35/0.427	<0.750/<0.750	--
	12/21/00	ND	5.71	<1.00	<0.500	4.46	--	0.422	0.698/<0.250	<0.750/<0.750	--
	03/15/01	ND	1.90	<1.06	<0.791	<3.29	--	0.454	1.47/<0.250	0.752/<0.750	--
	06/21/01	ND	1.08	1.29	<0.500	2.78	--	0.274	0.591/<0.250	<0.750/<0.750	--
	09/25/01	Sheen	7.98	0.679	1.07	3.24	--	0.695	3.37/1.35	1.90/0.942	--
	12/19/01	ND	12.2	<2.00	<1.00	3.21	--	0.835	1.59/0.261[10]	<0.750/<0.750[10]	--
	03/26/02	Sheen	6.4	0.753	<0.500	3.88	--	0.47	1.05/<0.250	<0.750/<0.750	--
	06/19/02	ND	10.3	0.722	1.48	4.60	--	0.697	3.19/<0.250	<0.750/<0.750	--
	09/19/02	Sheen	13.3	0.798	2.29	4.29	--	0.828	0.769[11]	<0.750[11]	--
	12/13/02	Sheen	8.35	0.747	2.27	6.10	--	0.594	4.15	2.94	--
	03/21/03	Sheen	3.2	<0.500	0.909	1.29	--	0.360	0.281	<0.750	--
	06/19/03	Sheen	8.28	0.509	1.79	3.82	--	0.476	1.61	1.25	--
	09/18/03	Sheen	4.54	<0.500	0.931	4.28	--	0.522	1.17	0.775	--
	12/02/03	Sheen	2.26	<0.500	<0.500	2.34	--	0.439	1.20	0.979	--
	03/09/04	Sheen	0.738	<0.500	<0.500	1.31	--	0.133	0.315	<0.750	--
	06/03/04	Sheen	0.656	<0.500	<0.500	<1.00	--	0.195	0.265	<0.750	--
	09/03/04	ND	1.41	<0.500	<0.500	1.72	--	0.294	0.275	<0.750	--
	12/06/04	ND	1.27	<0.500	<0.500	1.47	--	0.238	<0.250	<0.750	--
	03/04/05	ND	1.07	<0.500	<0.500	2.20	--	0.202	0.524	<0.750	--
	06/03/05	ND	1.10	<0.500	<0.500	<1.00	--	0.141	<0.250	<0.750	--
MW-73	03/12/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	09/03/98	ND	<0.500	<0.500	<0.500	1.30	--	<0.0500	<0.250	<0.750	--
	12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.388/<0.250	<0.750/<0.750	--
	03/24/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.665/<0.250	<0.750/<0.750	--
	06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.370/<0.250	<0.750/<0.750	<1.00
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.430/<0.250	<0.750/<0.750	--
	12/15/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.830/<0.250	<0.750/<0.750	--
	03/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.559/<0.250	<0.750/<0.750	--
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	0.0737	0.407/<0.250	<0.750/<0.750	<10.0
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.298/<0.250	<0.750/<0.750	--
	12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/22/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	0.693/<0.250[10]	<0.750/<0.750[10]	--
	03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.618/<0.250	<0.750/<0.750	--
	06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.287/<0.250	<0.750/<0.750	<1.00
MW-74	03/12/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	1.93
	09/03/98	ND	<0.500	<0.500	<0.500	1.02	--	<0.0500	0.29	1.07	--
	12/15/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.517/<0.250	<0.750/<0.750	--
	03/24/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.600/<0.250	0.993/<0.750	--
	06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.251/<0.250	<0.750/<0.750	<1.00
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.462/<0.250	<0.750/<0.750	--
	12/15/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.659/<0.250	<0.750/<0.750	--
	03/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.500/<0.250	0.923/<0.750	--
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.234	<0.748	<1.00
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.273/<0.250	0.863/<0.750	--
	06/22/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.505/<0.250	<0.750/<0.750	--
	09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	1.06/<0.250[10]	1.11/<0.750[10]	--
	03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.430/<0.250	<0.750/<0.750	--
	06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.305/<0.250	<0.750/<0.750	<1.00
MW-75	03/12/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/29/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	09/03/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/15/98	ND	<0.500	<0.500	<0.500	1.33	--	<0.0500	<0.250	<0.750	--
	03/24/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	09/29/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250/<0.250	<0.750/<0.750	--
	12/15/99	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	03/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.239	<0.744	<1.00
	09/14/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	03/15/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/22/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
	09/25/01	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/18/01	ND	<0.500	<2.00	<1.00	<1.50	--	<0.100	<0.250[10]	<0.750[10]	--
	03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	06/20/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<1.00
MW-76	06/24/98	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	<5.00
	09/03/98	ND	0.962	0.774	0.609	<1.00	--	0.0593	0.361	<0.750	--
	12/14/98	ND	<1.00	<0.500	1.29	<1.00	--	0.0779	0.789/<0.250	<0.750/<0.750	--
	03/24/98	ND	<1.00	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	07/01/99	ND	<1.20	<0.500	1.64	1.31	--	0.0998	0.786/<0.250	<0.750/<0.750	<20.0
	09/29/99	ND	<0.500	0.538	0.583	<1.00	--	0.0577	0.632/<0.250	<0.750/<0.750	--
	12/16/99	ND	0.582	<0.500	0.631	<1.00	--	0.728	0.667/<0.250	<0.750/<0.750	--
	03/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.640/<0.250	<0.750/<0.750	--

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
			B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-76 (continued)	06/22/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.259/<0.250	<0.750/<0.750	<1.00
	09/15/00	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.605/<0.250	<0.750/<0.750	--
	12/21/00	ND	<0.600	<0.500	0.628	<1.00	--	0.784	0.606/<0.250	<0.750/<0.750	--
	03/15/01	ND	0.506	1.35	<0.500	1.22	--	<0.0500	0.278/<0.250	<0.750/<0.750	--
	06/21/01	ND	<0.500	<0.500	0.808	<1.00	--	<0.0500	<0.250	<0.750	--
	09/25/01	ND	0.508	<0.500	0.774	<1.00	--	<0.0500	0.461/0.316	<0.750/<0.750	--
	12/19/01	ND	<0.500	<2.00	<1.00	<1.50	--	0.114	0.549/<0.250	<0.750/<0.750	--
	03/26/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	0.317/<0.250	<0.750/<0.750	--
	06/19/02	ND	<0.500	<0.500	<0.500	1.11	--	<0.0500	<0.250	<0.750	--
	12/13/02	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/03/03	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
	12/06/04	ND	<0.500	<0.500	<0.500	<1.00	--	<0.0500	<0.250	<0.750	--
MW-200	03/08/07	Sheen	2.80	0.5	3.7	4	--	0.39	0.46	<0.095	--
	06/07/07	ND	2.4	0.6	2.1	2.5	--	0.250	0.310	<0.095	<0.037
	09/26/07	ND	1.6	<0.5	0.9	<1.5	--	0.230	0.270	<0.100	<0.047
Duplicate	09/26/07	ND	1.7	<0.5	0.8	<1.5	--	0.230	0.310	0.120	<0.047
	11/28/07	ND	2.0	<0.5	1.2	2.1	--	0.250	0.330	<0.100	0.064
	02/13/08	ND	3.44	<0.500	1.19	1.79	--	0.497	<0.236	<0.472	<1.00
	05/13/08	ND	2.70	<0.500	1.15	2.07	--	0.426	<0.240	<0.481	<1.00
	09/03/08	ND	<0.500	0.883	1.46	<1.00	--	0.337	<0.236	<0.472	<1.00
	12/04/08	ND	3.19	<0.500	0.975	2.01	--	0.427	<0.238	<0.476	<1.00
	02/18/09	ND	2.54	<0.500	0.619	1.14	--	0.355	<0.250	<0.500	<1.00
	05/13/09	ND	3.43	<0.500	1.12	1.91	--	0.513	<0.278	<0.556	<1.00
	09/11/09	ND	<0.500	<0.500	0.52	<1.00	--	0.360	<0.248	<0.495	<2.0
	04/14/10	ND	<0.50	<0.50	0.54	<2.0	--	0.35	0.31	<0.25	<2.0
	08/12/10	Sheen	--	--	--	--	--	--	--	--	
	09/22/10	ND	<0.50	<0.50	0.56	1.2	--	0.43	0.56	<0.25	<2.0
	04/26/11	ND	6.2	<0.50	0.59	1.5	--	0.39	--	--	<2.0
	04/28/11	ND	--	--	--	--	--	--	0.33	<0.24	--
	09/22/11	ND	6.7 [18]	<0.50 [18]	0.83 [18]	1.9 [18]	--	0.27	0.39 [17]	<0.24	--
Duplicate	09/22/11	ND	5.0	<0.50	0.65	1.4	--	0.24	0.37 [17]	<0.24	--
	04/18/12	ND	3.7	<0.50	0.73	1.4	--	0.20	0.27 [17]	<0.24	--
	10/11/12	ND	<0.50	0.75 [21]	<0.50	<0.50	--	0.39	0.30 [17,19,20]	<0.24	--
	04/25/13	ND	6.5	<0.5	1.1	2.1	--	0.35	0.120	<0.068	--
	09/19/13	ND	2.3	<0.5	<0.5	<1.5	--	0.11	0.160	<0.068	--
	06/24/14	ND	2.4	<0.5	<0.5	<1.5	--	0.120 J	0.083	<0.067	--
	12/16/14	ND	<6.0	<0.7	1.1	<2.4	--	0.460	0.130	<0.066	--
	06/18/15	ND	<3.0	<0.5	<0.5	<1.5	--	0.092	0.074	<0.066	--
	12/08/15	ND	<0.5	0.5	0.8	<1.5	--	0.460	0.092	<0.067	--
	06/14/16	ND	<0.5	<0.5	0.6	<1.5	--	0.290	0.150	<0.067	--
	01/13/17	ND	4.2	0.5	0.9	2.2	--	0.490	0.140	<0.067	--
	06/13/17	ND	2.0	<0.5	0.6	<1.5	--	0.340	0.080	<0.067	--
	11/08/17	ND	<4.0	<0.5	<0.5	<1.5	--	0.530	0.076	<0.110	--
	06/20/18	ND	<0.5	<0.5	<0.5	<1.5	--	0.370	0.110	<0.073	--
	12/13/18	ND	<0.5	0.6	<0.5	<1.5	--	0.230	0.130	0.130	--
	06/25/19	ND	<0.2	<0.2	<0.4	<1	--	0.240 J	0.057 J	<0.110	--
	12/18/19	ND	<0.2	<0.2	<0.4	<1	--	0.190 J	0.130	<0.110	--
	06/16/20	ND	<0.2	<0.2	<0.4	<1	--	0.21 J	0.072 J	<0.110	--
	11/19/20	ND	<0.2	<0.2	<0.4	<1	--	0.31	<0.045 * *1	<0.100	--
	06/07/21	**ND**	**<0.30**	**<0.30**	**<0.40**	**<1.4**	**--**	**0.210 J**	**<0.047**	**<0.110**	**--**
MW-201	03/08/07	Sheen	0.50	<0.5	<0.5	<1.5	--	0.076	0.51	0.18	--
	06/07/07	ND	0.50	<0.5	<0.5	<1.5	--	0.08	0.53	0.17	0.1
Duplicate	06/07/07	ND	0.60	<0.5	<0.5	<1.5	--	0.069	0.39	0.13	--
	09/27/07	Sheen	<0.5	<0.5	<0.5	<1.5	--	0.076	0.810	0.470	0.080
	11/27/07	ND	0.6	<0.5	<0.5	<1.5	--	0.065	0.390	0.150	0.098
	02/12/08	ND	0.813	<0.500	<0.500	<1.00	--	0.111	<0.243	<0.485	<1.00
	05/14/08	Sheen	0.616	<0.500	<0.500	<1.00	--	0.110	<0.236	<0.472	<1.00
	09/05/08	ND	<0.500	0.517	<0.500	<1.00	--	0.153	<0.238	<0.476	<1.00
	12/05/08	ND	2.24	0.511	<0.500	1.87	--	0.323	<0.248	<0.495	<1.00
	02/17/09	ND	0.552	<0.500	<0.500	<1.00	--	0.0887	<0.263	<0.526	<1.00
	05/13/09	ND	2.42	<0.500	<0.500	1.76	--	0.372	<0.250	<0.500	<1.00
	09/11/09	ND	<0.500	<0.500	<0.500	1.4	--	0.43	<0.248	<0.495	<2.0
	04/14/10	ND	<0.50	<0.50	<0.50	<2.0	--	0.15	0.17	<0.25	<2.0
	08/11/10	Sheen	--	--	--	--	--	--	--	--	
	09/22/10	ND	<0.50	<0.50	<0.50	1.1	--	0.27	0.47	<0.25	<2.0
	04/26/11	ND	1.6	<0.50	<0.50	<1.0	--	0.18	--	--	<2.0
	09/22/11	ND	3.6	<0.50	<0.50	1.4	--	0.22	0.33 [17]	<0.24	--
	04/18/12	ND	1.8	<0.50	<0.50	<1.0	--	0.14	0.29 [17]	<0.24	--
	10/11/12	ND	<0.50	0.61 [21]	<0.50	0.81	--	0.37	0.28 [17,19,20]	<0.24	--
	04/25/13	ND	1.7	0.9	<0.5	<1.5	--	0.14	0.049	<0.067	--
	09/19/13	ND	1.8	<0.5	<0.5	<1.5	--	0.13	0.075	<0.067	--
	06/23/14	ND	2.2	<0.5	<0.5	<1.5	--	0.210 J	0.068	<0.067	--
	12/16/14	ND	2.4	<0.7	0.6	2.3	--	0.450	0.063	<0.067	--
	06/18/15	ND	<2.0	<0.5	<0.5	<1.5	--	0.130	0.32	0.46	--
	12/08/15	ND	<0.5	<0.5	0.6	1.6	--	0.580	0.062	<0.066	--
Duplicate	12/08/15	ND	<0.5	<0.5	<0.5	<1.5	--	0.500	0.19	0.27	--
	06/14/16	ND	<0.5	<0.5	<0.5	<1.5	--	0.160	0.072	<0.068	--
	01/13/17	ND	2.6	<0.5	0.6	<1.5	--	0.400	0.062	<0.067	--
	06/13/17	ND	1.3	0.9	<0.5	<1.5	--	0.350	0.260	0.350	--
	11/08/17	ND	<3.0	0.5	<0.5	<1.5	--	0.370	0.053	<0.110	--
	06/20/18	ND	<0.5	<0.5	<0.5	<1.5	--	0.340	0.063	<0.067	--
	12/13/18	ND	<0.5	<0.5	<0.5	<1.5	--	0.220	0.054	<0.100	--
	06/25/19	ND	<0.2	<0.2	<0.4	<1	--	0.300	<0.047	<0.110	--
	12/18/19	ND	<0.2	<0.2	<0.4	<1	--	0.200 J	<0.048	<0.110	--
	06/16/20	ND	<0.2	<0.2	<0.4	<1	--	**0.25**	**0.052 J**	<0.110	--
	11/18/20	ND	<0.2	<0.2	<0.4	<1	--	0.26	0.084 J *	0.240 J	--
	06/08/21	**ND**	**<0.30**	**<0.30**	**<0.40**	**<1.4**	**--**	**0.170 J**	**<0.047**	**<0.100**	**--**
MW-202	03/08/07	ND	0.60	<0.5	<0.5	<1.5	--	0.16	0.18	<0.095	--
	06/07/07	ND	<0.5	<2.0 [18]	0.9	<1.5	--	0.072	0.150	<0.095	0.19
	09/27/07	ND	<0.5	<0.5	<0.5	<1.5	--	0.110	0.380	0.360	<0.24
	11/26/07	ND	<0.5	<0.5	0.8	<1.5	--	0.100	0.290	0.120	0.37
	02/12/08	ND	<0.500	<0.500	0.751	<1.00	--	0.249	<0.240	<0.481	<1.00
	05/13/08	ND	<0.500	<0.500	0.620	<1.00	--	0.188	<0.236	<0.472	<1.00
	09/04/08	ND	<0.500	<0.500	1.55	<1.00	--	0.135	<0.238	<0.476	<1.00
	12/04/08	ND	<0.500	<0.500	<0.500	1.34	--	0.132	<0.245	<0.490	<1.00
	02/18/09	ND	<0.500	<0.500	0.583	<1.00	--	0.314	<0.245	<0.490	<1.00
	05/13/09	ND	<0.500	<0.500	<0.500	<1.00	--	0.233	<0.243	<0.485	<1.00
	09/11/09	ND	<0.500	<0.500	<0.500	<1.00	--	0.120	<0.245	<0.490	<2.0
	04/14/10	ND	<0.50	<0.50	<0.50	<2.0	--	0.10	<0.12	<0.25	<2.0
	09/22/10	ND	<0.50	<0.50	<0.50	<2.0	--	0.090	<0.12	<0.25	<2.0
	04/27/11	ND	<0.50	<0.50	<0.50	<1.0	--	0.072	--	--	<2.0
	04/28/11	ND	--	--	--	--	--	--	<0.12	<0.24	--
	09/21/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	0.18 [17]	<0.24	--
	04/18/12	ND	<0.50	<0.50	<0.50	<1.0	--	0.074	0.24 [17]	<0.24	--
	10/11/12	ND	<0.50	<0.50	<0.50	<0.50	--	0.100	0.19 [17,19,20]	<0.24	--
	04/25/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.031	<0.073	--
	09/19/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.030	<0.069	--
	06/23/14	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050 UJ	<0.029	<0.067	--
	12/16/14	ND	<0.5	<0.5	<0.5	<1.5	--	0.052	<0.028	<0.066	--
	06/18/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
	12/08/15	ND	<0.5	<0.5	<0.5	<1.5	--	0.064	<0.029	<0.068	--
	06/14/16	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.068	--
	01/13/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.030	<0.070	--

