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Mr. Robert Weimer
Alaska Department of Environmental Conservation (ADEC)
555 Cordova Street
Anchorage, Alaska 95501

Subject:
2019 First Semi-Annual Groundwater Monitoring Report

ENVIRONMENT

Dear Mr. Weimer,

On behalf of Chevron Environmental Management Company (Chevron), Arcadis US, Inc. (Arcadis) has prepared the attached *2019 First Semi-Annual Groundwater Monitoring Report* for the first semi-annual groundwater sampling events for the following facility:

Chevron Site No.	ADEC File No.	Hazard ID:	Location
306448	2100.26.117	23360	1441 C Street, Anchorage, Alaska

If you have any questions, please do not hesitate to contact me.

Sincerely,

Arcadis U.S., Inc.

Nicole Monroe, P.E.
Project Manager

Copies:
Tim Bishop (*electronic copy*)

Date:
October 29, 2019

Contact:
Nicole Monroe

Phone:
503.785.9414

Email:
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Our ref:
30015209

ARCADIS Design & Consultancy for natural and built assets

Chevron Environmental Management Company

2019 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Former Unocal Service Station 4652
Chevron Site No. 306448
1441 C Street
Anchorage, Alaska
ADEC File No. 2100.26.117

October 29, 2019

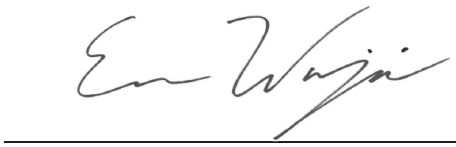
ARCADIS Design & Consultancy for natural and built assets

2019 FIRST SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Former Unocal Service Station 4652, Chevron Site 306448

1441 C Street
Anchorage, Alaska

ADEC File No: 2100.26.117
HAZARD ID No: 23360



Evan Wujcik - *ADEC QUALIFIED SAMPLER*
Environmental Engineer

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Prepared for:

Chevron Environmental Management Company

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Our Ref.:
30015209

Date:
October 29, 2019

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SEMI-ANNUAL STATUS REPORT
FIRST HALF 2019
October 29, 2019

Facility No:	Former Unocal Service Station Chevron Site 306448	Address:	1441 C Street, Anchorage, AK

Arcadis Contact Person / Phone No.:	Nicole Monroe / (503) 785-9414
Arcadis Project No.:	30015209
Primary Agency/Regulatory ID No .:	Alaska Department of Environmental Conservation (ADEC)/ADEC file ID: 2100.26.117

WORK CONDUCTED THIS PERIOD [First Half 2019]:

1. Conducted well repair activities on May 10, 2019.
2. Conducted semi-annual groundwater monitoring activities on May 11, 2019.
3. Well survey conducted on June 5, 2019
4. Prepared the *Semi-Annual Status Report, First Half 2019*.

WORK PROPOSED NEXT PERIOD [Second Half 2019]:

1. Conduct semi-annual groundwater monitoring activities in the second half of 2019.
2. Prepare the *Semi-Annual Status Report, Second Half 2019*.

Current Phase of Project:	Monitoring	
Frequency of Monitoring / Sampling:	Semi-Annual	
Are LNAPL Present On-site:	None	
Cumulative LNAPL Recovered to Date:	0.0	(gallons)
Approximate Depth to Groundwater:	5.22 to 10.13	(feet below top of casing)
Approximate Groundwater Elevation:	60.66 to 73.89	(feet relative to corresponding datum)

Groundwater Flow Direction	South-southeast	
Groundwater Gradient	0.058	(feet per foot)
Current Remediation Techniques:	None	
Permits for Discharge:	None	
Summary of Unusual Activity:	MW-22 was repaired.	
Agency Directive Requirements:	None	

1 INTRODUCTION

On behalf of Chevron Environmental Management Company (CEMC), Arcadis US, Inc. (Arcadis), has prepared this report to document the first semi-annual groundwater sampling event of 2019 for Chevron facility 306448, located at 1441 C Street in Anchorage, Alaska (the site). The site location map and site plan are shown as Figure 1 and Figure 2.

This work was conducted under the direction of a "qualified person" [18 AAC 75. 990 (100), and 18 AAC 78.995 (118)]. Site background and history summaries are attached as Appendix A and field notes, data sheets, and general procedures are included as Appendix B.

2 WELL REPAIR ACTIVITIES

On May 10, 2019 Arcadis field staff supervised Discovery Drilling on the repair of the stickup well protective cover on MW-22. To repair the monitoring well the easing around the well was also cut down.

3 GROUNDWATER MONITORING

3.1 Groundwater Gauging Methods

The 2019 first semi-annual groundwater gauging event was conducted on May 11, 2019. Wells were resurveyed and gauged on June 5, 2019 following the wells repair. Gauging results from June 5, 2019 are included in Table 1. Site monitoring wells were gauged with an oil/water interface probe to determine depth-to-water and to ascertain if LNAPL was present.