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
			B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-202 (continued)	06/13/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
	11/08/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.046	<0.100	--
	06/20/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.031	<0.072	--
	12/13/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.019	<0.046	<0.100	--
Duplicate	12/13/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.019	<0.045	<0.100	--
	06/25/19	ND	<0.2	<0.2	<0.4	<1	--	0.047 J	<0.047	<0.110	--
	12/17/19	ND	<0.2	<0.2	<0.4	<1	--	<0.019	0.055 J	<0.110	--
	06/16/20	ND	<0.2	<0.2	<0.4	<1	--	0.0047 J	<0.47	<0.110	--
	11/18/20	ND	<0.2	<0.2	<0.4	<1	--	0.039 J	<0.048 *	<0.110	--
	06/08/21	**ND**	**<0.30**	**<0.30**	**<0.40**	**<1.4**	**--**	**0.039 J**	**<0.048**	**<0.110**	**--**
MW-203	03/08/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.048	0.32	<0.095	--
	06/07/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.0500	0.150	<0.097	0.045
	09/28/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.500	0.400	0.270	<0.047
	11/27/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.290	<0.100	0.058
	02/12/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.240	<0.481	<1.00
Duplicate	02/12/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	<1.00
	05/14/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.243	<0.485	<1.00
Duplicate	05/14/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	--	--	--
	09/03/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	<1.00
	12/04/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.240	<0.481	<1.00
	02/17/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	<1.00
	05/13/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.243	<0.485	<1.00
	09/11/09	ND	<0.500	<0.500	<1.00	<1.00	--	0.082	<0.248	<0.495	<2.0
	04/14/10	ND	<0.50	<0.50	<0.50	<2.0	--	<0.050	<0.12	<0.25	<2.0
	09/22/10	ND	<0.50	<0.50	<0.50	<2.0	--	0.058	<0.12	<0.24	<2.0
	04/27/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	--	--	<2.0
	04/28/11	ND	--	--	--	--	--	--	<0.12	<0.24	--
	09/21/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	<0.12	<0.25	--
	04/18/12	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	0.14 [17]	<0.24	--
	10/11/12	ND	<0.50	<0.50	<0.50	<0.50	--	<0.025	0.22 [17,19,20]	<0.24	--
	04/25/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.031	<0.072	--
	09/19/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.068	--
	06/24/14	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050 UJ	<0.029	<0.067	--
Duplicate	06/24/14	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050 UJ	<0.029	<0.067	--
	12/16/14	ND	<0.5	<0.5	<0.5	<1.5	--	0.110	0.032	<0.067	--
	06/18/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.069	--
	12/07/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.030	<0.069	--
	06/15/16	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.047	<0.067	--
Duplicate	06/15/16	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.035	<0.067	--
	01/13/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.069	--
	06/13/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
	11/08/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.046	<0.100	--
	06/20/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.037	<0.068	--
	12/13/18	ND	<0.5	<0.5	<0.5	<1.5	--	0.032	0.054	<0.100	--
	06/25/19	ND	<0.2	<0.2	<0.4	<1	--	0.051 J	<0.046	<0.100	--
	12/17/19	ND	<0.2	<0.2	<0.4	<1	--	0.021 J	<0.046	<0.100	--
	06/16/20	ND	<0.2	<0.4	<0.2	<1	--	0.065 J	<0.46	<0.100	--
	11/19/20	ND	<0.2	<0.2	<0.4	<1	--	0.040 J	<0.045 * *1	<0.100	--
	06/08/21	**ND**	**<0.30**	**<0.30**	**<0.40**	**<1.4**	**--**	**0.063 J**	**<0.046**	**<0.100**	**--**
MW-204	03/08/07	Sheen	1.00	0.9	<0.5	<1.5	--	0.47	0.89	0.14	--
	06/07/07	ND	1.40	1.8	<0.5	2.6	--	0.670	1.400	0.170	<0.037
	09/28/07	ND	0.70	0.9	<0.5	1.6	--	0.640	1.000	0.260	<0.24
	11/27/07	ND	0.9	0.8	0.9	<5.0 [16]	--	0.670	0.700	0.160	<0.047
	02/12/08	ND	1.76	1.09	<0.500	2.12	--	0.713	<0.240	<0.481	<1.00
	05/14/08	ND	1.32	1.71	<0.500	4.17	--	0.782	0.310	0.784	<1.00
	09/03/08	ND	4.42	1.06	3.07	1.47	--	1.070	0.384	<0.476	<1.00
	10/01/08	ND	--	--	--	--	--	0.796	--	--	--
	12/04/08	ND	1.45	1.20	1.05	4.22	--	0.869	0.291	<0.495	<1.00
	02/17/09	ND	1.48	1.32	1.82	7.50	--	1.060	0.341	<0.500	<1.00
Duplicate	02/17/09	ND	1.54	1.30	1.81	7.45	--	1.120	0.332	<0.556	<1.00
	05/13/09	ND	1.93	1.55	1.86	4.79	--	1.190	0.593	<0.500	<1.00
Duplicate	05/13/09	ND	1.82	1.58	1.88	7.70	--	1.230	0.553	<0.556	<1.00
	09/11/09	ND	<0.500	1.10	<0.500	1.8	--	1.200	0.396	<0.495	<2.0
Duplicate	09/11/09	ND	<0.500	1.10	<0.500	1.8	--	1.100	0.393	<0.495	<2.0
	04/14/10	ND	1.1	2.1	<0.50	3.6	--	1.5	1.2	0.84	<2.0
Duplicate	04/14/10	ND	1.1	2.1	<0.50	3.7	--	1.5	1.1	<0.25	<2.0
	09/22/10	ND	<0.50	1.5	<0.50	3.2	--	1.3	1.5	<0.25	<2.0
	04/26/11	ND	1.6	1.5	<0.50	3.9	--	0.71	--	--	<2.0
Duplicate	04/26/11	ND	1.9	1.7	<0.50	5.0	--	1.0	--	--	<2.0
	04/28/11	ND	--	--	--	--	--	--	0.69	<0.24	--
Duplicate	04/28/11	ND	--	--	--	--	--	--	0.58	<0.24	--
	09/22/11	ND	1.7	1.6	<0.50	6.1	--	0.92	0.88 [17]	<0.25	--
Duplicate	09/22/11	ND	1.7	1.8	<0.50	6.5	--	0.92	0.65 [17]	<0.24	--
MW-204-NEAR	09/22/11	ND	1.7	1.7	<0.50	6.3	--	0.94	0.91 [17]	<0.25	--
	04/18/12	ND	1.6	1.7	<0.50	4.1	--	0.69	1.2 [17]	0.64 [17]	--
Duplicate	04/18/12	ND	2.0	1.7	<0.50	5.3	--	0.87	1.2 [17]	1.4 [17]	--
MW-204-NEAR	04/18/12	ND	2.0	1.8	<0.50	5.3	--	0.90	1.2 [17]	1.6 [17]	--
Duplicate	04/18/12	ND	2.0	1.8	<0.50	5.3	--	0.90	1.3 [17]	2.8 [17]	--
	10/12/12	ND	<0.50	1.3	<0.50	2.3	--	0.95	0.6 [17,19,20]	<0.24	--
Duplicate	10/12/12	ND	<0.50	1.2	<0.50	2.3	--	0.62	0.62 [17,19,20]	<0.24	--
MW-204-NEAR	10/12/12	ND	<0.50	1.3	<0.50	2.4	--	0.71	0.51 [17,19,20]	<0.24	--
	04/26/13	ND	0.7	2.2	1.6	4.6	--	0.89	0.24	<0.067	--
Duplicate	04/26/13	ND	0.7	2.2	1.7	4.9	--	0.88	0.32	0.077	--
	09/19/13	ND	1.1	1.5	1.1	3.5	--	0.58	0.31	<0.067	--
	06/24/14	ND	1.0	1.4	<0.5	2.6	--	0.600 J	0.24	<0.066	--
	07/25/14	ND	--	--	--	--	--	0.880	--	--	--
Duplicate	07/25/14	ND	--	--	--	--	--	0.90	--	--	--
	12/16/14	ND	0.9	1.5	1.3	<6.0	--	0.990	0.240	<0.066	--
Duplicate	12/16/14	ND	0.9	1.5	1.2	<6.0	--	1.000	0.200	<0.066	--
	06/18/15	ND	<0.5	0.9	0.6	<3.0	--	0.430	0.250	<0.069	--
	12/09/15	ND	1.0	1.6	1.4	3.8	--	1.400	0.190	<0.069	--
	01/15/16	ND	0.9	1.4	<1.2	3.5	--	1.400	0.840	0.4	--
Duplicate	01/15/16	ND	0.9	1.4	<1.1	3.5	--	1.400	0.210	<0.070	--
	06/13/16	ND	<0.5	1.6	1.4	2.9	--	0.890	0.210	<0.067	--
	01/13/17	ND	<0.5	1.4	1.3	3.3	--	1.400	0.260	<0.068	--
	06/13/17	ND	0.7	1.1	<0.5	2.3	--	1.200	0.170	<0.067	--
	11/08/17	ND	<0.9	1.2	1.2	2.3	--	1.000	0.160	<0.100	--
	06/20/18	ND	<0.5	1.2	1.2	2.4	--	1.200	0.230	<0.066	--
	12/13/18	ND	<0.5	1.1	0.9	2.0	--	0.830	0.075	<0.100	--
	06/24/19	ND	<0.2	0.5 J	<0.4	<1	--	0.890	0.130	<0.110	--
Duplicate	06/24/19	ND	<0.2	0.4 J	<0.4	<1	--	0.900	1.000	<0.110	--
	12/17/19	ND	<0.2	0.3 J	<0.4	<1	--	0.590	<0.047	<0.100	--
	06/16/20	ND	<0.2	0.4 J	<0.4	<1	--	0.950	0.19	<0.100	--
	11/19/20	ND	<0.2	0.26 J	<0.4	<1	--	1.100	0.130 * *1	<0.100	--
	06/08/21	**ND**	**<0.30**	**0.31 J**	**<0.30**	**<1.4**	**--**	**0.9**	**0.067 J**	**<0.100**	**--**
MW-205	03/08/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.048	0.18	<0.095	--
	06/07/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.098	<0.100	<0.037
	09/28/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.081	<0.100	<0.047
	11/27/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.120	0.560	<0.047
	02/12/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.248	0.529	<1.00
	05/14/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.238	<0.476	<1.00
	09/03/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.240	<0.481	<1.00
	12/05/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	<1.00

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
			B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-205 (continued)	02/17/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.248	<0.495	<1.00
	05/13/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.245	<0.490	<1.00
	09/11/09	ND	<0.500	<0.500	<0.500	<1.00	--	0.1	<0.248	<0.495	<2.0
	04/14/10	ND	<0.50	<0.50	<0.50	<2.0	--	0.051	<0.12	<0.25	<2.0
	09/22/10	ND	<0.50	<0.50	<0.50	<2.0	--	0.082	0.15	<0.25	<2.0
	04/26/11	LNAPL	--	--	--	--	--	--	--	--	--
	09/22/11	ND	<0.50	<0.50	<0.50	<1.0	--	0.07	<0.12	<0.25	--
MW-205-NEAR	09/22/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	<0.12	<0.25	--
	04/18/12	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	0.16 [17]	<0.24	--
Duplicate	04/18/12	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	0.25 [17]	0.44 [17]	--
MW-205-NEAR	04/18/12	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	7.4 [17]	4.8 [17]	--
	10/12/12	ND	<0.50	<0.50	<0.50	<0.50	--	0.027	0.23 [17,19,20]	<0.24	--
Duplicate	10/12/12	ND	<0.50	<0.50	<0.50	<0.50	--	0.035	0.54 [17,19,20]	0.34 [17]	--
MW-205-NEAR	10/12/12	ND	<0.50	<0.50	<0.50	<0.50	--	0.036	0.30 [17,19,20]	<0.24	--
	04/26/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.030	<0.069	--
	09/19/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
Duplicate	09/19/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
	06/24/14	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050 UJ	<0.028	<0.066	--
	12/16/14	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
	06/18/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
Duplicate	06/18/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
	12/09/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.031	<0.072	--
	06/13/16	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.05	<0.068	--
	01/13/17	MD	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.089	<0.071	--
	06/13/17	ND	<0.5	<0.5	<0.5	<1.5	--	0.28	<0.029	<0.067	--
	11/08/17	ND	<0.5	<0.5	<0.5	<1.5	--	0.071	<0.046	<0.100	--
	06/20/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.035	<0.070	--
	12/13/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.019	<0.045	<0.100	--
	06/24/19	ND	<0.2	<0.2	<0.4	<1	--	0.130 J	0.068 J	<0.100	--
	12/17/19	ND	<0.2	<0.2	<0.4	<1	--	0.040 J	<0.047	<0.100	--
	06/16/20	ND	<0.2	<0.2	<0.4	<1	--	0.082 J	**0.053 J**	<0.100	--
	11/19/20	ND	<0.2	<0.2	<0.4	<1	--	0.056 J	<0.045 * *1	<0.100	--
	06/08/21	**ND**	**<0.30**	**<0.30**	**<0.40**	**<1.4**	**--**	**0.093 J**	**<0.051**	**<0.110**	**--**
MW-206	03/08/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.048	<0.075	<0.094	--
	06/07/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.076	<0.095	0.078
	09/27/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.076	<0.095	<0.047
	11/27/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.077	<0.096	<0.24
	02/12/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	<1.00
	05/13/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.250	<0.505	<1.00
	09/04/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.240	<0.481	<1.00
Duplicate	09/04/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.240	<0.481	<1.00
	12/04/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	<1.00
Duplicate	12/04/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.236	<0.472	<1.00
	02/18/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.278	<0.556	<1.00
	05/12/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.278	<0.556	<1.00
	09/11/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.248	<0.495	<2.0
	04/13/10	ND	<0.50	<0.50	<0.50	<2.0	--	<0.050	--	--	--
	04/14/10	ND	--	--	--	--	--	--	<0.12	<0.24	<2.0
	09/22/10	ND	<0.50	<0.50	<0.50	<2.0	--	<0.050	<0.12	<0.25	<2.0
	04/27/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	--	--	<2.0
	04/28/11	ND	--	--	--	--	--	--	<0.12	<0.24	--
	09/21/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	<0.12	<0.24	--
	04/18/12	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	<0.12	<0.24	--
	10/11/12	ND	<0.50	<0.50	<0.50	<0.50	--	<0.025	0.16 [17,19,20]	<0.24	--
	04/25/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
	09/19/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.069	--
	06/23/14	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050 UJ	<0.029	<0.067	--
	12/16/14	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
	06/17/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.068	--
	12/08/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
	06/14/16	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
	01/13/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
	06/13/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
Duplicate	06/13/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.030	<0.069	--
	11/08/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.048	<0.110	--
	06/20/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
	12/13/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.019	0.050	<0.100	--
	06/25/19	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.049	<0.110	--
	12/17/19	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.046	<0.100	--
	06/16/20	ND	<0.2	<0.2	<0.2	<1	--	<0.019	<0.047	<0.10	--
	11/19/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.045 * *1	<0.100	--
	06/08/21	**ND**	**<0.30**	**<0.30**	**<0.40**	**<1.4**	**--**	**<0.019**	**<0.045**	**<0.100**	**--**
MW-207	03/08/07	ND	<0.5	<0.5	0.9	<1.5	--	<0.048	0.12	<0.095	--
Duplicate	03/08/07	ND	<0.5	<0.5	1.1	<1.5	--	<0.048	0.15	<0.095	--
	06/07/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.05	<0.077	<0.096	0.11
	09/27/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.081	<0.10	<0.47
	11/27/07	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.076	<0.095	<0.047
	02/12/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.248	<0.495	<1.00
	05/13/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.250	<0.500	<1.00
	09/04/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.238	<0.476	<1.00
	12/03/08	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.238	<0.476	<1.00
	02/18/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.248	<0.495	<1.00
	05/12/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.250	<0.500	<1.00
	09/11/09	ND	<0.500	<0.500	<0.500	<1.00	--	<0.050	<0.248	<0.495	<2.0
	04/14/10	ND	<0.50	<0.50	<0.50	<2.0	--	<0.050	<0.12	<0.24	<2.0
	09/21/10	ND	<0.50	<0.50	<0.50	<2.0	--	<0.050	<0.12	<0.24	<2.0
Duplicate	09/21/10	ND	<0.50	<0.50	<0.50	<2.0	--	0.092	<0.12	<0.25	<2.0
	04/27/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	--	--	<2.0
	04/28/11	ND	--	--	--	--	--	--	<0.12	<0.24	--
	09/21/11	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	<0.12	<0.24	--
	04/18/12	ND	<0.50	<0.50	<0.50	<1.0	--	<0.050	<0.12	<0.24	--
	10/11/12	ND	<0.50	<0.50	<0.50	<0.50		<0.025	0.15 [17,19,20]	<0.24	--
	04/25/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.068	--
	09/19/13	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
	06/23/14	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050 UJ	<0.028	<0.066	--
	12/16/14	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
	06/17/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
	12/08/15	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
	06/14/16	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.068	--
	01/13/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.029	<0.067	--
Duplicate	01/13/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.130	1.700	--
	06/13/17	ND	<0.5	<0.5	<0.5	<1.5	--	0.071	0.031	<0.067	--
	11/08/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.046	<0.110	--
Duplicate	11/08/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.046	<0.110	--
	06/20/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	<0.028	<0.066	--
	12/13/18	ND	<0.5	<0.5	<0.5	<1.5	--	<0.019	<0.046	<0.100	--
	06/25/19	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.048	<0.110	--
	12/17/19	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.046	<0.100	--
	06/16/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.048	<0.100	--
	11/18/20	ND	<0.2	<0.2	<0.4	<1	--	<0.019	<0.049 *	<0.110	--
	06/07/21	**ND**	**<0.30**	**<0.30**	**<0.40**	**<1.4**	**--**	**<0.019**	**<0.048**	**<0.110**	**--**

Appendix E
Historical Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

Monitoring Well[1]	Date Sampled	LNAPL[2]	BTEX (EPA Method 8020 or 8021B) (µg/L)				TPH (EPA Method 418.1) (mg/L)	NWTPH-Gx (mg/L)	NWTPH-D Extended[3] (mg/L)		Dissolved Lead (EPA 6000/7000 Series Method) (µg/L)
			B	T	E	X		Gasoline C_7 - C_{12}	Diesel C_{12} - C_{24}	Heavy Oil >C_{24}	
MW-209	02/16/16	ND	1.4	1.2	1.3	4.2	--	1.600	0.150	<0.067	--
	06/13/16	ND	1.5	1.3	1.6	3.7	--	0.930	0.200	<0.066	--
	09/22/16	ND	0.9	0.9	<1.1	2.9	--	0.990	0.140	<0.072	--
	01/12/17	ND	1.3	1.3	1.4	3.6	--	1.400	0.140	<0.072	--
	03/27/17	ND	1.5	1.4	1.5	3.3	--	0.920	0.190	<0.068	--
	06/16/17	ND	1.1	0.8	<0.5	2.4	--	1.300	0.730	0.230	--
	12/16/19	ND	<0.2	0.3 J	<0.4	<1	--	0.590	<0.048	<0.110	--
	03/25/20	ND	<0.2	<0.2	<0.4	<1	--	0.690	<0.10	0.05 J	--
	06/16/20	ND	<0.2	0.3 J	<0.4	<1	--	0.590	0.580	0.18 J	--
	11/17/20	ND	<0.2	0.22 J	<0.4	<1	--	0.66	0.063 J *	<0.110	--
	03/15/21	**ND**	**<0.20**	**0.47 J**	**<0.40**	**<1.4**	**--**	**0.69**	**0.083 J *1**	**<0.110**	**--**
	06/09/21	**ND**	**<0.30**	**0.32 J**	**<0.40**	**<1.4**	**--**	**0.51**	**<0.048**	**<0.110**	**--**
MW-210	02/16/16	ND	<0.5	1.1	1.4	4.7	--	2.500	8.600	1.600	--
	06/13/16	ND	<0.5	1.6	<0.5	5.1	--	2.100	3.200	0.510	--
	09/22/16	ND	1.3	1.1	1.3	4.7	--	2.100	2.300	0.390	--
	01/12/17	ND	<0.5	1.1	<0.5	<1.5	--	0.130	0.037	<0.070	--
	03/27/17	ND	<0.5	<0.5	<0.5	<1.5	--	0.220	1.500	0.320	--
Duplicate	03/27/17	ND	<0.5	<0.5	<0.5	<1.5	--	0.160	0.200	<0.066	--
	06/16/17	ND	<0.5	0.5	0.6	2.6	--	1.200	2.800	0.550	--
	12/16/19	ND	<0.2	<0.2	<0.4	<1	--	0.072 J	<0.047	<0.100	--
	03/25/20	ND	<0.2	<0.2	<0.4	<1	--	0.04 J	<0.10	<0.05	--
	06/17/20	ND	<0.2	<0.2	<0.4	<1	--	0.019 J	<0.46	<0.100	--
	09/11/20	ND	<0.2	<0.2	<0.4	<1	--	0.071 J	<0.048 *1	<0.110	--
	11/17/20	ND	<0.2	0.22 J	<0.4	<1	--	0.150 J	<0.049 *	<0.110	--
	03/15/21	**ND**	**<0.20**	**<0.20**	**<0.40**	**<1.4**	**--**	**0.038 J**	**<0.051 *1**	**<0.110**	**--**
	06/09/21	**ND**	**<0.30**	**<0.30**	**<0.40**	**<1.4**	**--**	**0.045 J**	**<0.049**	**<0.110**	**--**
MW-211	02/16/16	ND	<0.5	<0.5	<0.5	<1.5	--	0.210	0.069	<0.067	--
	06/13/16	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.084	<0.068	--
	09/22/16	ND	<0.5	<0.5	<0.5	<1.5	--	0.100	0.062	<0.069	--
	01/12/17	ND	<0.5	<0.5	<0.5	<1.5	--	0.065	0.049	<0.070	--
	03/27/17	ND	<0.5	<0.5	<0.5	<1.5	--	<0.050	0.061	<0.067	--
	06/16/17	ND	<0.5	<0.5	<0.5	<1.5	--	0.130	0.081	<0.066	--
Duplicate	06/16/17	ND	<0.5	<0.5	<0.5	<1.5	--	0.130	0.072	<0.067	--
	12/16/19	ND	<0.2	<0.2	<0.4	<1	--	0.031 J	<0.049	<0.110	--
	03/25/20	ND	<0.2	<0.2	<0.4	<1	--	0.031 J	<0.049	<0.110	--
	06/17/20	ND	<0.2	<0.2	<0.4	<1	--	0.044 J	<0.047	<0.100	--
	11/17/20	ND	<0.2	<0.2	<0.4	<1	--	0.053 J	<0.052 *	<0.120	--
	03/15/21	**ND**	**<0.20**	**<0.20**	**<0.40**	**<1.4**	**--**	**0.055 J**	**<0.051 *1**	**<0.110**	**--**
	06/09/21	**ND**	**<0.30**	**<0.30**	**<0.40**	**<1.4**	**--**	**0.052 J**	**<0.048**	**<0.110**	**--**