In order to prevent the possibility of cross-contamination, wells were gauged in the order of lowest to highest historical petroleum hydrocarbon concentrations in groundwater. In addition, non-disposable groundwater gauging equipment was decontaminated prior to and after each use with a detergent solution and rinsed in potable water.

3.2 Groundwater Elevation and Flow Direction

During the 2019 first semi-annual event, monitoring wells MW-4, MW-5, MW-11A, MW-19, MW-20, MW-21, MW-22 and MW-23 were gauged for groundwater elevations and the presence of LNAPL. The groundwater monitoring event field notes are presented in Appendix B.

The inferred groundwater flow direction for the first semi-annual 2019 monitoring event is to the south-southeast and is consistent with historical flow direction. Current and historical groundwater depth-to-water and elevation data are included in Table 1 and Table 2 respectively. A groundwater elevation contour map is presented as Figure 3.

3.3 Groundwater Sampling Methods

The first semi-annual groundwater monitoring event were conducted on May 11, 2019. Groundwater samples were collected from monitoring wells MW-11A, MW-19, MW-20, MW-21, MW-22 and MW-23 using a low-flow sampling method.

Sampling procedures were conducted in accordance with ADEC *Field Sampling Guidance* (ADEC, 2017). Monitoring well caps were removed to allow groundwater levels to stabilize and equilibrate before using an electronic interface probe (EIP) meter capable of 0.01-foot accuracy to measure the depth to groundwater and total well depth. A bladder pump with compressor & control unit with clean/disposable Teflon lined tubing and bladders was used to purge groundwater from the wells and collect samples to minimize the risk of volatile contaminant absorption by the sampling equipment. Water table drawdown was continuously monitored during purging with a water level meter and the flow rate of the pump was adjusted to limit drawdown to 0.1 meter. The intake of the pump was set as close as possible to the soil groundwater interface. Water quality parameters were monitored during purging with a multi-parameter water quality meter equipped with a flow through cell and Turbidity meter. Parameters were recorded every 3 to 5 minutes until a minimum of three (minimum of four if using temperature as an indicator) of the parameters listed below stabilized. The flow rate was reduced to 100-150 ml/minute and samples were collected from the discharge line into laboratory sample bottles. Water quality parameters were considered stable when three successive readings were within the following ADEC limits:

- ± 3% for temperature (minimum of ± 0.2 C°),
- ± 0.1 for pH,
- ± 3% for conductivity,
- ± 10 mv for redox potential,
- ± 10% for dissolved oxygen, and
- ± 10% for turbidity.

Sample bottles were labeled, stored in a cooler packed with ice, and submitted to Eurofins Lancaster Laboratories Environmental (Eurofins) in Lancaster, Pennsylvania, under proper chain-of-custody procedures. Field notes documenting the first semi-annual event are presented in Appendix B.

Groundwater samples collected from monitoring wells MW 11A, MW-19, MW-20, MW-21, MW-22 and MW-23 were submitted to the analytical laboratory for the following analyses:

- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) and Methyl tert-butyl ether (MTBE), by United States Environmental Protection Agency (USEPA) method 8260C

- Total petroleum hydrocarbon as gasoline range organics (TPH-GRO) by Alaska method AK101
- Total petroleum hydrocarbons as diesel range organics (TPH-DRO) by Alaska method AK102-SV

A groundwater duplicate sample was collected from monitoring well MW-11A. The duplicate samples was analyzed for BTEX, MTBE, GRO, and DRO. The duplicate sample was submitted blind with the sample set to Eurofins.

3.4 Groundwater Analytical Results

Routine analytical results for the above-mentioned constituents obtained from the first semi-annual 2019 groundwater monitoring event are summarized in Table 1 and historical analytical results are summarized in Table 2 and are shown on Figure 4. PAHs were not tested in the 2019 first semi-annual groundwater monitoring event, however historical PAH analytical results are summarized in Table 3.

4 LABORATORY DATA QUALITY ASSURANCE SUMMARY

As required by ADEC (Technical Memorandum 06-002, dated March, 2009), Arcadis completed a laboratory data review checklist for each of the laboratory reports generated for the 2019 semi-annual event. The laboratory reports are included as Appendix C and data review checklists are included as Appendix D. The following quality assurance (QA) summary describes six parameters, related to the quality and usability of the data presented in this report.

4.1 Precision

The relative percent difference (RPD) for matrix spike/matrix spike duplicate (MS/MSD), laboratory control sample / laboratory control sample duplicate (LCS/LCSD) and field duplicate (FD) were within the control limits.

The precision of the data, as measured by laboratory quality control (QC) indicators, suggest that the Data Quality Objectives (DQOs) were met.