Notes:

[1]Monitoring well locations are shown in Figure 2.
[2]LNAPL = light nonaqueous phase liquid.
[3]For December 2000 through June 2002, samples were first analyzed without the sulfuric acid/silica gel cleanup procedure (first or only result). If analytes were detected, the sulfuric acid/silica gel cleanup procedure was performed (second result). For September 2002 and after, samples obtained from Upper Yard wells were analyzed without the sulfuric acid/silica gel cleanup procedure, and samples obtained from Elliott Avenue and Offsite Area wells were analyzed with the sulfuric acid/silica gel cleanup procedure.
[4]According to the laboratory, the sample chromatogram does not resemble the gasoline standard.
[5]According to the laboratory, sample contains diesel-range hydrocarbons that extend into the hydrocarbon range quantified as gasoline.
[6]Due to an error in the identification of two sets of samples, (MW-64 and Dup 121699), the results from the sampling date of 01/04/00 were not considered reliable. The 12/26/99 results were not reported by the laboratory and a resampling took place.
[7]Due to an extraction anomaly during the silica gel cleanup procedure, a second analytical result is not available for this sample.
[8]After review of field procedures and historic analytical results, the sample appears to have been cross-contaminated in the field or in the laboratory.
[9]BTEX and gasoline-range hydrocarbon analyses were completed outside of the recommended holding time. Results should be qualified as estimated.
[10]Samples were extracted 3 or 4 days after expiration of the recommended holding time.
[11]Results should be considered bias low or estimated due to laboratory QA/QC exception.
[12]MW-30 was not sampled between July 1989 and September 1990 because of the presence of free product.
[13]Due to an extraction anomaly, the surrogate recoveries in the WTPH-D extended analyses were outside the established control limits and the results should be considered a low estimated value, according to the laboratory.
[14]The 03/23/99 data for diesel-range hydrocarbons (20.8/14.6 mg/L) for MW-84 appeared anomalous due to field sample handling or laboratory analytical error. The well was resampled on 04/01/99.
[15]Due to a lab error, the sample extract evaporated before testing and was not analyzed with the silica gel cleanup.
[16]Due to the presence of an interferent near its retention time, the normal reporting limit was not attained for this compound. The presence of or concentration cannot be determined.
[17]The chromatographic response resembles a typical fuel pattern.
[18]Sample was reanalyzed due to a surrogate failure. The surrogates were within QC limits in the reanalysis.
[19]Instrument related QC exceeds the control limits.
[20]Compound was found in the blank and sample.
[21]The %RDP between the primary and confirmation column/detector is 40%. The lower value has been reported.

µg/L = micrograms per liter mg/L = milligrams per liter ND = not detected RAL = remedial action level -- = not tested

Shaded concentrations are greater than corresponding Remedial Action Levels. Bolded data are for the current reporting period.
NEAR = The sample was collected from the top 12 inches of the water column within the respective monitoring well.
UJ = Non-detect value was analyzed outside of hold time, but lest than two times hold time, concentration is an estimated value.
J = Concnetration is an estimated value and was analyzed outside of hold time, but lest than two times hold time.
* = LCS or LCSD is outside acceptance limits.
*1 = LCS/LCSD RPD exceeds control limits.
H = Sample was prepped or analyzed beyond the specified holding time

Appendix E
Historical Summary of Groundwater Analytical Data
Carcinogenic Polycyclic Aromatic Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

OFFSITE AREA		Carcinogenic PAHs[2,3] (µg/L)								Noncarcinogenic PAHs[2] (µg/L)								
Monitoring Well[1]	Sample Date	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Total CPAHs[4]	Acenaphthene	Acenaphthylene	Anthracene	Benzo(g,h,i)perylene	Fluoranthene	Fluorene	Naphthalene[4]	Phenanthrene	Pyrene
RAL		0.03	0.03	0.03	0.03	0.03	0.03	0.03	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MW-27	12/13/02	0.0282	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	0.0282	0.398	<0.100	<0.100	<0.100	0.149	<0.100	<0.100	<0.100	<0.100
	06/19/03	0.0639	<0.0100	<0.0100	<0.0100	<0.0100	0.0288	0.0232	0.1159	3.46	<0.100	0.226	<0.100	0.963	0.296	0.188	0.357	0.952
	12/03/03	0.0266	<0.0100	<0.0100	<0.0100	0.0195	<0.0100	<0.0100	0.0461	--	--	--	--	--	--	<0.100	--	--
	06/03/04	0.0357	<0.0100	<0.0100	<0.0100	0.0276	<0.0100	<0.0100	0.0633	2.66	<0.100	0.178	<0.100	0.962	0.348	0.821	0.299	0.826
	12/06/04	0.0286	<0.0100	<0.0100	<0.0100	0.0190	<0.0100	<0.0100	0.0476	1.57	<0.100	<0.100	<0.100	0.269	<0.100	<0.100	<0.100	0.488
	06/03/05	0.0709	0.0127	0.0157	0.0166	0.0440	<0.0100	<0.0100	0.1499	2.01	<0.100	<0.100	<0.100	0.995	<0.100	<0.100	<0.100	1.21
	12/01/05	0.0921	0.0576	0.0649	0.0393	0.0698	<0.0100	0.0444	0.3681	--	--	--	--	--	--	--	--	--
	03/08/07	<0.02	<0.02	<0.02	<0.009	<0.02	<0.02	<0.02	<0.129	--	--	--	--	--	--	--	--	--
MW-27R	09/26/07	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	--	--	--	--	--	--	0.079[5]	--	--
	11/27/07	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	0.19	--	--
MW-30	04/26/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	12/14/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
MW-61A-R	12/14/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/25/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
MW-67	06/19/03	0.0769	0.0195	<0.0100	<0.0100	0.0278	0.0849	0.0730	0.2821	1.99	<0.100	0.242	<0.100	0.602	0.106	<0.100	0.229	0.549
	12/03/03	0.0284	0.0101	<0.0100	0.0106	0.0337	<0.0100	<0.0100	0.0828	--	--	--	--	--	--	0.133	--	--
	06/03/04	0.0362	<0.0100	<0.0100	0.0132	0.0389	<0.0100	<0.0100	0.0883	1.25	<0.100	0.152	<0.100	0.839	<0.100	<0.100	<0.100	0.763
	12/06/04	0.0273	<0.0100	<0.0100	<0.0100	0.0258	<0.0100	<0.0100	0.0531	0.930	<0.100	<0.100	<0.100	0.342	<0.100	<0.100	<0.100	0.519
	03/04/05	0.0293	0.01	0.01	0.01	0.0221	0.01	0.01	0.0514	0.793	<0.100	0.148	<0.100	0.518	<0.100	<0.100	<0.100	0.511
	06/03/05	0.0323	<0.0100	<0.0100	<0.0100	0.0262	<0.0100	<0.0100	0.0585	0.714	<0.100	<0.100	<0.100	0.816	<0.100	<0.100	<0.100	0.843
MW-70R	02/16/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
Duplicate	02/16/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/14/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	<0.030	--	--
	09/22/16	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	<0.033	--	--
	01/12/17	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	--	--	--
Duplicate	01/12/17	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	--	--	--
	03/27/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/13/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	11/08/17	0.018	0.015	0.026	0.018	0.019	0.019	0.015	0.13	--	--	--	--	--	--	--	--	--
	03/26/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	--	--	--	--	--	--	--	--	--
Duplicate	03/26/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	--	--	--	--	--	--	--	--	--
	06/20/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	--	--	--	--	--	--	--	--	--
Duplicate	06/20/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	--	--	--	--	--	--	--	--	--
	09/27/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
Duplicate	09/27/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/13/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	03/25/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
Duplicate	03/25/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/25/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	09/26/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	<0.03	--	--
Duplicate	09/26/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	<0.03	--	--
	12/18/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
Duplicate	12/18/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	03/24/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
Duplicate	03/24/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	06/16/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
Duplicate	06/16/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	09/11/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.009	--	--	--	--	--	--	--	--	--
Duplicate	09/11/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.009	--	--	--	--	--	--	--	--	--
	11/18/20	<0.01	<0.01	<0.010	<0.010	<0.010	<0.02 *	<0.01	<0.008	--	--	--	--	--	--	--	--	--
Duplicate	11/18/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02 *	<0.01	<0.009	--	--	--	--	--	--	--	--	--
	03/16/21	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.021**	**<0.021**	**<0.009**	--	--	--	--	--	--	--	--	--
Duplicate	**03/16/21**	**<0.010**	**<0.010**	**<0.010**	**<0.010**	**<0.010**	**<0.020**	**<0.020**	**<0.008**	--	--	--	--	--	--	--	--	--
	06/07/21	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.022**	**<0.022**	**<0.009**	--	--	--	--	--	--	--	--	--
Duplicate	**06/07/21**	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.023**	**<0.023**	**<0.009**	--	--	--	--	--	--	--	--	--
MW-76	12/13/02	0.0247	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	0.0247	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
	06/19/03	0.0824	0.0262	<0.0100	<0.0100	0.0258	0.0718	0.0589	0.2651	0.484	<0.100	<0.100	<0.100	0.628	<0.100	<0.100	<0.100	0.342
	12/03/03	0.0194	<0.0100	0.0107	<0.0100	0.0172	<0.0100	<0.0100	0.0473	--	--	--	--	--	--	<0.100	--	--
	06/03/04	<0.0100	<0.0100	<0.0100	0.0104	<0.0100	0.0253	<0.0100	<0.0100	0.0357	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
	12/06/04	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
	06/03/05	0.0725	0.0528	0.0448	0.0452	0.0797	0.0142	0.0267	0.3359	<0.100	<0.100	<0.100	<0.100	0.482	<0.100	<0.100	<0.100	0.369
MW-200	06/07/07	<1	<1	<1	<1	<1	<1	<1	<7	22	<1	<1	<1	<1	6	31	1	<1
	07/06/07	0.01	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	0.01	20	<0.30	0.51	<0.0095	0.7	5	24	0.93	0.46
	09/26/07	0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	0.011	--	--	--	--	--	--	24[5]	--	--
Duplicate	9/26/07[D]	0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	0.011	--	--	--	--	--	--	22[5]	--	--
	11/28/07	0.012	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	--	--	--	--	--	--	31	--	--
	02/13/08	0.0126	<0.00990	<0.00990	<0.00990	0.0137	<0.00990	<0.00990	0.0263	--	--	--	--	--	--	--	--	--
	05/13/08	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Filtered	05/13/08	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	--	--	--	--	--	--	--	--	--
	09/03/08	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
Filtered	09/03/08	<0.0476	<0.0476	<0.0476	<0.0476	<0.0476	<0.0476	<0.0476	<0.0476	--	--	--	--	--	--	--	--	--
	12/04/08	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
Filtered	12/04/08	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	--	--	--	--	--	--	--	--	--
	02/18/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Filtered	02/18/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
	05/13/09	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	--	--	--	--	--	--	--	--	--
Filtered	05/13/09	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	--	--	--	--	--	--	--	--	--
	09/11/09	<0.0111	<0.0220	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0220	--	--	--	--	--	--	--	--	--

Appendix E
Historical Summary of Groundwater Analytical Data
Carcinogenic Polycyclic Aromatic Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

OFFSITE AREA		Carcinogenic PAHs[2,3] (µg/L)								Noncarcinogenic PAHs[2] (µg/L)								
Monitoring Well[1]	Sample Date	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Total CPAHs[4]	Acenaphthene	Acenaphthylene	Anthracene	Benzo(g,h,i)perylene	Fluoranthene	Fluorene	Naphthalene[4]	Phenanthrene	Pyrene
RAL		0.03	0.03	0.03	0.03	0.03	0.03	0.03	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MW-200 (continued) Filtered	09/11/09	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	--	--	--	--	--	--	--	--	--
	04/14/10	<0.0099	<0.020	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.020	--	--	--	--	--	--	--	--	--
Filtered	04/14/10	<0.0099	<0.020	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.020	--	--	--	--	--	--	--	--	--
	09/22/10	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	--	--	--	--	--	--	--	--	--
Filtered	09/22/10	<0.0099	<0.020	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.020	--	--	--	--	--	--	--	--	--
	04/26/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	17	0.26	0.77	<0.094	1.3	5.5	13	4.7	0.88
	04/26/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	13	0.22	0.24	<0.094	<0.094	3.1	11	1.5	<0.094
Original	9/22/11 [9]	<0.0094	<0.019	<0.0094	<0.0094	<0.0094	<0.0094	<0.0094	<0.19	2.5	0.26	0.16	<0.0094	0.043	2.5	0.70	1.1	0.039
Original Duplicate	9/22/11[D]	0.010	<0.020	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	0.010	19	0.19	1.1	<0.0099	1.4	6.6	8.50	4.7	1.0
Re-Analysis	9/22/11[7]	<0.0094	<0.019	<0.0094	<0.0094	<0.0094	<0.0094	<0.0094	<0.019	2.6	0.25	0.16	<0.0094	0.045	2.6	0.80	1.3	0.042
Filtered	9/22/11[9]	<0.0094	<0.019	<0.0094	<0.0094	<0.0094	<0.0094	<0.0094	<0.019	12	0.12	0.57	<0.0094	0.69	2.8	6.60	2.5	0.52
Duplicate Filtered	9/22/11[D]	<0.0098	<0.020	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.020	14	0.15	0.57	<0.0098	0.74	3.6	7.00	3.0	0.56
Re-Analysis Filtered	9/22/11[7]	<0.0094	<0.019	<0.0094	<0.0094	<0.0094	<0.0094	<0.0094	<0.019	15	0.16	0.61	<0.0094	0.76	4.0	6.80	3.5	0.57
	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	24 [DL]	0.28	0.94	<0.019	1.4	7.8	18 [DL]	5.4	1.0
Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	5.5	0.054	0.046	<0.019	<0.019	0.085	10 [DL]	0.036	<0.019
	10/11/12	0.01	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	0.01	23	0.23	0.92	<0.0095	1.00	4.4	8.6	4.4	0.73
Filtered	10/11/12	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	14	0.093	0.07	<0.0095	<0.0095	0.73	5.5	0.0099	<0.0095
	04/25/13	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	--	--	--	--	--	--	--	--	--
	09/19/13	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	--	--	--	--	--	--	--	--	--
	06/24/14	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	12/16/14	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	--	--	--	--	--	--	--	--	--
	06/18/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	12/08/15	0.017	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.017	--	--	--	--	--	--	--	--	--
	06/14/15	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	--	--	--	--	--	--	8.36	--	--
	01/13/17	0.012	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.008	--	--	--	--	--	--	--	--	--
	06/13/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	11/08/17	0.064	0.037	0.11	0.096	0.072	0.081	0.088	0.548	--	--	--	--	--	--	--	--	--
	06/20/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/13/18	0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	0.010	--	--	--	--	--	--	--	--	--
	06/25/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/18/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/16/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	11/19/20	0.011 J	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.009	--	--	--	--	--	--	--	--	--
	06/07/21	**<0.010**	**<0.010**	**<0.010**	**<0.010**	**<0.010**	**<0.021**	**<0.021**	**<0.009**	--	--	--	--	--	--	--	--	--
MW-201	06/07/07	<1	<1	<1	<1	<1	<1	<1	<1	6	<1	<1	<1	<1	2	1	<1	<1
	07/06/07	0.027	0.014	0.017	<0.0096	0.02	<0.0096	<0.0096	0.078	6.7	<0.10	0.52	<0.0096	0.83	2	2.6	0.3	0.72
	09/27/07	0.018	<0.011	<0.011	<0.011	0.027	<0.011	<0.011	0.045	--	--	--	--	--	--	2.3 [5]	--	--
	11/27/07	0.016	<0.0095	<0.0095	<0.0095	0.023	<0.0095	<0.0095	0.039	--	--	--	--	--	--	0.99	--	--
	02/12/08	0.0179	0.0584	<0.0490	<0.0490	0.0210	<0.00980	<0.00980	0.0973	--	--	--	--	--	--	--	--	--
	05/14/08	0.051	<0.0472	<0.0472	<0.0472	0.0756	<0.0472	<0.0472	0.1266	--	--	--	--	--	--	--	--	--
Filtered	05/14/08	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	--	--	--	--	--	--	--	--	--
	09/05/08	0.0243	<0.00962	<0.00962	<0.00962	0.0175	<0.00962	<0.00962	0.0418	--	--	--	--	--	--	--	--	--
Filtered	09/05/08	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	--	--	--	--	--	--	--	--	--
	12/05/08	0.0247	<0.00980	<0.00980	<0.00980	0.0268	<0.00980	<0.00980	0.0515	--	--	--	--	--	--	--	--	--
Filtered	12/05/08	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	--	--	--	--	--	--	--	--	--
	02/17/09	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
Filtered	02/17/09	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	--	--	--	--	--	--	--	--	--
	05/13/09	0.0129	<0.0100	<0.0100	<0.0100	0.0191	<0.0100	<0.0100	0.0320	--	--	--	--	--	--	--	--	--
Filtered	05/13/09	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	--	--	--	--	--	--	--	--	--
	09/11/09	0.021	<0.0200	<0.0100	<0.0100	0.025	<0.0100	<0.0100	0.0460	--	--	--	--	--	--	--	--	--
Filtered	09/11/09	<0.0100	<0.0220	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0220	--	--	--	--	--	--	--	--	--
	04/14/10	0.014	<0.020	<0.0099	<0.0099	0.019	<0.0099	<0.0099	0.033	--	--	--	--	--	--	--	--	--
Filtered	04/14/10	<0.0099	<0.020	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.020	--	--	--	--	--	--	--	--	--
	09/22/10	0.026	<0.020	<0.0099	<0.0099	0.030	<0.0099	<0.0099	0.056	--	--	--	--	--	--	--	--	--
Filtered	09/22/10	<0.0098	<0.020	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.020	--	--	--	--	--	--	--	--	--
	04/26/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	7.3	0.10	0.41	<0.094	1.2	1.2	0.25	0.50	0.97
Filtered	04/26/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	5.5	0.12	<0.094	<0.094	<0.094	0.59	0.22	<0.094	<0.094
Original	9/22/11 [8,9]	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	8.3	0.10	0.80	<0.094	1.5	1.8	0.40	0.94	1.3
Original Filtered	9/22/11 [9]	0.014	<0.019	<0.0094	<0.0094	0.014	<0.0094	<0.0094	0.028	6.3	0.077	0.37	<0.0094	0.63	1.1	0.33	0.55	0.52
Re-Analysis Filtered	9/22/11[7]	0.017	<0.019	<0.0094	<0.0094	0.017	<0.0094	<0.0094	0.032	7.9	0.072	0.47	<0.0094	0.82	1.3	0.48	0.74	0.66
	04/18/12	0.025	<0.0096	<0.019	<0.019	0.021	<0.019	<0.019	0.046	8.2	0.11	0.44	<0.019	1.1	1.3	0.2	0.51	0.85
Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	1.4	0.022	0.054	<0.019	<0.019	<0.019	0.098	<0.019	<0.019
	10/11/12	0.029	<0.019	<0.0095	<0.0095	0.027	<0.0095	<0.0095	0.056	9.7	0.11	0.6	<0.0095	1.1	0.92	0.27	0.53	1.0
Filtered	10/11/12	<0.019	<0.038	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	3.9	0.043	0.12	<0.019	<0.019	0.12	0.19	<0.019	<.019
	04/25/13	0.022	<0.010	<0.010	<0.010	0.026	<0.010	<0.010	0.048	--	--	--	--	--	--	--	--	--
	09/19/13	0.02	<0.010	<0.010	<0.010	0.027	<0.010	<0.010	0.047	--	--	--	--	--	--	--	--	--
	06/23/14	0.032	<0.010	<0.010	<0.010	0.034	<0.010	<0.010	0.066	--	--	--	--	--	--	--	--	--
	12/16/14	0.016	<0.010	<0.010	<0.010	0.021	<0.010	<0.010	0.037	--	--	--	--	--	--	--	--	--
	06/18/15	0.034	0.025	0.029	<0.010	0.029	<0.010	0.023	0.140	--	--	--	--	--	--	--	--	--
	12/08/15	0.029	0.011	0.013	<0.010	0.030	<0.010	0.011	0.094	--	--	--	--	--	--	--	--	--
Duplicate	12/08/15	0.022	<0.010	<0.010	<0.010	0.022	<0.010	<0.010	0.044	--	--	--	--	--	--	--	--	--
	06/14/16	0.030	<0.010	0.014	<0.010	0.032	<0.010	<0.010	0.076	--	--	--	--	--	--	0.863	--	--
	01/13/17	0.017	<0.010	<0.010	<0.010	0.017	<0.010	<0.010	0.009	--	--	--	--	--	--	--	--	--
	06/13/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	11/08/17	0.018	<0.010	<0.010	<0.010	0.019	<0.010	<0.010	0.027	--	--	--	--	--	--	--	--	--
	06/20/18	0.010	<0.01	<0.01	<0.01	0.010	<0.02	<0.01	0.020	--	--	--	--	--	--	--	--	--
	12/13/18	0.020	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	0.020	--	--	--	--	--	--	--	--	--
	06/25/19	0.01 J	<0.01	<0.01	<0.01	0.02 J	<0.02	<0.01	0.02 J	--	--	--	--	--	--	--	--	--