4.2 Accuracy

The percent recoveries for LCS/LCSD and MS/MSD were within the control limits.

The accuracy of the data, as measured by laboratory quality control (QC) indicators, suggest that the DQOs were met.

4.3 Representativeness

The data appear to be representative of site conditions and are generally consistent with historical groundwater monitoring results and expected impacts to groundwater.

4.4 Comparability

The laboratory results are presented in the same units as previous reports to allow comparison.

4.5 Completeness

The results appear to be valid and usable, and thus, the laboratory results have 100% completeness.

4.6 Sensitivity

The sensitivity of the analyses was adequate for the samples as the detection limits were less than the ADEC GCLs for compounds.

5 CONCLUSIONS AND RECOMMENDATIONS

The groundwater data collected during the first semi-annual 2019 event indicates that the groundwater flow directions (south-southeast) is generally consistent with historical data. During the first semi-annual 2019 groundwater monitoring events, groundwater samples were collected for analysis from monitoring wells MW-11A, MW-19, MW-20, MW-21, MW-22 and MW-23. Analytical results from the monitoring wells are generally consistent with historical data.

Groundwater monitoring will continue in accordance with the current semi-annual schedule. The second semi-annual sampling event of 2019 will be conducted in the fall of 2019.

6 REFERENCES

ADEC. *Field Sampling Guidance*. Division of Spill Prevention and Response Contaminated Sites Program. August, 2017.

ADEC Technical Memorandum, March, 2017. *Data Quality Objectives, Checklists, Quality Assurance Requirements for Laboratory Data, and Sample Handling*. ADEC, Division of Spill Prevention and Response Contaminated Sites Program.

TABLES

Table 1. Current Groundwater Gauging and Analytical Results
Former Unocal Station 4652
Chevron Site 306448
1441 C Street, Anchorage, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft)	Datum	DTW* (ft bTOC)	LNAPL Thickness (ft)	GW Elev (ft)	TPH-g (mg/L)	TPH-d (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)
ADEC Groundwater Cleanup Levels								**2.2**	**1.5**	**0.0046**	**1.1**	**0.015**	**0.19**	**0.14**
MW-4	5/11/2019	--	79.69	NAVD88	8.35	0.00	71.34	--	--	--	--	--	--	--
MW-5	5/11/2019	--	83.02	NAVD88	9.13	0.00	73.89	--	--	--	--	--	--	--
MW-11A	5/11/2019	--	79.28	NAVD88	8.71	0.00	70.57	**4.0 [3.9]**	<0.32 B [<0.36 B]	**0.078 [0.078]**	<0.0006 B [<0.0006 B]	**0.013 [0.013]**	**0.980 [0.910]**	<0.0002 [<0.0002]
MW-19	5/11/2019	--	81.95	NAVD88	10.13	0.00	71.82	<0.014	<0.13 B	<0.0002	<0.0002	<0.0004	<0.001	<0.0002
MW-20	5/11/2019	--	79.88	NAVD88	9.17	0.00	70.71	**27**	**4.9**	**0.11**	**1.1**	**0.76**	**7.2**	**0.0003 J**
MW-21	5/11/2019	--	69.15	NAVD88	7.05	0.00	62.10	<0.014	<0.087 B	<0.0002	<0.0002	<0.0004	<0.001	<0.0002
MW-22	5/11/2019	--	67.26	NAVD88	6.60	0.00	60.66	<0.014	<0.21 B	<0.0002	<0.0002	<0.0004	<0.001	<0.0002
MW-23	5/11/2019	--	66.46	NAVD88	5.22	0.00	61.24	<0.014	<0.16 B	<0.0002	<0.0002	<0.0004	<0.001	<0.0002
Trip Blank	4/17/2019	--	--	--	--	--	--	<0.014	--	<0.0002	<0.0002	<0.0004	<0.001	<0.0002

Notes:

ID = Identification
MW = Groundwater monitoring well
TOC = Top of casing
DTW = Depth to groundwater
ft bTOC = Feet below top of casing
ft = Feet
[ ] = Duplicate Sample Results
GW Elev = Groundwater elevation
µg/L = Micrograms per liter
Bold = At or above the method detection limit (MDL)
Bold and Shaded Value exceeds ADEC Groundwater Cleanup Level
<0.014 = Not detected at or above MDL
NAVD88 = North American Vertical Datum of 1988
* = Depth to water taken from wells resurveyed on 06/05/2019
-- = Unavailable
LNAPL = Light non-aqueous phase liquid

TPH-g = Total petroleum hydrocarbons, gasoline range by LUFT GC/MS according to United States Environmental Protection Agency (USEPA) Method AK 101
TPH-d = Total petroleum hydrocarbons, diesel range by LUFT GC/MS according to USEPA Method AK 102-SV 4/8/02
Samples analyzed by USEPA Method 8260B:
Benzene, toluene, ethylbenzene and total xylenes (collectively BTEX)
MTBE = Methyl tert-butyl ether
J = The compound was positively identified; however, the associated numerical value is an estimated concentration only
UB {represented as < [MDL] B} = Compound is considered non-detect at the listed value due to associated blank contamination

Data QA/QC by: AK 12/18/2018

Table 2. Historical Groundwater Gauging and Analytical Results
Third Quarter 1986 to Current
Former Unocal Station 4652
Chevron Site 306448
1441 C Street, Anchorage, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft amsl)	DTW (ft bTOC)	LNAPL thickness (ft)	GW Elev (ft amsl)	TPH (mg/L)	TPH-g (mg/L)	TPH-d (mg/L)	Oil and Grease	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	HVOCs (mg/L)	EDB (mg/L)	EDC (mg/L)	Comments
ADEC Groundwater Cleanup Levels							**--**	**2.2**	**1.5**	**--**	**0.0046**	**1.1**	**0.015**	**0.19**	**0.14**	**--**	**0.000075**	**0.0017**	
MW-1	9/6/1986		--	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-1	3/19/1987		--	--	0.00	--	**0.3**	--	--	**0.84**	**7.39**	**3.19**	**0.054**	**1.136**	--	--	--	--	
MW-1	10/9/1987		--	--	0.00	--	**3.52**	--	--	--	**22.6**	**1.1**	**0.046**	**0.402**	--	--	--	--	
MW-1	1/16/1988		--	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-2	3/19/1987		--	--	0.00	--	**6.8**	--	--	**13**	**8.28**	**21.1**	**4.26**	**13.48**	--	--	--	--	
MW-2	10/9/1987		--	--	0.00	--	**7.69**	--	--	--	**18.1**	**29.9**	**3.28**	**12.87**	--	--	--	--	
MW-2	1/16/1988		--	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-3	8/2/1986		100.07	5.19	0.00	94.88	--	--	--	--	--	--	--	--	--	--	--	--	
MW-3	9/6/1986		--	--	--	--	--	--	--	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-3	9/22/1986		100.07	5.29	0.00	94.78	--	--	--	--	--	--	--	--	--	--	--	--	
MW-3	3/19/1987		100.07	6.79	0.00	93.28	**0.7**	--	--	**1.7**	**0.694**	**0.012**	**0.069**	**0.275**	--	--	--	--	
MW-3	10/9/1987		100.07	5.33	0.00	94.74	**0.26**	--	--	--	**0.23**	**0.028**	**0.0175**	**0.275**	--	--	--	--	
MW-3	1/16/1988		100.07	6.45	0.00	93.62	**0.012**	--	--	**0.31**	**0.653**	**0.007**	**0.06**	**0.215**	--	--	--	--	
MW-3	05/03/88		100.07	3.89	0.00	96.18	**2.4**	--	--	**7.7**	**0.002**	<0.0002	<0.0002	**0.0019**	--	--	--	--	
MW-3	07/26/88		100.07	5.21	0.00	94.86	**1.1**	--	--	--	**0.56**	<0.001	**0.0098**	<0.001	--	--	--	--	
MW-3	11/17/88		100.07	5.45	0.00	94.62	**1.3**	--	--	--	**1.1**	**0.0075**	**0.4**	**2.4**	--	--	--	--	
MW-3	03/13/89		100.07	6.89	0.00	93.18	**1.5**	--	--	--	**0.87**	**0.0068**	**0.034**	**0.29**	--	--	--	--	
MW-3	07/26/89		100.07	4.85	0.00	95.22	**0.8**	--	--	--	**0.16**	**0.023**	**0.0079**	**0.066**	--	--	--	--	
MW-3	10/9/1989		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	8/2/1986		102.17	5.16	0.00	97.01	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	9/22/1986		102.17	4.77	0.00	97.4	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	10/8/1987		102.17	5.34	0.00	96.83	**0.15**	--	--	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-4	1/15/1988		102.17	5.96	0.00	96.21	**0.15**	--	--	**0.17**	<0.001	**0.0033**	<0.001	<0.001	--	--	--	--	
MW-4	5/3/1988		102.17	4.29	0.00	97.88	**0.8**	--	--	**7.4**	<0.0002	<0.0002	<0.0002	<0.0002	--	--	--	--	
MW-4	7/26/1988		102.17	5.1	0.00	97.07	<0.5	--	--	--	**0.0002**	<0.0002	<0.0002	<0.0002	--	--	--	--	
MW-4	11/17/1988		102.17	5.38	0.00	96.79	<0.4	--	--	--	**0.0002**	**0.0005**	**0.0003**	**0.0014**	--	--	--	--	
MW-4	3/13/1989		102.17	6.3	0.00	95.87	**0.45**	--	--	--	<0.0002	**0.0003**	<0.0002	**0.0009**	--	**0.0045**	--	--	
MW-4	7/26/1989		102.17	4.1	0.00	98.07	<0.4	--	--	--	<0.0002	<0.0002	<0.0002	<0.0002	--	--	--	--	
MW-4	9/27/1990		102.17	5.35	0.00	96.82	<0.4	--	--	--	**0.003**	<0.0002	<0.0002	<0.0002	--	--	--	--	
MW-4	10/9/1990		102.17	5.1	0.00	97.07	**2**	--	--	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-4	3/28/1991		102.17	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	4/19/1991		102.17	5.67	0.00	96.5	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	5/15/1991		102.17	6.04	0.00	96.13	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	7/12/1991		102.17	6.56	0.00	95.61	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	9/26/1991		105.29	9.01	0.00	96.28	<1	<0.1	<0.10	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-4	10/11/1991		105.29	9.32	0.00	95.97	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	1/10/1992		105.29	9.1	0.00	96.19	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	2/17/1992		105.29	10.06	0.00	95.23	<1	<0.1	<0.10	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-4	3/31/1992		105.29	8.91	0.00	96.38	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	5/19/1992		105.29	8.94	0.00	96.35	<1 [<1]	<0.1 [<0.1]	**14 [16]**	--	<0.001 [<0.001]	<0.001 [<0.001]	<0.001 [<0.001]	<0.001 [<0.001]	--	--	--	--	
MW-4	6/30/1992		105.29	8.9	0.00	96.39	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	7/15/1992		105.29	9.15	0.00	96.14	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	8/28/1992		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	10/4/2007		72.25	7.79	0.00	64.46	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	6/19/2008		72.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	8/28/2008		73.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	5/19/2011		73.14	8.64	0.00	64.5	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	5/28/2012		73.14	8.52	0.00	64.62	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	7/31/2012		73.14	8.79	0.00	64.35	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	5/8/2013		73.14	7.55	0.00	65.59	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	9/17/2013		73.14	7.77	0.00	65.37	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	6/7/2014		73.14	8.67	0.00	64.47	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	11/4/2014		73.14	8.82	0.00	64.32	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	4/27/2015		73.14	8.83	0.00	64.31	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	10/23/2015		73.14	7.8	0.00	65.34	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	5/17/2016		73.14	8.68	0.00	64.46	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	9/15/2016		73.14	7.91	0.00	65.23	--	--	--	--	--	--	--	--	--	--	--	--	