Appendix E
Historical Summary of Groundwater Analytical Data
Carcinogenic Polycyclic Aromatic Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

OFFSITE AREA		Carcinogenic PAHs[2,3] (µg/L)								Noncarcinogenic PAHs[2] (µg/L)								
Monitoring Well[1]	Sample Date	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Total CPAHs[4]	Acenaphthene	Acenaphthylene	Anthracene	Benzo(g,h,i)perylene	Fluoranthene	Fluorene	Naphthalene[4]	Phenanthrene	Pyrene
RAL		0.03	0.03	0.03	0.03	0.03	0.03	0.03	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MW-201 (continued)	12/18/19	<0.01	0.02 J	0.02 J	<0.01	<0.01	<0.02	0.03 J	0.07 J	--	--	--	--	--	--	--	--	--
	06/16/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	0.080	--	--	--	--	--	--	--	--	--
	11/18/20	<0.01	<0.01	<0.01	<0.01	0.012 J	<0.02 *	<0.01	<0.009	--	--	--	--	--	--	--	--	--
	06/08/21	**<0.010**	**<0.010**	**<0.010**	**<0.010**	**<0.010**	**<0.021**	**<0.021**	**<0.009**	--	--	--	--	--	--	--	--	--
MW-202	06/07/07	<1	<1	<1	<1	<1	<1	<1	<7	2	<1	<1	<1	1	<1	<1	2	1
	07/06/07	0.05	0.014	0.016	<0.0097	0.049	<0.0097	<0.0097	0.129	0.27	<0.025	0.22	<0.0097	0.66	0.073	0.27	0.15	0.53
	09/27/07	0.042	<0.010	<0.010	<0.010	0.040	<0.010	<0.010	0.082	--	--	--	--	--	--	0.18 [5]	--	--
	11/26/07	0.043	<0.010	<0.010	<0.010	0.036	<0.010	<0.010	0.079	--	--	--	--	--	--	<0.010	--	--
Filtered	11/26/07	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	0.057	--	--
	02/12/08	0.0457	<0.00990	<0.00990	0.0184	0.0444	<0.00990	<0.00990	0.1085	--	--	--	--	--	--	--	--	--
Filtered	02/12/08	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	--	--	--	--	--	--	--	--	--
	05/13/08	0.0406	<0.00943	0.0116	0.0149	0.0432	<0.00943	<0.00943	0.1103	--	--	--	--	--	--	--	--	--
Filtered	05/13/08	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	--	--	--	--	--	--	--	--	--
	09/04/08	0.0502	<0.00962	<0.00962	<0.00962	0.0482	<0.00962	<0.00962	0.0984	--	--	--	--	--	--	--	--	--
Filtered	09/04/08	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	--	--	--	--	--	--	--	--	--
	12/04/08	0.0286	<0.0100	<0.0100	<0.0100	0.0308	<0.0100	<0.0100	0.0594	--	--	--	--	--	--	--	--	--
Filtered	12/04/08	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
	02/18/09	0.0181	<0.00980	<0.00980	<0.00980	0.0222	<0.00980	<0.00980	0.0403	--	--	--	--	--	--	--	--	--
Filtered	02/18/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
	05/13/09	0.0146	<0.00943	<0.00943	<0.00943	0.0160	<0.00943	<0.00943	0.0306	--	--	--	--	--	--	--	--	--
Filtered	05/13/09	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	--	--	--	--	--	--	--	--	--
	09/11/09	0.0490	<0.0200	0.0110	<0.0100	0.0470	<0.0100	<0.0100	0.1070	--	--	--	--	--	--	--	--	--
Filtered	09/11/09	<0.0100	<0.0200	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0200	--	--	--	--	--	--	--	--	--
	04/14/10	0.013	<0.020	<0.0099	<0.0099	0.013	<0.0099	<0.0099	0.026	--	--	--	--	--	--	--	--	--
Filtered	04/14/10	<0.0099	<0.020	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.020	--	--	--	--	--	--	--	--	--
	09/22/10	0.041	<0.020	0.012	<0.010	0.043	<0.010	<0.010	0.096	--	--	--	--	--	--	--	--	--
Filtered	09/22/10	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	--	--	--	--	--	--	--	--	--
	04/27/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	4.8	<0.094	<0.094	<0.094	0.55	0.36	2.9	<0.094	0.42
Filtered	04/27/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	3.6	<0.094	<0.094	<0.094	<0.094	0.19	2.6	<0.094	<0.094
	9/21/11 [8,9]	0.015	<0.019	<0.0094	<0.0094	0.013	<0.0094	<0.0094	0.028	0.35	<0.0094	0.021	<0.0094	0.17	0.019	0.16	0.013	0.19
	9/21/11 [9]	<0.0094	<0.019	<0.0094	<0.0094	<0.0094	<0.0094	<0.0094	<0.019	0.28	<0.0094	0.0094	<0.0094	0.059	0.016	0.13	<0.0094	0.065
Re-Analysis Filtered	9/21/11 [7]	<0.0094	<0.019	<0.0094	<0.0094	<0.0094	<0.0094	<0.0094	<0.019	0.35	<0.0094	0.031	<0.0094	0.13	0.026	0.12	0.016	0.14
	04/18/12	0.029	<0.0096	<0.019	<0.019	0.031	<0.019	<0.019	0.06	6.5	0.058	0.051	<0.019	0.54	0.24	1.8	0.11	0.43
Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	0.40	<0.019	<0.019	<0.019	<0.019	<0.019	0.76	<0.019	<0.019
	10/11/12	0.027	<0.019	<0.0095	<0.0095	0.02	<0.0095	<0.0095	0.02	0.82	0.011	0.068	<0.0095	0.23	0.032	0.075	0.016	0.26
Filtered	10/11/12	<0.019	<0.038	<0.019	<0.019	<0.019	<0.019	<0.019	<0.039	0.07	<0.019	<0.019	<0.019	<0.019	<0.019	0.03	<0.019	<0.019
Filtered	10/11/12	<0.019	<0.038	<0.019	<0.019	<0.019	<0.019	<0.019	<0.039	0.07	<0.019	<0.019	<0.019	<0.019	<0.019	0.03	<0.019	<0.019
	04/25/13	0.019	<0.010	<0.010	<0.010	0.017	<0.010	<0.010	0.036	--	--	--	--	--	--	--	--	--
	09/19/13	0.025	<0.010	<0.010	<0.010	0.026	<0.010	<0.010	0.051	--	--	--	--	--	--	--	--	--
	12/16/14	0.018	<0.010	<0.010	<0.010	0.014	<0.010	<0.010	0.032	--	--	--	--	--	--	--	--	--
	06/18/15	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.013	--	--	--	--	--	--	--	--	--
	12/08/15	0.025	<0.011	<0.011	<0.011	0.023	<0.011	<0.011	0.048	--	--	--	--	--	--	--	--	--
	06/14/16	0.014	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	0.014	--	--	--	--	--	--	0.98	--	--
	01/13/17	0.023	<0.011	<0.011	<0.011	0.017	<0.011	<0.011	0.023	--	--	--	--	--	--	--	--	--
	06/13/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	11/08/17	<0.010	<0.010	<0.010	<0.010	<0.010	0.021	<0.010	0.021	--	--	--	--	--	--	--	--	--
	06/20/18	0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	0.01	--	--	--	--	--	--	--	--	--
	12/13/18	0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	0.01	--	--	--	--	--	--	--	--	--
Duplicate	12/13/18	0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/25/19	0.03 J	<0.01	<0.01	<0.01	0.02 J	<0.02	<0.01	0.02 J	--	--	--	--	--	--	--	--	--
	12/17/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/16/20	0.021 J	<0.01	<0.01	<0.01	0.015 J	<0.02	<0.01	<0.231	--	--	--	--	--	--	--	--	--
	11/18/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02 *	<0.01	<0.009	--	--	--	--	--	--	--	--	--
	06/08/21	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.021**	**<0.021**	**<0.009**	--	--	--	--	--	--	--	--	--
MW-203	06/07/07	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	07/06/07	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	0.62	<0.0096	0.12	<0.0096	0.16	0.047	0.052	0.013	0.11
	09/28/07	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.07	--	--	--	--	--	--	0.13	--	--
	11/27/07	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	<0.010	--	--
	02/12/08	0.0127	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	0.0127	--	--	--	--	--	--	--	--	--
Duplicate	02/12/08	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	--	--	--	--	--	--	--	--	--
	05/14/08	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	--	--	--	--	--	--	--	--	--
Filtered	05/14/08	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	--	--	--	--	--	--	--	--	--
	09/03/08	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	--	--	--	--	--	--	--	--	--
Filtered	09/03/08	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	--	--	--	--	--	--	--	--	--
	12/04/08	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	--	--	--	--	--	--	--	--	--
Filtered	12/04/08	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	--	--	--	--	--	--	--	--	--
	02/17/09	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
Filtered	02/17/09	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
	05/13/09	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
Filtered	05/13/09	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
	09/11/09	<0.0110	<0.0220	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0220	--	--	--	--	--	--	--	--	--
Filtered	09/11/09	<0.0110	<0.0220	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0220	--	--	--	--	--	--	--	--	--
	04/14/10	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	--	--	--	--	--	--	--	--	--
Filtered	04/14/10	<0.0097	<0.019	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.019	--	--	--	--	--	--	--	--	--
	09/22/10	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	--	--	--	--	--	--	--	--	--
Filtered	09/22/10	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--

Appendix E
Historical Summary of Groundwater Analytical Data
Carcinogenic Polycyclic Aromatic Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

OFFSITE AREA		Carcinogenic PAHs[2,3] (µg/L)								Noncarcinogenic PAHs[2] (µg/L)								
Monitoring Well[1]	Sample Date	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Total CPAHs[4]	Acenaphthene	Acenaphthylene	Anthracene	Benzo(g,h,i)perylene	Fluoranthene	Fluorene	Naphthalene[4]	Phenanthrene	Pyrene
RAL		0.03	0.03	0.03	0.03	0.03	0.03	0.03	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MW-203 (continued)	04/27/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	0.44	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094
Filtered	04/27/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	0.45	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094
	9/21/11[9]	<0.0098	<0.020	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.020	0.34	<0.0098	0.012	<0.0098	0.039	0.0098	0.011	<0.0098	0.079
Re-Analysis	9/21/11[7]	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	0.51	<0.010	0.022	<0.010	0.047	0.017	0.02	<0.010	0.10
Filtered	9/21/11[9]	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	0.34	<0.010	0.011	<0.010	0.023	0.011	0.016	<0.010	0.043
Re-Analysis Filtered	9/21/11[7]	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	0.31	<0.0095	0.017	<0.0095	0.020	0.013	0.0095	<0.0095	0.039
	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	0.42	<0.019	0.028	<0.019	0.042	<0.019	<0.019	<0.019	0.076
Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019
	10/11/12	<0.0095	<0.020	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.020	0.23	<0.0098	0.035	<0.0098	0.041	0.011	0.013	0.01	0.10
Filtered	10/11/12	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	0.056	<0.0095	0.019	<0.0095	<0.0095	<0.0095	0.028	<0.0095	<0.0095
	04/25/13	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	--	--	--
	09/19/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/24/14	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
Duplicate	06/24/14	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	12/16/14	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/18/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	12/07/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/15/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	0.128	--	--
Duplicate	06/15/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	0.099	--	--
	01/13/17	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	--	--	--
	06/13/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	11/08/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/20/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/13/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/25/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/17/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/16/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	11/19/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.009	--	--	--	--	--	--	--	--	--
	06/08/21	**<0.010**	**<0.010**	**<0.010**	**<0.010**	**<0.010**	**<0.020**	**<0.020**	**<0.008**	--	--	--	--	--	--	--	--	--
MW-204	06/07/07	<1	<1	<1	<1	<1	<1	<1	<7	5	<1	<1	<1	<1	3	<1	<1	<1
	07/06/07	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	3.3	<0.30	0.19	<0.0095	0.06	2.7	0.45	1.1	0.061
Duplicate	07/06/07	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	3.3	<0.30	0.18	<0.0096	0.058	2.7	0.44	1	0.064
	09/28/07	0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	--	--	--	--	--	--	0.84	--	--
	11/27/07	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	<0.010	--	--
	02/12/08	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	<0.00971	--	--	--	--	--	--	--	--	--
	05/14/08	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Filtered	05/14/08	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
	09/03/08	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	--	--	--	--	--	--	--	--	--
Filtered	09/03/08	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	--	--	--	--	--	--	--	--	--
	12/04/08	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	--	--	--	--	--	--	--	--	--
Filtered	12/04/08	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
	02/17/09	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	--	--	--	--	--	--	--	--	--
Duplicate	02/17/09	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	--	--	--	--	--	--	--	--	--
Filtered	02/17/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Duplicate	02/17/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
	05/13/09	<0.0100	<0.0100	<0.0100	<0.0100	0.0193	<0.0100	<0.0100	0.0193	--	--	--	--	--	--	--	--	--
Duplicate	05/13/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Filtered	05/13/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Duplicate	05/13/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
	09/11/09	<0.0100	<0.0200	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0200	--	--	--	--	--	--	--	--	--
Duplicate	09/11/09	<0.0100	<0.0200	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0200	--	--	--	--	--	--	--	--	--
Filtered	09/11/09	<0.0110	<0.0220	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0220	--	--	--	--	--	--	--	--	--
Duplicate	09/11/09	<0.0096	<0.0190	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0190	--	--	--	--	--	--	--	--	--
	04/14/10	<0.0097	<0.019	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.019	--	--	--	--	--	--	--	--	--
Duplicate	04/14/10	<0.0099	<0.020	<0.0099	<0.0099	0.0099	<0.0099	<0.0099	0.0099	--	--	--	--	--	--	--	--	--
Filtered	04/14/10	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	--	--	--	--	--	--	--	--	--
Duplicate	04/14/10	<0.0099	<0.020	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.020	--	--	--	--	--	--	--	--	--
	09/22/10	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	--	--	--	--	--	--	--	--	--
Filtered	09/22/10	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	--	--	--	--	--	--	--	--	--
	04/26/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	2.6	0.33	0.13	<0.094	<0.094	2.7	1.2	1.1	<0.094
Duplicate	04/26/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	2.5	0.30	0.14	<0.094	<0.094	2.6	1.3	1.0	<0.094
Filtered	04/26/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	2.6	0.28	<0.094	<0.094	<0.094	2.0	1.1	0.43	<0.094
Duplicate	04/26/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	2.1	0.23	0.094	<0.094	<0.094	1.7	1.1	0.53	<0.094
Original	09/22/11[9]	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	1.7	0.14	0.16	<0.010	0.039	1.6	0.63	1.0	0.034
Duplicate	09/22/11	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	2.3	0.15	0.13	<0.010	0.058	2.2	0.68	0.59	0.054
Re-Analysis	09/22/11[7]	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	2.4	0.19	0.13	<0.010	0.041	2.1	0.61	0.83	0.042
Filtered	09/22/11[9]	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	1.8	0.14	0.067	<0.010	0.018	1.4	0.52	0.72	0.014
Duplicate Filtered	09/22/11	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	2.1	0.17	0.079	<0.010	<0.010	1.6	0.65	0.75	<0.010
Re-Analysis Filtered	09/22/11[7]	<0.0098	<0.020	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.020	1.6	0.13	0.073	<0.0098	0.015	1.4	0.36	0.54	0.012
NEAR	09/22/11[9]	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	21	0.21	0.98	<0.010	1.3	4.7	9.6	4.1	0.94
NEAR Re-Analysis	09/22/11[7]	<0.0096	<0.019	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.019	18	0.21	0.83	<0.0096	1.2	6.0	5.7	4.6	0.89
NEAR Filtered	09/22/11	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	1.7	0.14	0.076	<0.010	0.018	1.3	0.53	0.68	0.013

Appendix E
Historical Summary of Groundwater Analytical Data
Carcinogenic Polycyclic Aromatic Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

OFFSITE AREA		Carcinogenic PAHs[2,3] (µg/L)								Noncarcinogenic PAHs[2] (µg/L)								
Monitoring Well[1]	Sample Date	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Total CPAHs[4]	Acenaphthene	Acenaphthylene	Anthracene	Benzo(g,h,i)perylene	Fluoranthene	Fluorene	Naphthalene[4]	Phenanthrene	Pyrene
RAL		0.03	0.03	0.03	0.03	0.03	0.03	0.03	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MW-204 (continued)	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	3.3	0.37	0.21	<0.019	0.05	3.2	0.34	1.1	0.032
Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	2.8	0.19	0.10	<0.019	1.2	<0.019	0.28	<0.019	<0.019
Duplicate	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	3.8	0.41	0.19	<0.019	0.047	3.6	0.37	1.2	0.037
Duplicate Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	0.82	0.032	0.071	<0.019	<0.019	0.019	0.16	<0.019	<0.019
NEAR	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	3.3	0.36	0.19	<0.019	0.048	3.0	0.33	1.1	0.03
NEAR Duplicate	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	3.2	0.35	0.18	<0.019	0.045	2.9	0.31	1.2	0.037
NEAR Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	3.2	0.30	0.085	<0.019	<0.019	1.7	0.76	0.023	<0.019
NEAR Duplicate Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	0.91	0.053	0.084	<0.019	<0.019	0.14	0.21	<0.019	<0.019
	10/12/12	<0.095	<0.19	<0.095	<0.095	<0.095	<0.095	<0.095	<0.019	2.5	0.29	0.23	<0.095	<0.095	2.4	0.94	1.1	<0.095
Filtered	10/12/12	<0.095	<0.19	<0.095	<0.095	<0.095	<0.095	<0.095	<0.019	0.98	0.11	<0.095	<0.095	<0.095	0.34	0.57	<0.095	<0.095
Duplicate	10/12/12	<0.095	<0.19	<0.095	<0.095	<0.095	<0.095	<0.095	<0.019	2.5	0.29	0.21	<0.095	<0.095	2.2	0.89	1.0	<0.095
Duplicate Filtered	10/12/12	<0.095	<0.19	<0.095	<0.095	<0.095	<0.095	<0.095	<0.019	2.2	0.24	<0.095	<0.095	<0.095	1.7	1.0	0.17	<0.095
NEAR	10/12/12	<0.095	<0.19	<0.095	<0.095	<0.095	<0.095	<0.095	<0.019	2.0	0.23	0.21	<0.095	<0.095	1.9	0.76	1.0	<0.095
NEAR Filtered	10/12/12	<0.095	<0.19	<0.095	<0.095	<0.095	<0.095	<0.095	<0.019	0.98	0.1	0.097	<0.095	<0.095	0.33	0.63	<0.095	<0.095
	04/26/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
Duplicate	04/26/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	09/19/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/24/14	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	12/16/14	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
Duplicate	12/16/14	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/18/15	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	--	--	--
	12/09/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	01/15/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
Duplicate	01/15/16	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	--	--	--	--	--	--	--	--	--
	06/13/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	0.15	--	--
	01/13/17	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	--	--	--
	06/13/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	11/08/17	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	--	--	--
	06/20/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/13/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/24/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
Duplicate	06/24/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/17/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/16/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	11/19/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.009	--	--	--	--	--	--	--	--	--
	06/08/21	**<0.010**	**<0.010**	**<0.010**	**<0.010**	**<0.010**	**<0.021**	**<0.021**	**<0.009**	--	--	--	--	--	--	--	--	--
MW-205	06/07/07	<1	<1	<1	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1
	07/06/07	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	3.4	0.022	<0.0096	<0.0096	<0.0096	<0.0096	0.041	<0.0096	0.01
	09/28/07	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	0.050	--	--
	11/27/07	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	0.022	--	--
	02/12/08	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	<0.0111	--	--	--	--	--	--	--	--	--
	05/14/08	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	--	--	--	--	--	--	--	--	--
Filtered	05/14/08	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	--	--	--	--	--	--	--	--	--
	09/03/08	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
Filtered	09/03/08	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
	12/05/08	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
Filtered	12/05/08	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
	02/17/09	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
Filtered	02/17/09	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
	05/13/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Filtered	05/13/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
	09/11/09	<0.0110	<0.0220	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0220	--	--	--	--	--	--	--	--	--
Filtered	09/11/09	<0.0110	<0.0220	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0220	--	--	--	--	--	--	--	--	--
	04/14/10	<0.013	<0.026	<0.013	<0.013	<0.013	<0.013	<0.013	<0.026	--	--	--	--	--	--	--	--	--
Filtered	04/14/10	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	--	--	--	--	--	--	--	--	--
	09/22/10	<0.0094	<0.019	<0.0094	<0.0094	<0.0094	<0.0094	<0.0094	<0.019	--	--	--	--	--	--	--	--	--
Filtered	09/22/10	<0.0099	<0.020	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.020	--	--	--	--	--	--	--	--	--
	04/26/11									LNAPL								
Filtered	04/26/11									LNAPL								
	09/22/11	<0.0099	<0.020	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.020	1.6	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	0.016	<0.0099	0.015
Filtered	09/22/11	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	1.1	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	<0.010
NEAR	09/22/11	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	1.5	<0.010	<0.010	<0.010	<0.010	<0.010	0.015	<0.010	0.011
NEAR Filtered	09/22/11	<0.0098	<0.020	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.020	1.4	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	0.015	<0.0098	<0.0098
	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	1.6	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019
Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	0.16	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019
Duplicate	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	1.9	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019
Duplicate Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	0.32	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019
NEAR	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	1.6	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019
NEAR Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	0.8	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019
	10/12/12	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	1.6	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	0.015	0.0095	<0.0095
Filtered	10/12/12	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	0.22	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	0.013	0.0095	<0.0095
Duplicate	10/12/12	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	1.5	0.015	0.011	<0.0095	<0.0095	0.014	0.017	<0.0095	0.0099

Appendix E
Historical Summary of Groundwater Analytical Data
Carcinogenic Polycyclic Aromatic Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

OFFSITE AREA		Carcinogenic PAHs[2,3] (µg/L)								Noncarcinogenic PAHs[2] (µg/L)								
Monitoring Well[1]	**Sample Date**	**Benzo(a)anthracene**	**Benzo(a)pyrene**	**Benzo(b)fluoranthene**	**Benzo(k)fluoranthene**	**Chrysene**	**Dibenzo(a,h)anthracene**	**Indeno(1,2,3-cd)pyrene**	**Total CPAHs**[4]	**Acenaphthene**	**Acenaphthylene**	**Anthracene**	**Benzo(g,h,i)perylene**	**Fluoranthene**	**Fluorene**	**Naphthalene**[4]	**Phenanthrene**	**Pyrene**
RAL		**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
MW-205 (continued) Duplicate Filtered	10/12/12	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	0.12	<0.0095	<0.0095	<00.095	<0.0095	<0.0095	0.016	<0.0095	<0.0095
NEAR	10/12/12	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	1.6	0.017	0.012	<0.0095	<0.0095	0.017	0.016	0.018	0.012
NEAR Filtered	10/12/12	<0.019	<0.038	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	0.12	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019
	04/26/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	09/19/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
Duplicate	09/19/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/24/14	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	12/16/14	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/18/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
Duplicate	06/18/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	12/09/15	<0.010	0.012	0.011	<0.010	<0.010	<0.010	0.022	0.045	--	--	--	--	--	--	--	--	--
	06/13/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	<0.031	--	--
	01/13/17	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	--	--	--
	06/13/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	11/08/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/20/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/13/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/24/19	<0.01	<0.01	<0.01	<0.01	0.02 J	<0.02	<0.01	0.02 J	--	--	--	--	--	--	--	--	--
	12/17/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/16/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	11/19/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.009	--	--	--	--	--	--	--	--	--
	06/08/21	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.022**	**<0.022**	**<0.009**	--	--	--	--	--	--	--	--	--
MW-206	06/07/07	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	07/06/07	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	1.9	<0.0096	0.069	<0.0096	0.087	0.14	0.19	0.51	0.036
	09/27/07	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	0.063[5]	--	--
	11/27/07	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	0.031	--	--
	02/12/08	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
	05/13/08	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
Filtered	05/13/08	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
	09/04/08	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
Duplicate[6]	09/04/08	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Filtered	09/04/08	0.0132	<0.00952	<0.00952	0.0107	0.0134	0.0638	0.0125	0.1136	--	--	--	--	--	--	--	--	--
Duplicate	09/04/08	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	--	--	--	--	--	--	--	--	--
	10/01/08	<0.0102	<0.0102	<0.0102	<0.0102	<0.0102	<0.0102	<0.0102	<0.0102	--	--	--	--	--	--	--	--	--
Filtered	10/01/08	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	--	--	--	--	--	--	--	--	--
	12/04/08	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	--	--	--	--	--	--	--	--	--
Filtered	12/04/08	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
Duplicate	12/04/08	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	<0.00962	--	--	--	--	--	--	--	--	--
Filtered	12/04/08	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	--	--	--	--	--	--	--	--	--
	02/18/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Filtered	02/18/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
	05/12/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Filtered	05/12/09	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125	<0.0125	--	--	--	--	--	--	--	--	--
	09/11/09	<0.0100	<0.0200	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0200	--	--	--	--	--	--	--	--	--
Filtered	09/11/09	<0.0110	<0.0220	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0220	--	--	--	--	--	--	--	--	--
	04/14/10	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	--	--	--	--	--	--	--	--	--
Filtered	04/14/10	<0.0098	<0.020	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.020	--	--	--	--	--	--	--	--	--
	09/22/10	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	--	--	--	--	--	--	--	--	--
Filtered	09/22/10	<0.0099	<0.020	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.020	--	--	--	--	--	--	--	--	--
	04/27/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	0.14	<0.094	<0.094	<0.094	0.21	<0.094	<0.094	<0.094	0.15
Filtered	04/27/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	0.12	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094	<0.094
	09/21/11	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	0.014	<0.010	<0.010	<0.010	0.063	<0.010	0.049	<0.010	0.046
Filtered	09/21/11	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	0.047	<0.010	<0.010	<0.010	0.011	<0.010	0.054	<0.010	0.01
	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	0.18	<0.019	0.042	<0.019	0.31	<0.019	0.022	<0.019	0.19
Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019
	10/11/12	0.011	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	0.011	0.21	<0.0095	0.066	<0.0095	0.37	0.018	0.0098	0.014	0.29
Filtered	10/11/12	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	0.018	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	0.011	<0.0095	<0.0095
	04/25/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	09/19/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/23/14	<0.010	<0.010	0.014	<0.010	<0.010	<0.010	0.013	0.027	--	--	--	--	--	--	--	--	--
	12/16/14	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/17/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	12/08/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/14/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	<0.031	--	--
	01/13/17	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	--	--	--
	06/13/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	11/08/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/20/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/13/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/25/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/17/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/16/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	11/19/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.008	--	--	--	--	--	--	--	--	--
	06/08/21	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.022**	**<0.022**	**<0.009**	--	--	--	--	--	--	--	--	--
MW-207	06/07/07	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1
	07/06/07	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	0.31	<1	0.01	<0.0096	0.017	0.033	0.014	0.064	<0.0096

Appendix E
Historical Summary of Groundwater Analytical Data
Carcinogenic Polycyclic Aromatic Hydrocarbons

Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

OFFSITE AREA		Carcinogenic PAHs[2,3] (µg/L)								Noncarcinogenic PAHs[2] (µg/L)								
Monitoring Well[1]	Sample Date	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Total CPAHs[4]	Acenaphthene	Acenaphthylene	Anthracene	Benzo(g,h,i)perylene	Fluoranthene	Fluorene	Naphthalene[4]	Phenanthrene	Pyrene
RAL		0.03	0.03	0.03	0.03	0.03	0.03	0.03	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
MW-207 (continued)	09/27/07	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	<0.010	--	--
	11/27/07	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	<0.010	--	--
	02/12/08	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
	05/13/08	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Filtered	05/13/08	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
	09/04/08	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
Filtered	09/04/08	<0.00952	<0.00952	0.0303	0.0256	<0.00952	<0.00952	<0.00952	0.0559	--	--	--	--	--	--	--	--	--
	10/01/08	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
Duplicate	10/01/08	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Filtered	10/01/08	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
Duplicate	10/01/08	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
	12/03/08	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	<0.00952	--	--	--	--	--	--	--	--	--
Filtered	12/03/08	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	<0.00943	--	--	--	--	--	--	--	--	--
	02/18/09	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
Filtered	02/18/09	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	<0.00990	--	--	--	--	--	--	--	--	--
	05/12/09	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	<0.00980	--	--	--	--	--	--	--	--	--
Filtered	05/12/09	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	--	--	--	--	--	--	--	--	--
	09/11/09	<0.0100	<0.0200	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0200	--	--	--	--	--	--	--	--	--
Filtered	09/11/09	<0.0110	<0.0220	<0.0110	<0.0110	<0.0110	<0.0110	<0.0110	<0.0220	--	--	--	--	--	--	--	--	--
	04/14/10	<0.0097	<0.019	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.019	--	--	--	--	--	--	--	--	--
Filtered	04/14/10	<0.0094	<0.019	<0.0094	<0.0094	<0.0094	<0.0094	<0.0094	<0.019	--	--	--	--	--	--	--	--	--
	09/21/10	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	--	--	--	--	--	--	--	--	--
Duplicate	09/21/10	<0.0096	<0.019	<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.019	--	--	--	--	--	--	--	--	--
Filtered	09/21/10	<0.0094	<0.019	<0.0094	<0.0094	<0.0094	<0.0094	<0.0094	<0.019	--	--	--	--	--	--	--	--	--
Duplicate	09/21/10	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	--	--	--	--	--	--	--	--	--
	04/27/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	3.2	<0.094	0.10	<0.094	0.44	1.1	0.17	0.32	0.31
Filtered	04/27/11	<0.094	<0.19	<0.094	<0.094	<0.094	<0.094	<0.094	<0.19	2.6	<0.094	<0.094	<0.094	<0.094	0.53	0.22	<0.094	<0.094
	09/21/11	<0.0099	<0.020	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.020	0.57	<0.0099	0.031	<0.0099	0.22	0.085	0.035	0.016	0.23
Filtered	09/21/11	<0.0098	<0.020	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.020	0.35	<0.0098	0.012	<0.0098	0.047	0.045	0.019	<0.0098	0.042
	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	0.84	0.019	0.040	<0.019	0.19	0.074	0.23	0.021	0.17
Filtered	04/18/12	<0.019	<0.0096	<0.019	<0.019	<0.019	<0.019	<0.019	<0.038	0.93	0.021	0.047	<0.019	0.21	0.080	0.23	0.025	0.19
	10/11/12	0.017	<0.019	<0.0095	<0.0095	0.0097	<0.0095	<0.0095	0.0267	0.74	0.013	0.094	<0.0095	0.23	0.12	0.068	0.031	0.34
Filtered	10/11/12	<0.0095	<0.019	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.019	0.18	<0.0095	0.029	<0.0095	<0.0095	<0.0095	0.033	0.017	<0.0095
	04/25/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	09/19/13	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/23/14	0.019	<0.010	<0.010	<0.010	0.011	<0.010	<0.010	0.03	--	--	--	--	--	--	--	--	--
	12/16/14	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/17/15	0.030	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.030	--	--	--	--	--	--	--	--	--
	12/08/15	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/14/16	1.0	0.98	1.0	0.84	0.85	0.95	0.93	6.55	--	--	--	--	--	--	3.49	--	--
	01/13/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
Duplicate	01/13/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/13/17	0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	11/08/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
Duplicate	11/08/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/20/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/13/18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/25/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	12/17/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	06/16/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	11/18/20	<0.01	<0.01	0.013 J	<0.01	0.012 J	<0.02 *	<0.01	<0.009	--	--	--	--	--	--	--	--	--
	06/07/21	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.021**	**<0.021**	**<0.009**	--	--	--	--	--	--	--	--	--
MW-209	02/16/16	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	--	--	--
	06/13/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	0.21	--	--
	09/22/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	<0.030	--	--
	01/12/17	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	--	--	--
	03/27/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/13/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	12/16/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	03/25/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	06/17/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	11/17/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.008	--	--	--	--	--	--	--	--	--
	03/15/21	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.023**	**<0.023**	**<0.009**	--	--	--	--	--	--	--	--	--
	06/09/21	**<0.010**	**<0.010**	**<0.010**	**<0.010**	**<0.010**	**<0.021**	**<0.021**	**<0.009**	--	--	--	--	--	--	--	--	--
MW-210	02/16/16	0.100	0.042	0.050	0.016	0.170	0.012	0.021	0.411	--	--	--	--	--	--	--	--	--
	06/13/16	0.110	0.056	0.073	0.027	0.210	0.015	0.024	0.515	--	--	--	--	--	--	<0.031	--	--
	09/22/16	0.016	0.014	0.016	<0.012	0.029	<0.012	<0.012	0.019	--	--	--	--	--	--	<0.037	--	--
	01/12/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	03/27/17	0.016	<0.010	0.011	<0.010	0.020	<0.010	<0.010	0.009	--	--	--	--	--	--	--	--	--
Duplicate	03/27/17	<0.010	<0.010	<0.010	<0.010	0.012	<0.010	<0.010	0.008	--	--	--	--	--	--	--	--	--
	06/16/17	0.075	0.042	0.044	0.020	0.130	0.017	0.034	0.060	--	--	--	--	--	--	--	--	--
	12/16/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	03/25/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	06/17/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	09/11/20	0.020 J	0.040 J	0.039 J	0.038 J	0.020 J	0.062 J	0.077	0.064	--	--	--	--	--	--	--	--	--
	11/17/20	<0.011	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.009	--	--	--	--	--	--	--	--	--
	03/15/21	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.023**	**<0.023**	**<0.009**	--	--	--	--	--	--	--	--	--
	06/09/21	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.021**	**<0.021**	**<0.009**	--	--	--	--	--	--	--	--	--

Appendix E
Historical Summary of Groundwater Analytical Data
Carcinogenic Polycyclic Aromatic Hydrocarbons