Table 2. Historical Groundwater Gauging and Analytical Results
Third Quarter 1986 to Current
Former Unocal Station 4652
Chevron Site 306448
1441 C Street, Anchorage, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft amsl)	DTW (ft bTOC)	LNAPL thickness (ft)	GW Elev (ft amsl)	TPH (mg/L)	TPH-g (mg/L)	TPH-d (mg/L)	Oil and Grease	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	HVOCs (mg/L)	EDB (mg/L)	EDC (mg/L)	Comments
ADEC Groundwater Cleanup Levels							**--**	**2.2**	**1.5**	**--**	**0.0046**	**1.1**	**0.015**	**0.19**	**0.14**	**--**	**0.000075**	**0.0017**	
MW-4	5/9/2017		73.14	8.37	0.00	64.77	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	9/1/2017		73.14	8.11	0.00	65.03	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	6/7/2018		73.14	8.78	0.00	64.36	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	10/10/2018		73.14	8.63	0.00	64.51	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4	5/11/2019		79.69	8.35	0.00	71.34	--	--	--	--	--	--	--	--	--	--	--	--	Depth to water measured on 06/05/2019
MW-5	8/2/1986		105.38	7.14	0.00	98.24	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	9/22/1986		105.38	7.98	0.00	97.4	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	3/19/1987		105.38	8.04	0.00	97.34	**0.06**	--	--	**0.19**	**0.0033**	**0.0074**	**0.0047**	<0.0154	--	--	--	--	
MW-5	10/9/1987		105.38	7.21	0.00	98.17	**0.16**	--	--	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	Unable to locate
MW-5	1/16/1988		105.38	7.78	0.00	97.6	**0.6**	--	--	**2.7**	<0.001	**13**	**0.025**	**0.054**	--	--	--	--	
MW-5	5/3/1988		105.38	6.03	0.00	99.35	**1.3**	--	--	**5.8**	<0.0002	<0.0002	<0.0002	<0.0002	--	--	--	--	
MW-5	7/26/1988		105.38	6.99	0.00	98.39	<0.5	--	--	--	<0.0002	**0.0004**	<0.0002	<0.0002	--	--	--	--	
MW-5	11/17/1988		105.38	7.13	0.00	98.25	<0.4	--	--	--	<0.0002	**0.0008**	**0.0003**	**0.0015**	--	--	--	--	
MW-5	3/13/1989		105.38	8.25	0.00	97.13	<0.6	--	--	--	<0.0002	**0.0003**	<0.0002	**0.0006**	--	--	--	--	
MW-5	7/26/1989		105.38	6.24	0.00	99.14	<0.4	--	--	--	<0.0002	<0.002	<0.0002	<0.0006	--	--	--	--	
MW-5	5/19/1990		--	--	--	--	**0.8**	--	--	--	<0.0002	<0.002	<0.0002	<0.0006	--	--	--	--	
MW-5	10/2/1990		105.38	6.52	0.00	98.86	**2.4**	--	--	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-5	3/28/1991		105.38	8.12	0.00	97.26	<1	--	--	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-5	4/19/1991		105.38	6.72	0.00	98.66	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	5/15/1991		105.38	6.81	0.00	98.57	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	7/12/1991		105.38	8.12	0.00	97.26	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	9/26/1991		105.38	10.47	0.00	94.91	<1	<0.1	<0.10	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-5	10/11/1991		105.38	10.71	0.00	94.67	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	1/10/1992		108.59	11.38	0.00	97.21	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	2/17/1992		108.59	11.66	0.00	96.93	<1	<0.1	<0.10	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-5	3/31/1992		108.59	11.11	0.00	97.48	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	5/19/1992		108.59	9.84	0.00	98.75	**1**	<0.1	**1.2**	-	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-5	6/30/1992		108.59	10.22	0.00	98.37	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	7/15/1992		108.59	10.45	0.00	98.14	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	8/28/1992		108.59	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	10/4/2007		74.94	9.4	0.00	65.54	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	6/19/2008		74.94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	8/28/2008		76.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	5/19/2011		76.35	9.84	0.00	66.51	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	5/28/2012		76.35	9.33	0.00	67.02	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	7/31/2012		76.35	9.96	0.00	66.39	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	5/8/2013		76.35	9.65	0.00	66.7	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	9/17/2013		76.35	8.85	0.00	67.5	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	6/7/2014		76.35	10.04	0.00	66.31	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	11/4/2014		76.35	10.14	0.00	66.21	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	4/27/2015		76.35	10.43	0.00	65.92	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	10/23/2015		76.35	9.09	0.00	67.26	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	5/17/2016		76.35	10.08	0.00	66.27	--	<0.010	**0.061 J**	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	
MW-5	9/15/2016		76.35	9.83	0.00	66.52	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	5/9/2017		76.35	9.53	0.00	66.82	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	9/1/2017		76.35	9.31	0.00	67.04	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	6/7/2018		76.35	9.89	0.00	66.46	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	10/10/2018		76.35	9.99	0.00	66.36	--	--	--	--	--	--	--	--	--	--	--	--	
MW-5	5/11/2019		83.02	9.13	0.00	73.89	--	--	--	--	--	--	--	--	--	--	--	--	Depth to water measured on 06/05/2019
MW-6	8/2/1986		101.56	5.54	5.54	96.02	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	9/6/1986		101.56	--	0.00	--	--	--	--	--	**14**	**17**	**2.1**	**14**	--	--	--	--	
MW-6	9/22/1986		101.56	5.68	0.00	95.88	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6	3/19/1987		101.56	7.27	0.00	94.29	**12**	--	--	**24**	**14.3**	**19**	**2.39**	**14.5**	--	--	--	--	
MW-6	10/9/1987		101.56	6.01	0.00	95.55	**11.3**	--	--	--	**18.7**	**31.2**	**2.77**	**18.74**	--	--	--	--	
MW-6	1/16/1988		101.56	6.75	0.00	94.81	**6.6**	--	--	**9.4**	**23.9**	**28.4**	**1.85**	**17.9**	--	--	--	--	
MW-6	5/3/1988		101.56	4.46	0.00	97.10	**6.8**	--	--	**7.6**	**1.4**	**3.6**	**0.59**	**5.8**	--	--	--	--	
MW-6	7/26/1988		101.56	5.60	0.00	95.96	**10.1**	--	--	--	**15**	**27**	**1.4**	**13**	--	--	--	--	
MW-6	11/17/1988		101.56	5.99	0.00	95.57	**6.9**	--	--	--	**16**	**24**	**2.8**	**16**	--	ND	--	--	
MW-6	3/13/1989		101.56	6.46	0.00	95.10	**12.8**	--	--	--	**8.5 [10]**	**7.3 [8.7]**	**0.56 [0.76]**	**5.9 [4.4]**	--	--	--	--	