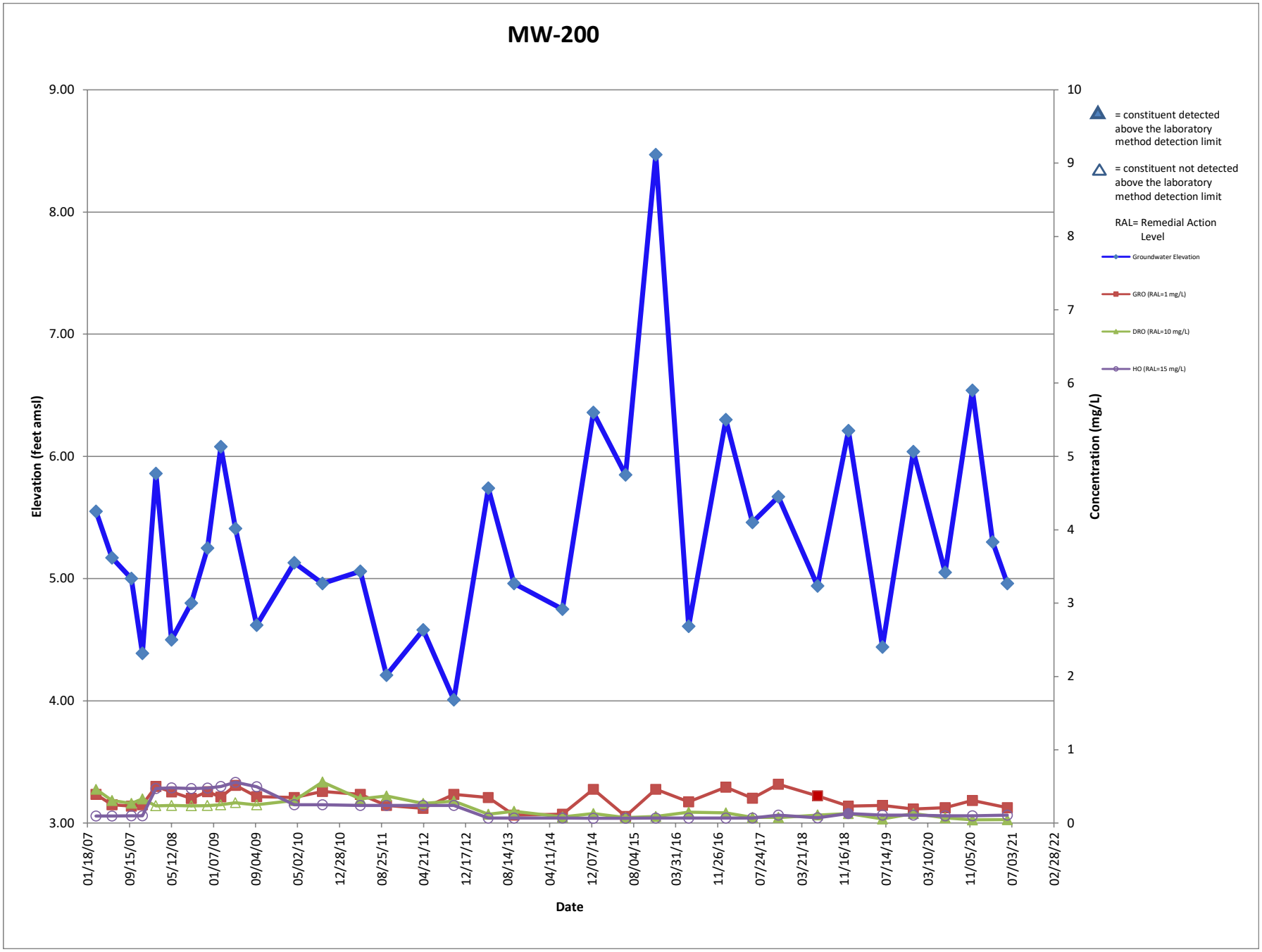
Former Unocal Seattle Marketing Terminal
3001 Elliott Avenue
Seattle, Washington

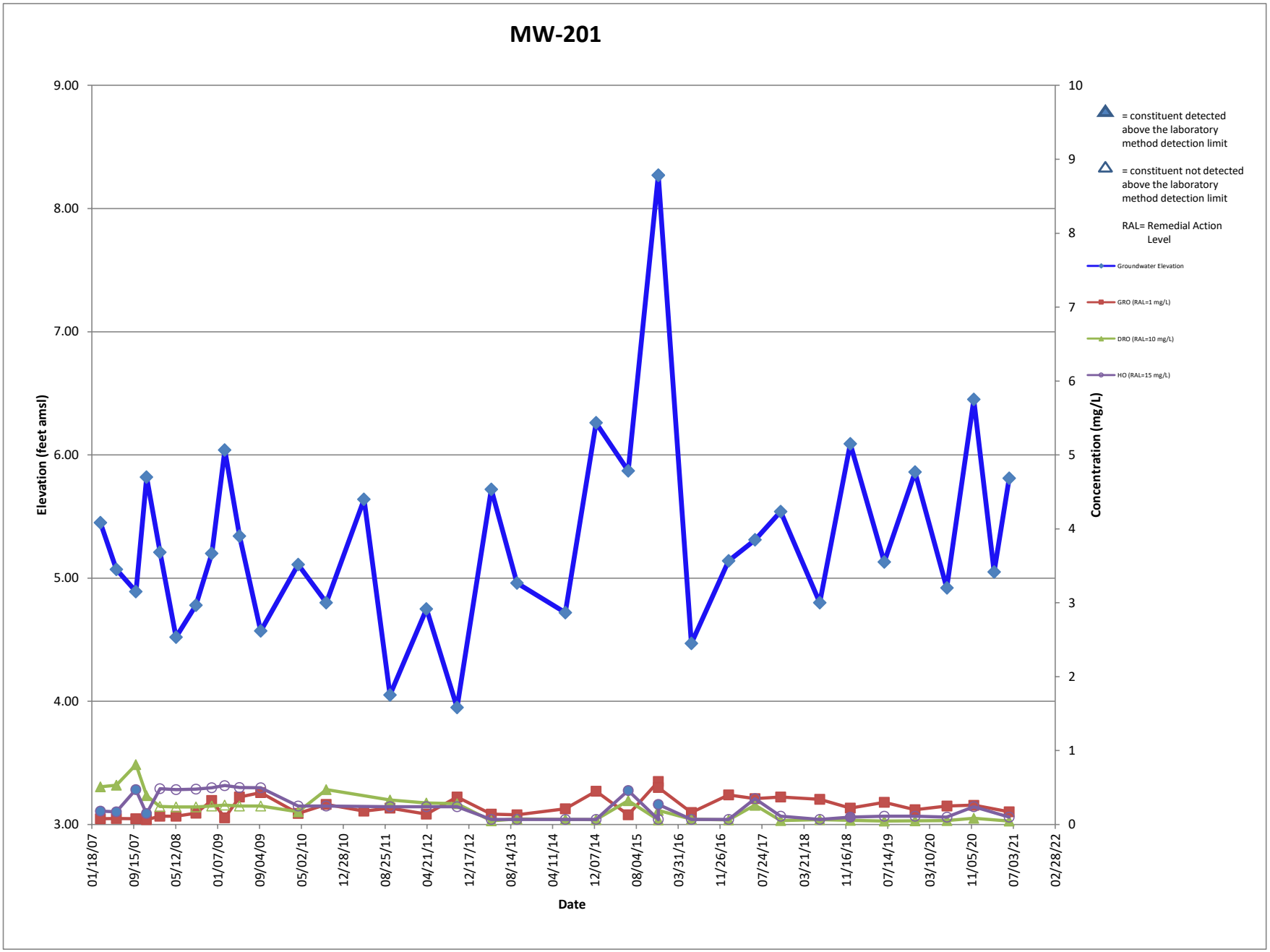
OFFSITE AREA		Carcinogenic PAHs[2,3] (µg/L)								Noncarcinogenic PAHs[2] (µg/L)								
Monitoring Well[1]	Sample Date	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Total CPAHs[4]	Acenaphthene	Acenaphthylene	Anthracene	Benzo(g,h,i)perylene	Fluoranthene	Fluorene	Naphthalene[4]	Phenanthrene	Pyrene
RAL		**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**0.03**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
MW-211	02/16/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/13/16	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	<0.031	--	--
	09/22/16	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	--	--	--	--	--	--	<0.033	--	--
	01/12/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	03/27/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	06/16/17	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	--	--	--	--	--	--	--	--	--
	12/16/19	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	--	--	--	--	--	--	--	--	--
	03/25/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	06/17/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.08	--	--	--	--	--	--	--	--	--
	11/17/20	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.010	--	--	--	--	--	--	--	--	--
	03/15/21	<0.011	<0.011	<0.011	<0.011	<0.011	<0.022	<0.022	<0.009	--	--	--	--	--	--	--	--	--
	06/09/21	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.011**	**<0.021**	**<0.021**	**<0.009**	--	--	--	--	--	--	--	--	--

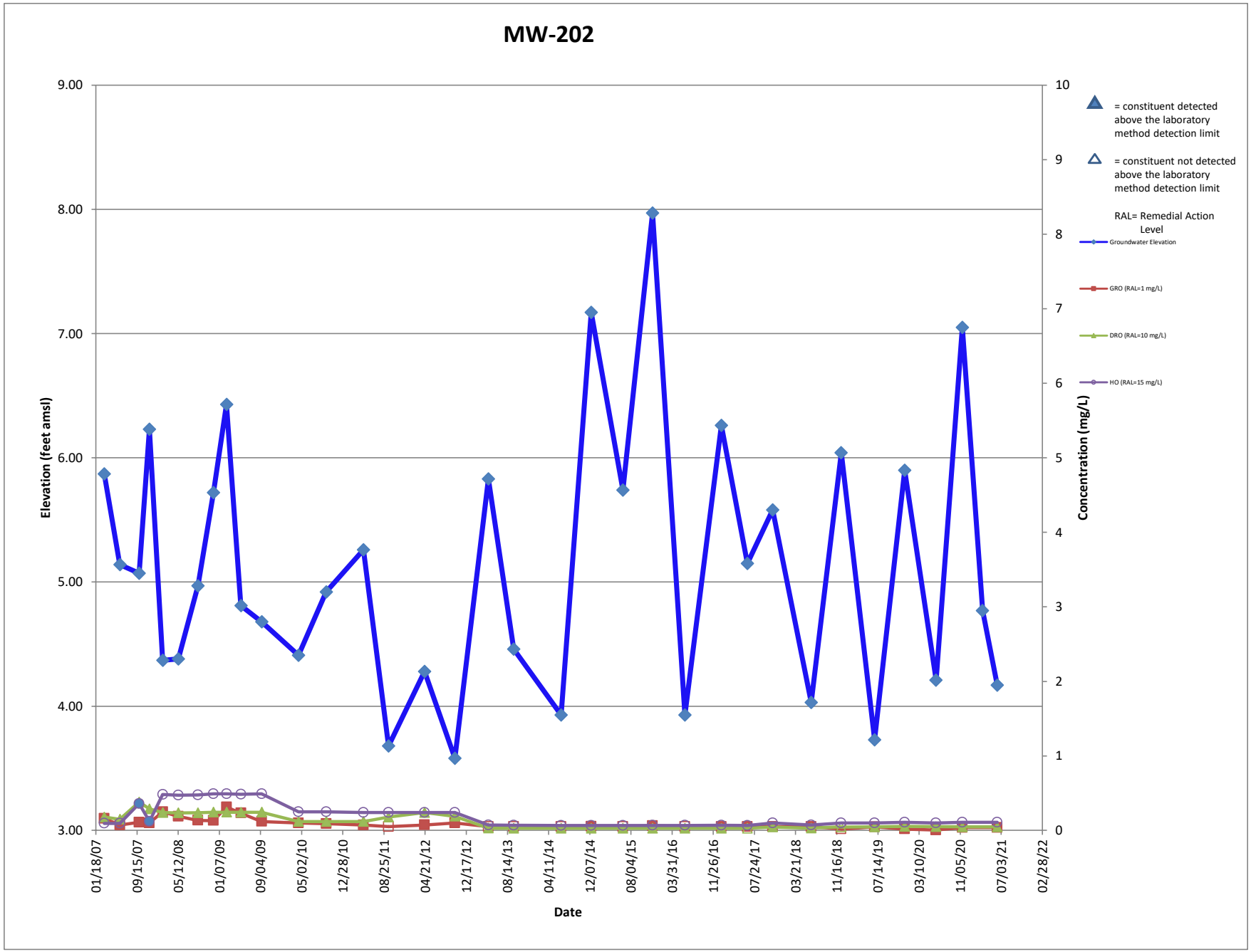
Notes:
[1]Monitoring well locations are shown on Figure 2.
[2]Analyses by EPA Method 8310 or 8270 (SIM).
[3]WAC 173-340-200 (MTCA).
[4]Numeric sum of detected concentrations. Where no compounds were detected, this figure is equal to the highest reporting limit for an individual compound.
[5]Napthalene detected in the method blank, these data are from the initial extraction of the sample.
[6]Sample was extracted past the holding time.
[7]Sample was re-prepared outside of preparation holding time. Results have been flaged as "H" in the laboratory report.
[8]There was insufficient sample to perform a re-extraction or re-analysis, therefore, the data have been reported.
[9]LCS or LCSD exceeds the control limits/RPD of the LCS exceeds the control limits.
[D]Duplicate of the preceding sample.
RAL = Remedial Action Level per Amendments No. 4 and No. 5 to Order on Consent; applicable for Offsite Area only.
There is no cPAH RAL for groundwater in the Upper Yard, Lower Yard or Elliott Avenue.
µg/L = micrograms per liter
NE = not established
"--" not sampled
cPAHs = carcinogenic polycyclic aromatic hydrocarbons.
PAHs = polynuclear aromatic hydrocarbons.
LNAPL = light nonaqueous phase liquid
Laboratory analyses by TestAmerica of Tacoma, Washington and Lancaster Laboratories of Lancaster, Pennsylvania.
Bolded data are for the current reporting period.
Shading indicates concentration greater than the RAL.
NEAR = The sample was collected from the top of the water column within the respective monitoring well.
DL, RA, RE, IN = Indicates a Dilution, Reanalysis, Re-extraction, or additional Intial metals/anion analysis of the sample.