Table 2. Historical Groundwater Gauging and Analytical Results
Third Quarter 1986 to Current
Former Unocal Station 4652
Chevron Site 306448
1441 C Street, Anchorage, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft amsl)	DTW (ft bTOC)	LNAPL thickness (ft)	GW Elev (ft amsl)	TPH (mg/L)	TPH-g (mg/L)	TPH-d (mg/L)	Oil and Grease	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	HVOCs (mg/L)	EDB (mg/L)	EDC (mg/L)	Comments
ADEC Groundwater Cleanup Levels							--	2.2	1.5	--	0.0046	1.1	0.015	0.19	0.14	--	0.000075	0.0017	
MW-6	7/26/1989		101.56	4.98	0.00	96.58	10.7	--	--	--	17	23	10	14	--	--	--	--	
MW-6	10/9/1989		101.56	4.78	0.00	96.78	-	--	--	--	--	--	--	--	--	--	--	--	
MW-6	9/27/1990		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6A	10/9/1989		101.20	--	--	--	--	--	--	--	--	--	--	--	--	0.246	--	--	
MW-6A	9/27/1990		101.20	9.74	0.00	91.46	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6A	10/2/1990		101.20	9.84	0.00	91.36	14.8	--	--	--	0.706	1.13	0.11	0.975	--	--	--	--	
MW-6A	3/28/1991		101.20	9.89	0.00	91.31	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6A	5/15/1991		101.20	9.74	0.00	91.46	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6A	7/12/1991		101.20	10.38	0.00	90.82	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6A	9/26/1991		101.20	9.76	0.00	91.44	2.5	30	2.7	--	8.7	8.4	0.9	0.975	--	--	--	--	
MW-6A	10/11/1991		101.20	9.75	0.00	91.45	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6A	1/10/1992		101.20	10.08	0.00	91.12	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6A	2/17/1992		101.20	11.14	0.00	90.06	1.4	16	0.36	--	1.9	0.24	<0.001	<0.001	--	--	--	--	
MW-6A	3/31/1992		101.20	9.44	0.00	91.76	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6A	5/19/1992		101.20	7.82	0.00	93.38	<1	<0.1	78	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-6A	6/30/1992		101.20	9.58	0.00	91.62	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6A	7/15/1992		101.20	9.60	0.00	91.60	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6A	8/28/1992		101.20	9.64	0.00	91.56	--	--	--	--	2.7	1.3	0.71	2.62	--	--	--	--	
MW-6A	10/13/1992		101.20	5.63	0.00	95.57	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6A	11/21/1992		101.20	9.23	0.00	91.97	--	--	--	--	1.3 [1.7]	0.30 [0.31]	0.23 [0.22]	0.67 [0.68]	--	--	--	--	
MW-6A	12/17/1992		101.20	9.50	0.00	91.70	--	--	--	--	1.6	0.39	0.58	2.1	--	--	--	--	
MW-6A	1/25/1993		101.20	9.85	0.00	91.35	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6A	2/10/1993		101.20	9.91	0.00	91.29	--	--	--	--	1.1	0.003	0.35	0.55	--	--	--	--	
MW-6A	3/8/1993		101.20	9.91	0.00	91.29	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6A	3/16/1993		101.20	9.83	0.00	91.37	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6A	4/14/1993		101.20	9.37	0.00	91.83	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6A	5/5/1993		101.20	9.16	0.00	92.04	--	--	--	--	1.3	0.29	0.39	0.99	--	--	--	--	
MW-6A	6/15/1993		101.20	8.09	0.00	93.11	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6A	7/19/1993		101.20	8.58	0.00	92.62	--	--	--	--	--	--	--	--	--	--	--	--	
MW-6A	8/20/1993		101.20	11.28	0.00	89.92	--	--	--	--	1.8	<0.05	0.4	0.7	--	--	--	--	
MW-6A	3/20/1996		--	--	--	--	--	5.1	--	--	1.1	0.011	0.091	0.35	--	--	--	--	
MW-6A	3/19/1997		--	--	--	--	--	0.96	--	--	0.356	<0.00250	<0.00250	<0.00500	--	--	--	--	
MW-6A	12/10/1997		--	--	--	--	--	0.0988	--	--	0.045	<0.000500	<0.000500	<0.00100	--	--	--	--	
MW-6A	11/20/1998		--	--	--	--	--	0.115	--	--	0.0397	<0.000500	0.00338	0.0053	--	--	--	--	
MW-6A	1/19/2000		68.76	7.49	0.00	61.27	--	3.15	--	--	0.605	0.00464	0.104	0.4	--	--	--	--	
MW-7	8/2/1986		100.40	4.72	0.00	95.68	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	9/6/1986		100.40	--	--	--	--	--	--	--	2.4	4.9	0.39	5.6	--	--	--	--	
MW-7	9/22/1986		100.40	4.79	0.00	95.61	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	3/19/1987		100.40	4.59	0.00	95.81	18	--	--	27	6.03	12.3	2.66	13.9	--	--	--	--	
MW-7	10/9/1987		100.40	5.00	0.00	95.40	9.28	--	--	--	8.4	19.8	2.07	18	--	--	--	--	
MW-7	1/16/1988		100.40	5.72	0.00	94.68	3.2	--	--	7.1	8.2	3.9	2.4	17.5	--	--	--	--	
MW-7	5/3/1988		100.40	3.33	0.00	97.07	7.3	--	--	7.5	6.3	17	1.1	9.9	--	--	--	--	
MW-7	7/26/1988		100.40	4.68	0.00	95.72	10.6	--	--	--	6.4	15	1.5	11	--	--	--	--	
MW-7	11/17/1988		100.40	5.02	0.00	95.38	8	--	--	--	7.8	12	2.7	14	--	--	--	--	
MW-7	3/13/1989		100.40	6.35	0.00	94.05	8.9	--	--	--	8.1	8.5	0.63	4.2	--	--	--	--	
MW-7	7/26/1989		100.40	3.38	0.00	97.02	10.8	--	--	--	5	17	1.1	16	--	0.123	--	--	
MW-7	10/9/1989		100.40	3.76	0.00	96.64	--	--	--	--	--	--	--	--	--	--	--	--	
MW-7	5/19/1990		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	9/6/1986		96.80	--	--	--	--	--	--	--	0.2	0.031	<0.001	0.79	--	--	--	--	
MW-8	9/22/1986		96.80	6.31	0.00	90.49	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	3/19/1987		96.80	7.84	0.00	88.96	3.4	--	--	6.6	1.34	0.875	1.04	4.64	--	--	--	--	
MW-8	10/9/1987		96.80	6.50	0.00	90.30	0.26	--	--	-	0.116	0.608	0.0177	55.7	--	--	--	--	
MW-8	1/16/1988		96.80	7.28	0.00	89.52	0.57	--	--	4.5	0.278	0.394	0.046	0.304	--	--	--	--	
MW-8	5/3/1988		96.80	5.40	0.00	91.40	1.5	--	--	6.8	<0.0002	<0.0002	<0.0002	0.0006	--	--	--	--	
MW-8	7/26/1988		96.80	6.17	0.00	90.63	0.8	--	--	-	<0.0002	<0.0002	<0.0002	<0.0002	--	--	--	--	
MW-8	11/17/1988		96.80	6.57	0.00	90.23	0.6	--	--	--	0.097	0.0047	0.065	0.27	--	--	--	--	
MW-8	3/13/1989		96.80	8.43	0.00	88.37	3.8	--	--	--	1.4	0.061	0.97	4.9	--	ND	--	--	
MW-8	7/26/1989		96.80	5.86	0.00	90.94	1.6	--	--	--	0.91	0.0022	0.28	1.5	--	--	--	--	