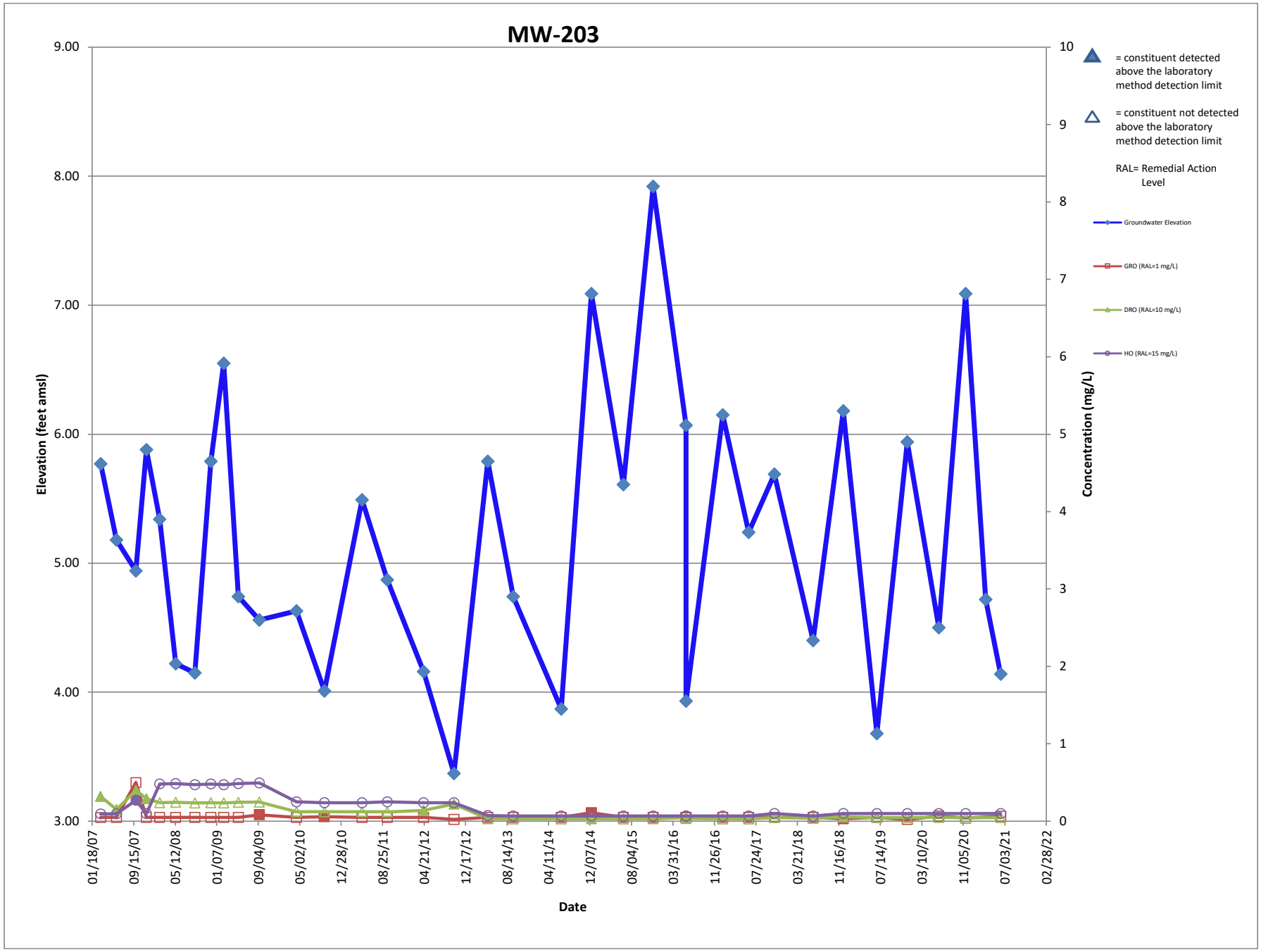
APPENDIX F

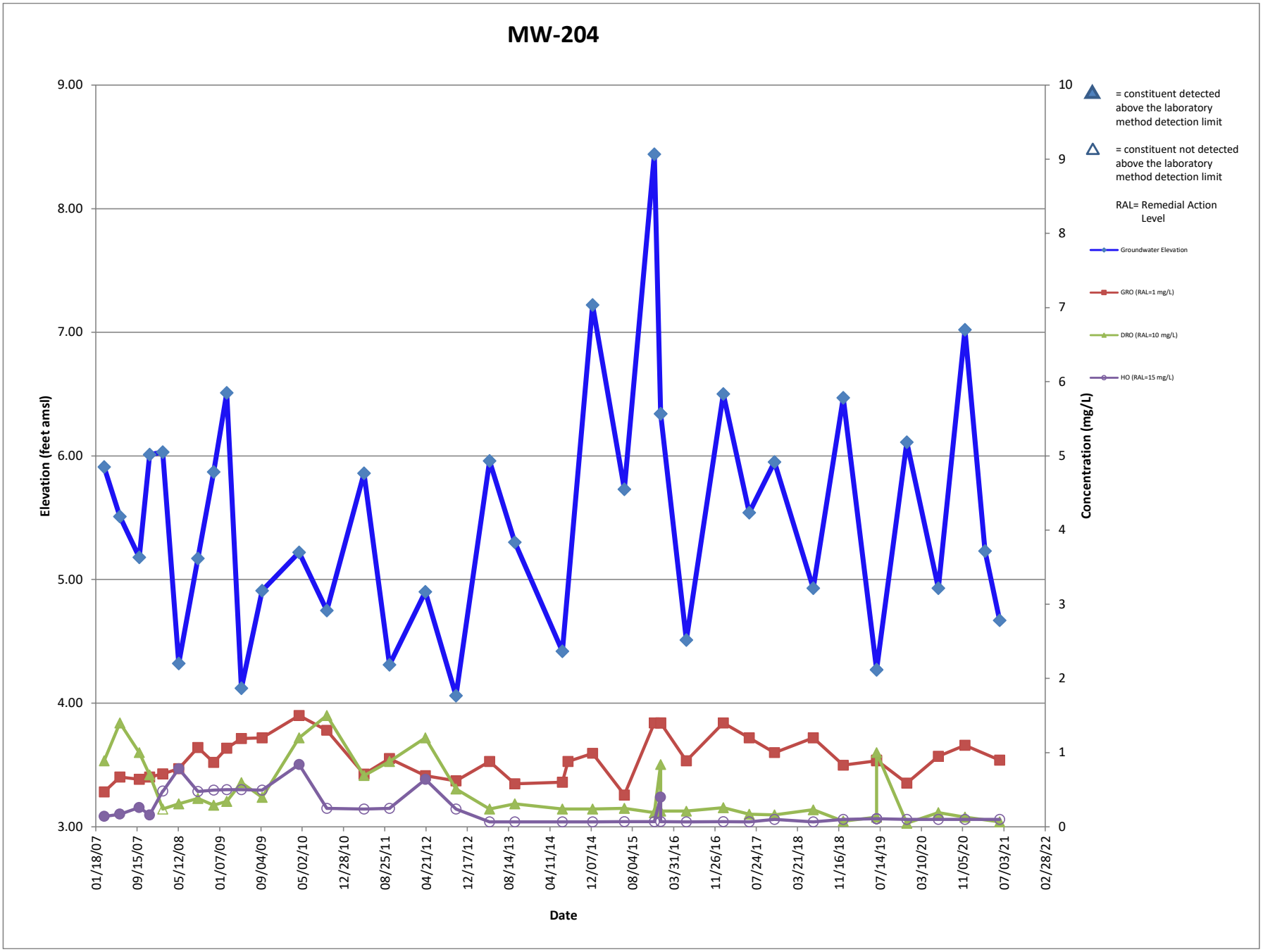
Historical Trends Graphs

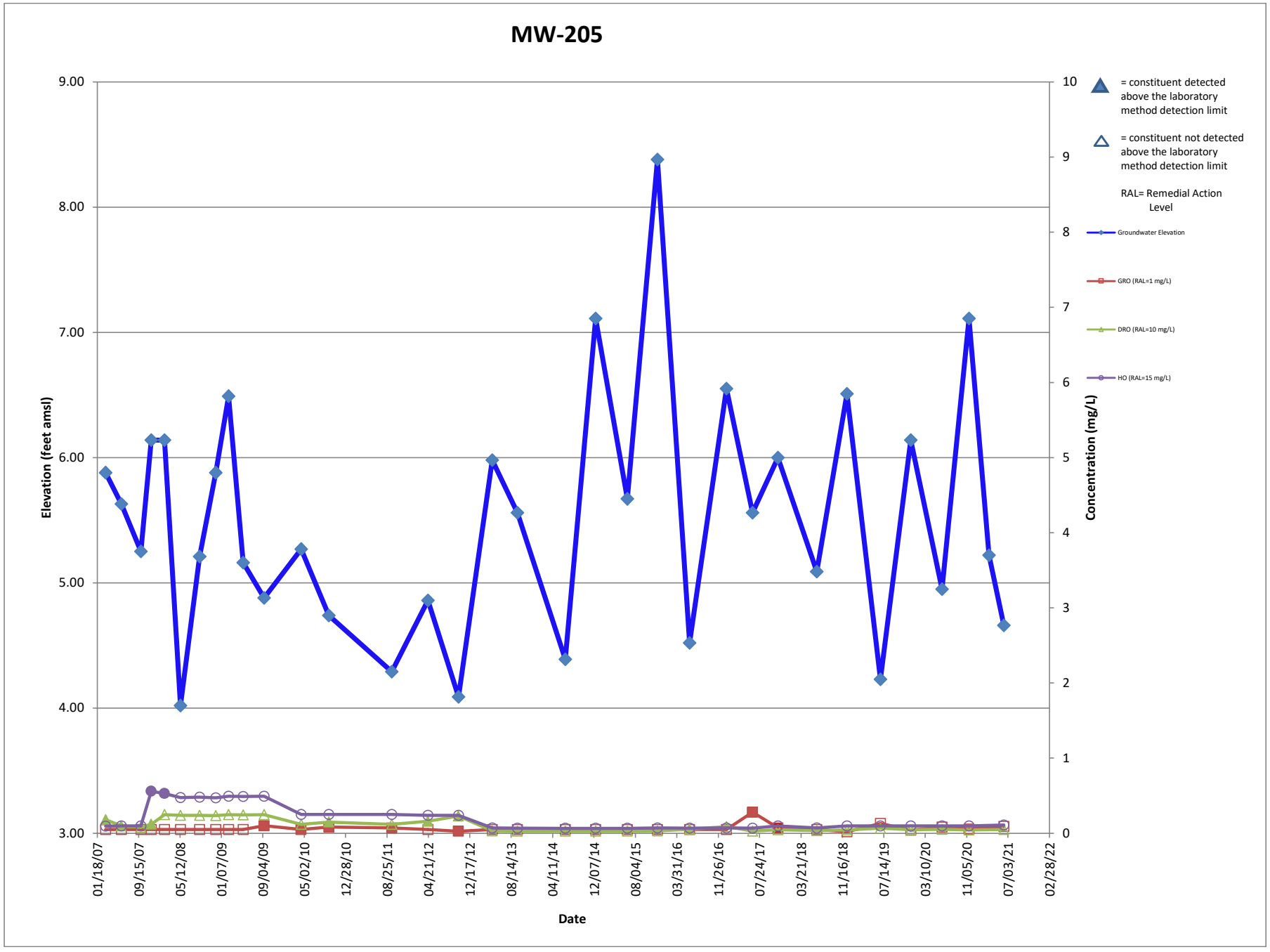

MW-200
Elevation (feet amsl)
Concentration (mg/L)
Date
9.00
8.00
7.00
6.00
5.00
4.00
3.00
10
9
8
7
6
5
4
3
2
1
0
01/18/07
09/15/07
05/12/08
01/07/09
09/04/09
05/02/10
12/28/10
08/25/11
04/21/12
12/17/12
08/14/13
04/11/14
12/07/14
08/04/15
03/31/16
11/26/16
07/24/17
03/21/18
11/16/18
07/14/19
03/10/20
11/05/20
07/03/21
02/28/22
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)

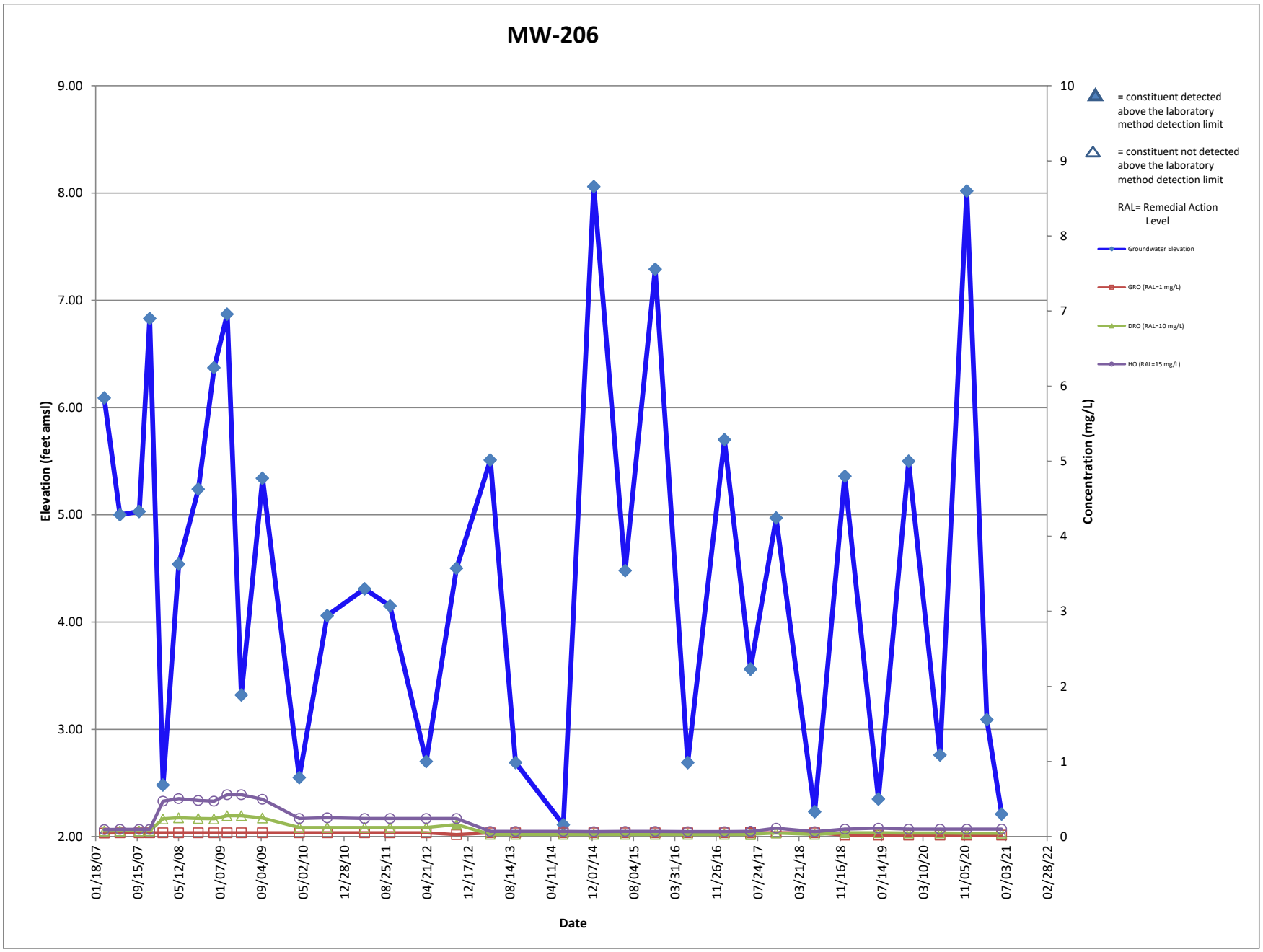

MW-201
Elevation (feet amsl)
Concentration (mg/L)
Date
9.00
8.00
7.00
6.00
5.00
4.00
3.00
10
9
8
7
6
5
4
3
2
1
0
01/18/07
09/15/07
05/12/08
01/07/09
09/04/09
05/02/10
12/28/10
08/25/11
04/21/12
12/17/12
08/14/13
04/11/14
12/07/14
08/04/15
03/31/16
11/26/16
07/24/17
03/21/18
11/16/18
07/14/19
03/10/20
11/05/20
07/03/21
02/28/22
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)

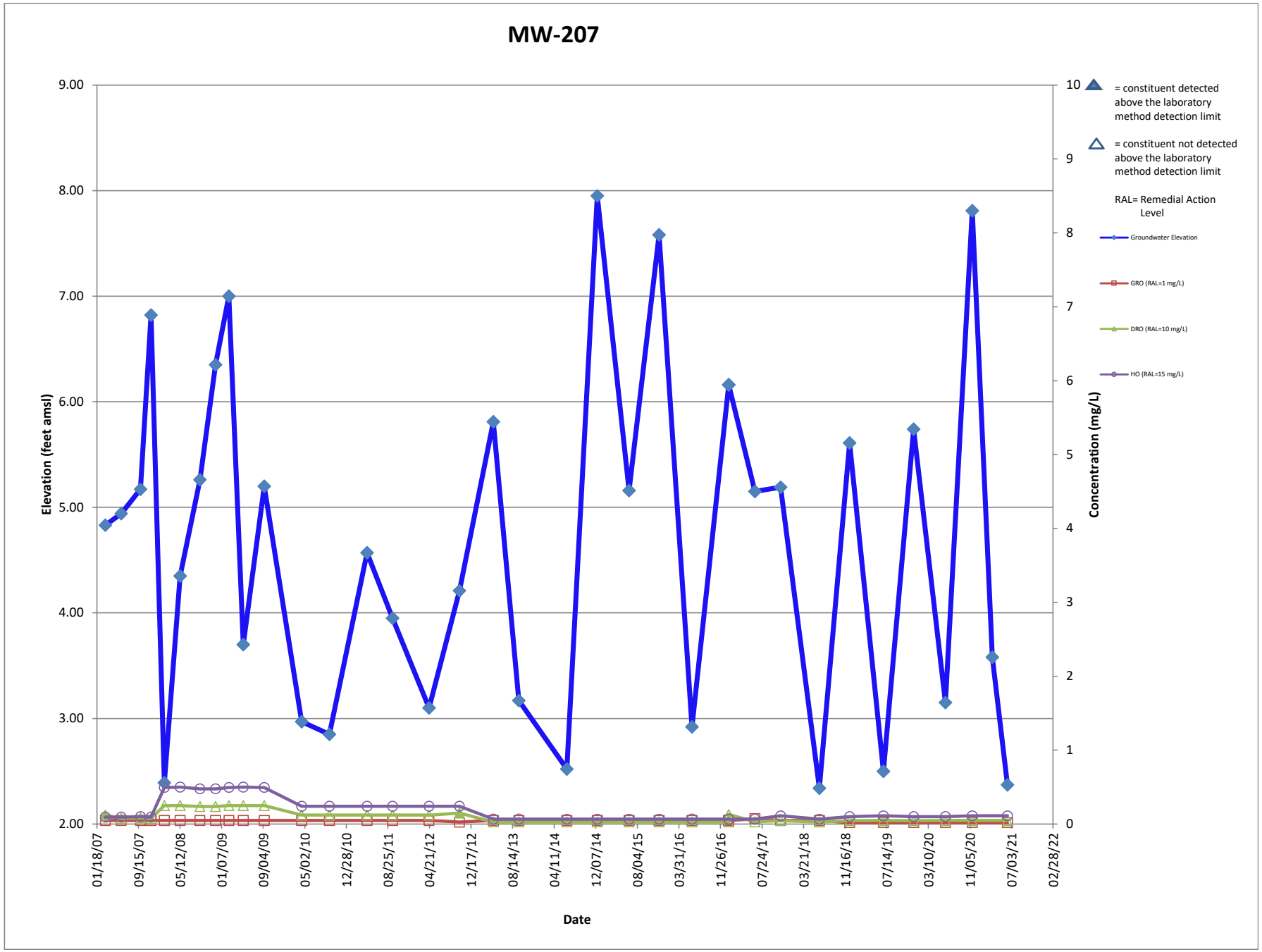

MW-202
Elevation (feet amsl)
Concentration (mg/L)
Date
9.00
8.00
7.00
6.00
5.00
4.00
3.00
10
9
8
7
6
5
4
3
2
1
0
01/18/07
09/15/07
05/12/08
01/07/09
09/04/09
05/02/10
12/28/10
08/25/11
04/21/12
12/17/12
08/14/13
04/11/14
12/07/14
08/04/15
03/31/16
11/26/16
07/24/17
03/21/18
11/16/18
07/14/19
03/10/20
11/05/20
07/03/21
02/28/22
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)

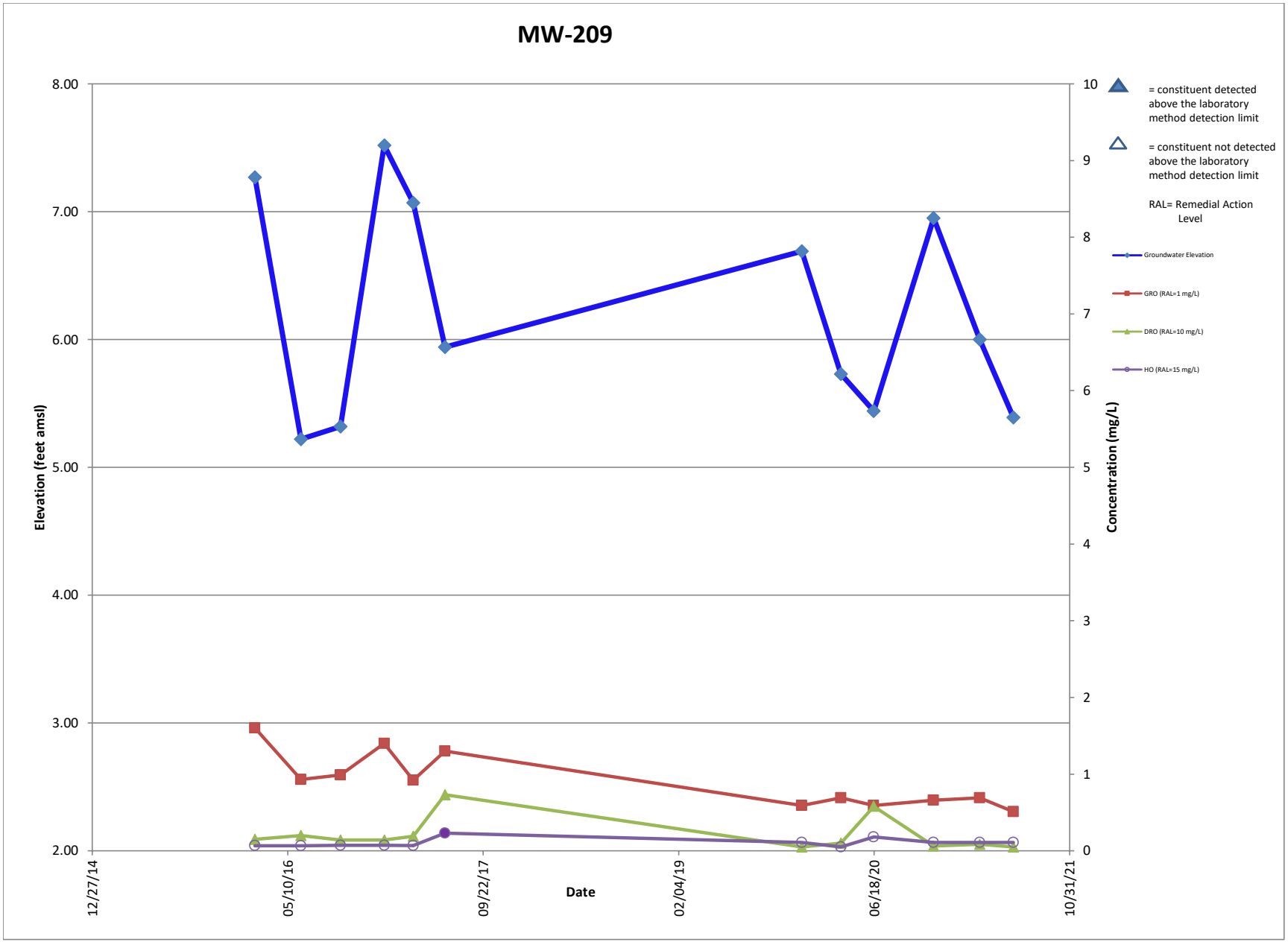

MW-203
Elevation (feet amsl)
Concentration (mg/L)
Date
9.00
8.00
7.00
6.00
5.00
4.00
3.00
10
9
8
7
6
5
4
3
2
1
0
01/18/07
09/15/07
05/12/08
01/07/09
09/04/09
05/02/10
12/28/10
08/25/11
04/21/12
12/17/12
08/14/13
04/11/14
12/07/14
08/04/15
03/31/16
11/26/16
07/24/17
03/21/18
11/16/18
07/14/19
03/10/20
11/05/20
07/03/21
02/28/22
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)


MW-204
Elevation (feet amsl)
Concentration (mg/L)
Date
9.00
8.00
7.00
6.00
5.00
4.00
3.00
10
9
8
7
6
5
4
3
2
1
0
01/18/07
09/15/07
05/12/08
01/07/09
09/04/09
05/02/10
12/28/10
08/25/11
04/21/12
12/17/12
08/14/13
04/11/14
12/07/14
08/04/15
03/31/16
11/26/16
07/24/17
03/21/18
11/16/18
07/14/19
03/10/20
11/05/20
07/03/21
02/28/22
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)

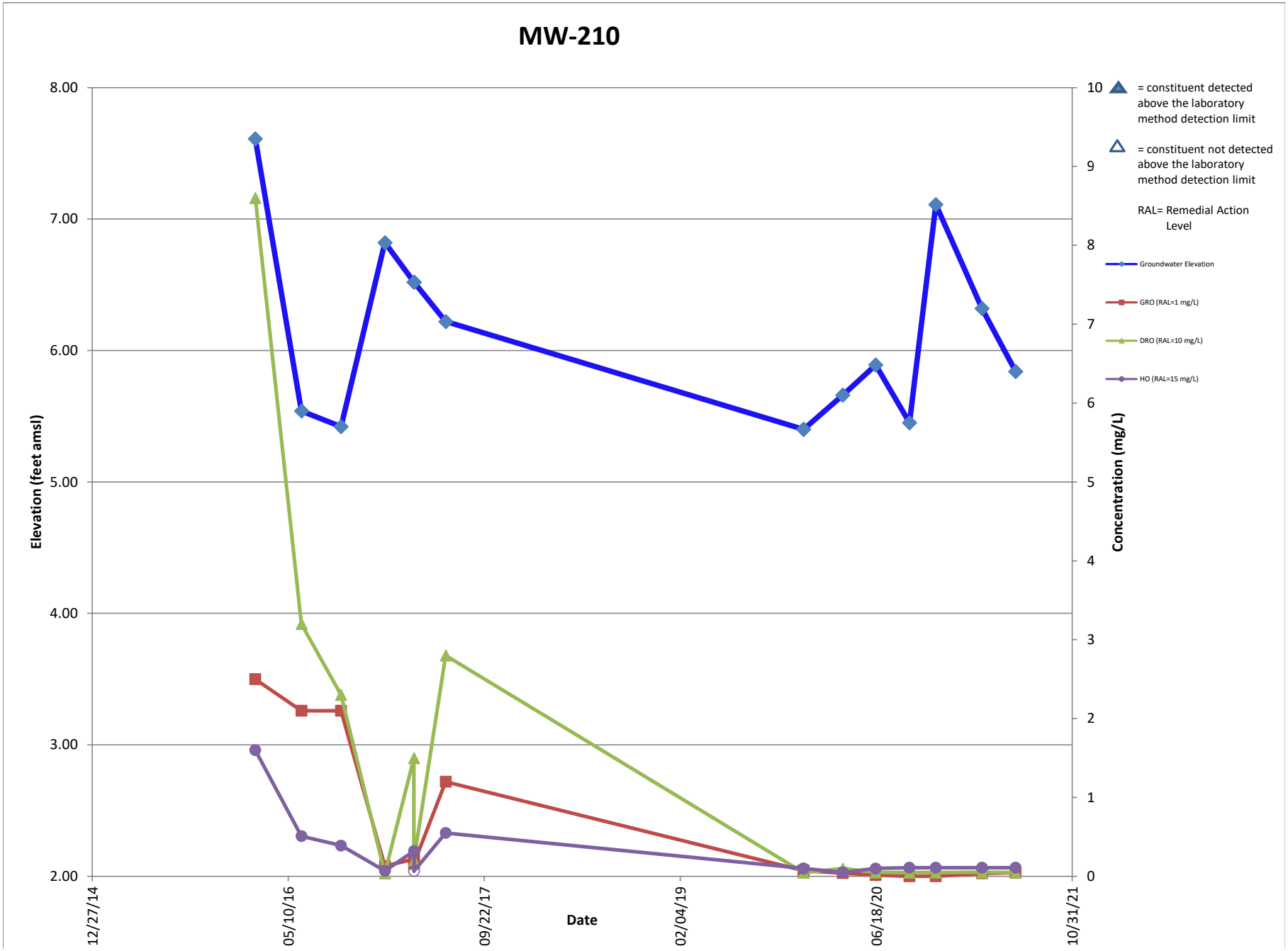

MW-205
Elevation (feet amsl)
Concentration (mg/L)
Date
9.00
8.00
7.00
6.00
5.00
4.00
3.00
10
9
8
7
6
5
4
3
2
1
0
01/18/07
09/15/07
05/12/08
01/07/09
09/04/09
05/02/10
12/28/10
08/25/11
04/21/12
12/17/12
08/14/13
04/11/14
12/07/14
08/04/15
03/31/16
11/26/16
07/24/17
03/21/18
11/16/18
07/14/19
03/10/20
11/05/20
07/03/21
02/28/22
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)

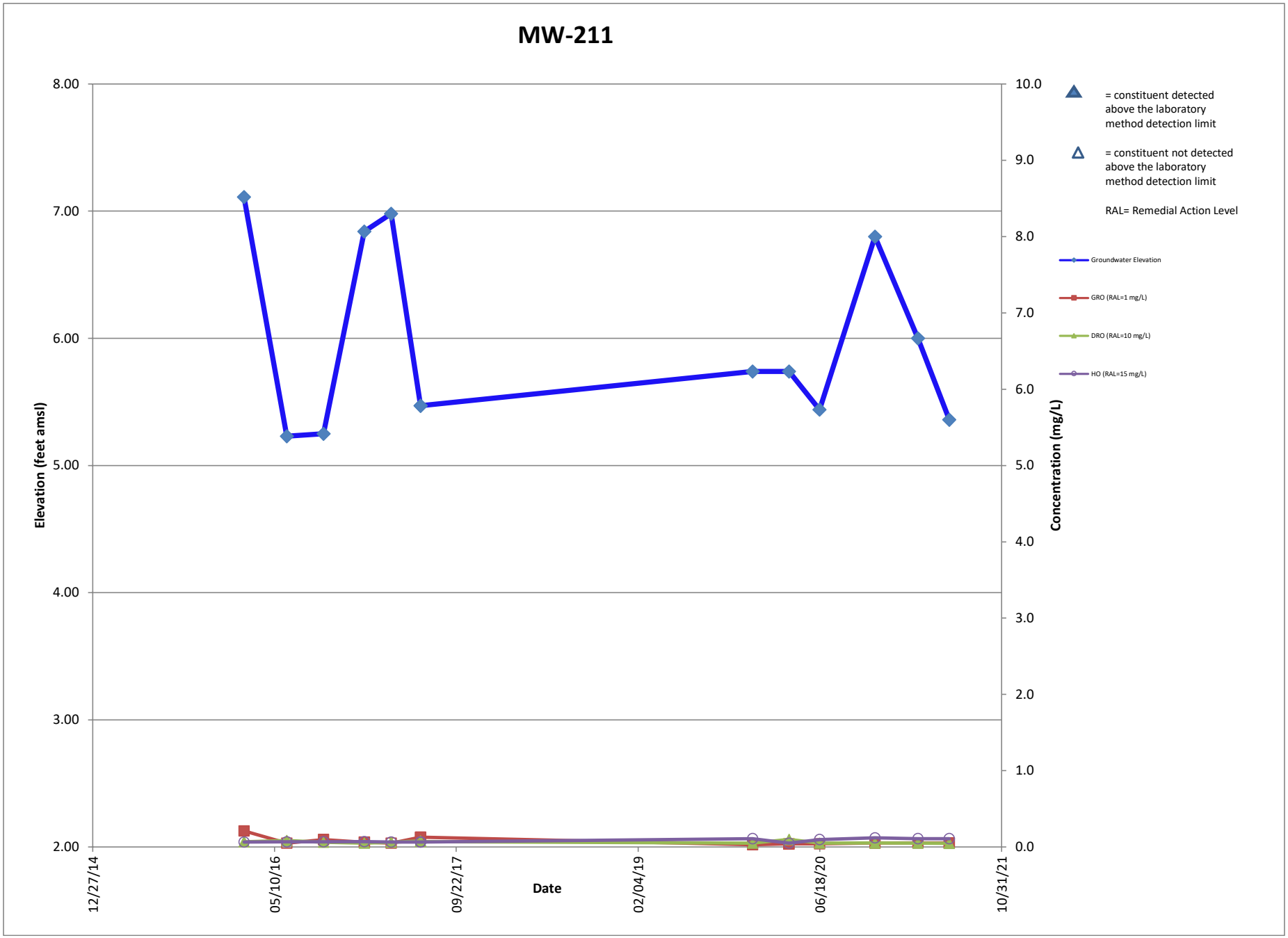

MW-206
Elevation (feet amsl)
Concentration (mg/L)
Date
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
10
9
8
7
6
5
4
3
2
1
0
01/18/07
09/15/07
05/12/08
01/07/09
09/04/09
05/02/10
12/28/10
08/25/11
04/21/12
12/17/12
08/14/13
04/11/14
12/07/14
08/04/15
03/31/16
11/26/16
07/24/17
03/21/18
11/16/18
07/14/19
03/10/20
11/05/20
07/03/21
02/28/22
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)

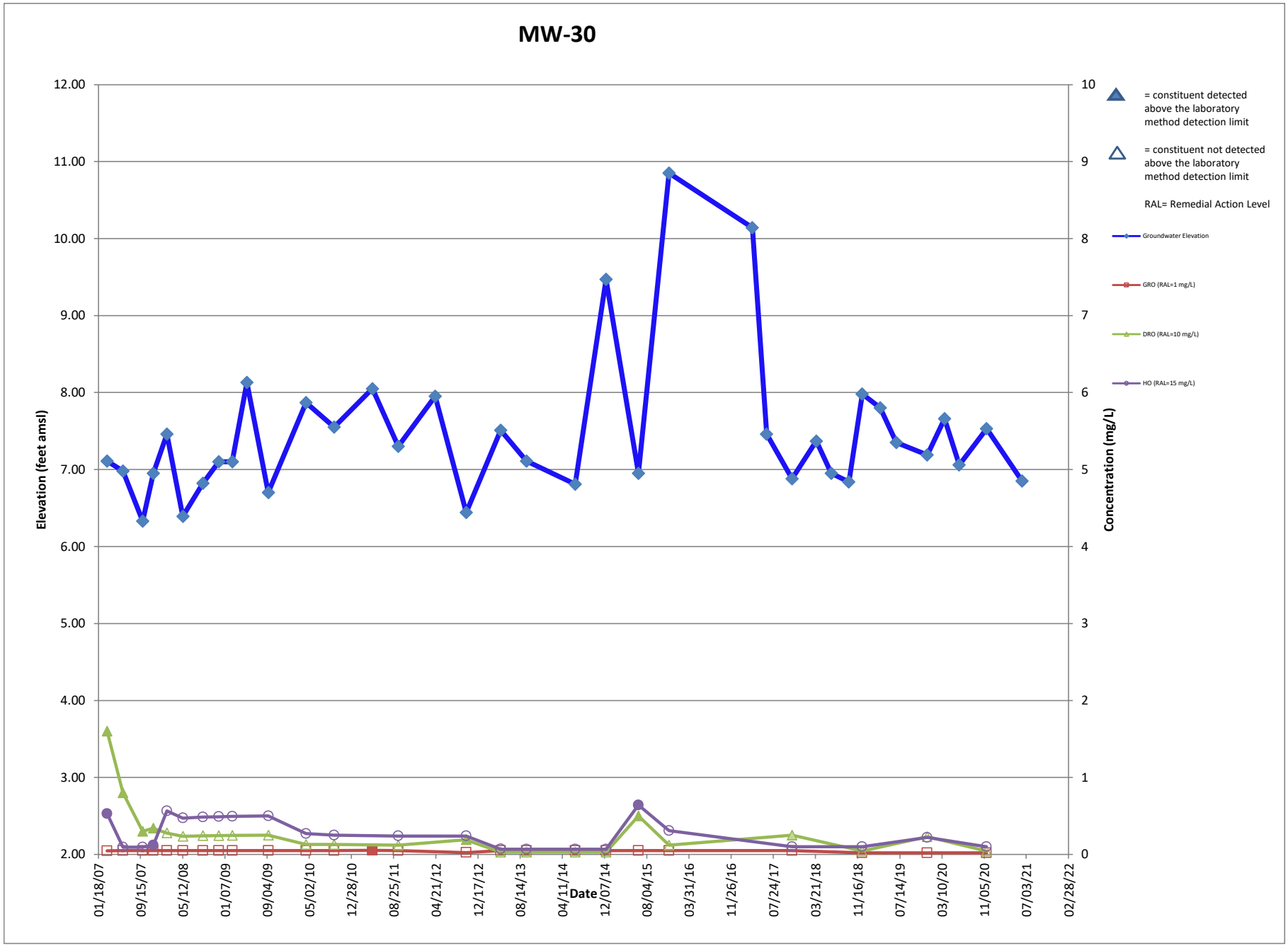

MW-207
Elevation (feet amsl)
Concentration (mg/L)
Date
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
10
9
8
7
6
5
4
3
2
1
0
01/18/07
09/15/07
05/12/08
01/07/09
09/04/09
05/02/10
12/28/10
08/25/11
04/21/12
12/17/12
08/14/13
04/11/14
12/07/14
08/04/15
03/31/16
11/26/16
07/24/17
03/21/18
11/16/18
07/14/19
03/10/20
11/05/20
07/03/21
02/28/22
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)

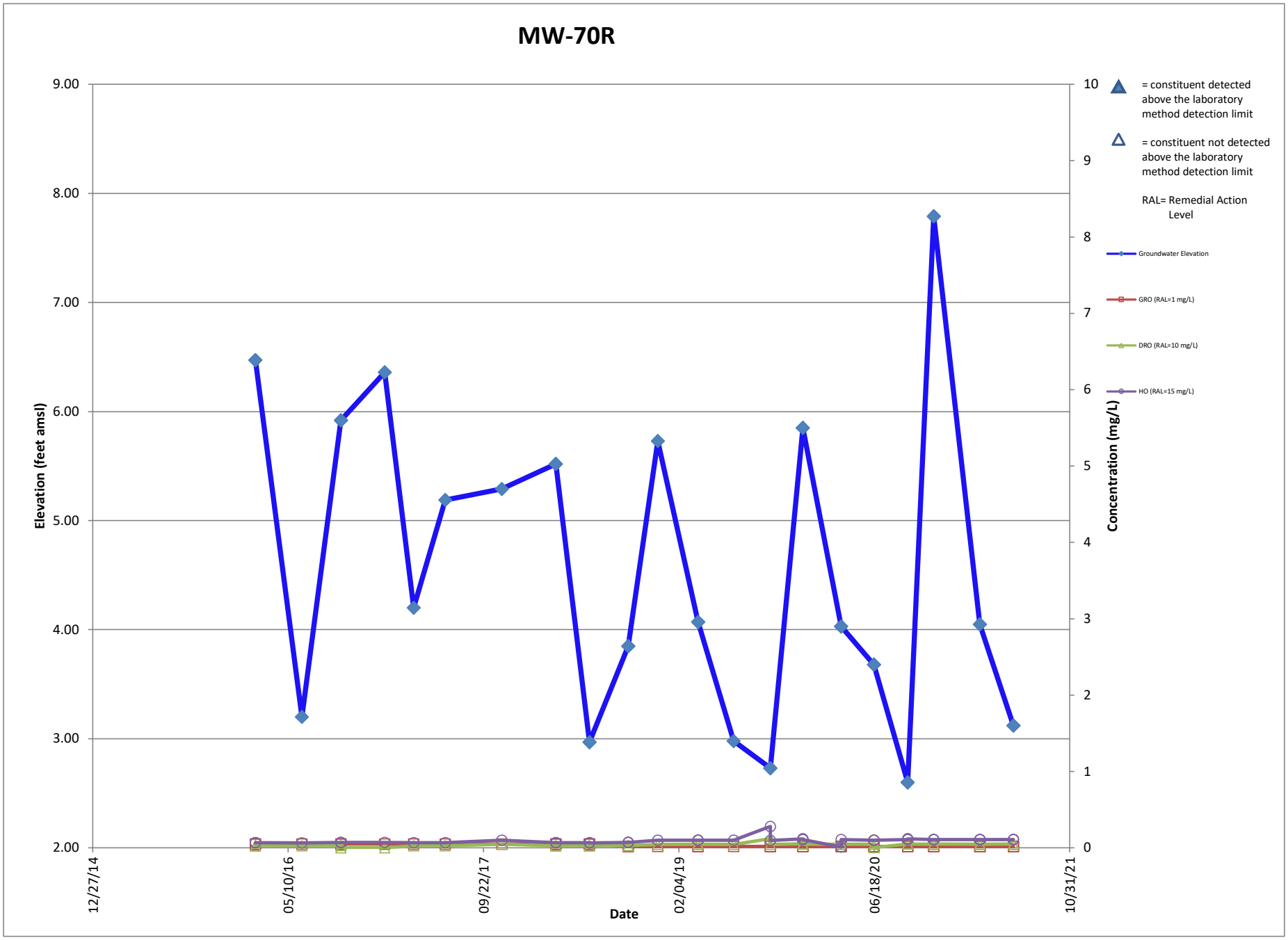

MW-209
8.00
7.00
6.00
5.00
4.00
3.00
2.00
Elevation (feet amsl)
10
9
8
7
6
5
4
3
2
1
0
Concentration (mg/L)
12/27/14
05/10/16
09/22/17
02/04/19
06/18/20
10/31/21
Date
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)

MW-210


8.00
7.00
6.00
5.00
4.00
3.00
2.00
Elevation (feet amsl)
10
9
8
7
6
5
4
3
2
1
0
Concentration (mg/L)
12/27/14
05/10/16
09/22/17
02/04/19
06/18/20
10/31/21
Date
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)


MW-211
8.00
7.00
6.00
5.00
4.00
3.00
2.00
Elevation (feet amsl)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Concentration (mg/L)
12/27/14
05/10/16
09/22/17
02/04/19
06/18/20
10/31/21
Date
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)


MW-30
Elevation (feet amsl)
Concentration (mg/L)
Date
12.00
11.00
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
10
9
8
7
6
5
4
3
2
1
0
01/18/07
09/15/07
05/12/08
01/07/09
09/04/09
05/02/10
12/28/10
08/25/11
04/21/12
12/17/12
08/14/13
04/11/14
12/07/14
08/04/15
03/31/16
11/26/16
07/24/17
03/21/18
11/16/18
07/14/19
03/10/20
11/05/20
07/03/21
02/28/22
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)


MW-70R
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
Elevation (feet amsl)
10
9
8
7
6
5
4
3
2
1
0
Concentration (mg/L)
12/27/14
05/10/16
09/22/17
02/04/19
06/18/20
10/31/21
Date
= constituent detected above the laboratory method detection limit
= constituent not detected above the laboratory method detection limit
RAL= Remedial Action Level
Groundwater Elevation
GRO (RAL=1 mg/L)
DRO (RAL=10 mg/L)
HO (RAL=15 mg/L)

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