Table 2. Historical Groundwater Gauging and Analytical Results
Third Quarter 1986 to Current
Former Unocal Station 4652
Chevron Site 306448
1441 C Street, Anchorage, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft amsl)	DTW (ft bTOC)	LNAPL thickness (ft)	GW Elev (ft amsl)	TPH (mg/L)	TPH-g (mg/L)	TPH-d (mg/L)	Oil and Grease	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	HVOCs (mg/L)	EDB (mg/L)	EDC (mg/L)	Comments
ADEC Groundwater Cleanup Levels							--	**2.2**	**1.5**	--	**0.0046**	**1.1**	**0.015**	**0.19**	**0.14**	--	**0.000075**	**0.0017**	
MW-8	10/9/1989		96.80	5.58	6.58	91.22	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	5/19/1990		96.80	--	--	--	**2.1**	--	--	--	<0.0002	<0.0002	<0.0002	<0.0002	--	**0.024**	--	--	
MW-8	10/2/1990		96.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	3/28/1991		96.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	5/15/1991		96.80	10.45	0.00	86.35	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	7/12/1991		96.80	10.20	0.00	86.60	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	9/26/1991		96.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	2/17/1992		96.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	5/18/1992		96.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	6/30/1992		96.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	8/28/1992		96.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	10/13/1992		96.80	8.20	0.00	88.60	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	11/21/1992		96.80	8.74	0.00	88.06	--	--	--	--	**2.0**	**0.01**	**0.18**	**0.82**	--	--	--	--	
MW-8	12/17/1992		96.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	1/25/1993		96.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	2/10/1993		96.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	3/8/1993		96.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	3/16/1993		96.80	10.18	0.00	86.62	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	4/14/1993		96.80	8.45	0.00	88.35	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	5/5/1993		96.80	8.45	0.00	88.35	--	--	--	--	**0.47**	<0.005	**0.016**	**0.02**	--	--	--	--	
MW-8	6/15/1993		96.80	8.98	0.00	87.82	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	7/19/1993		96.80	9.36	0.00	87.44	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	8/20/1993		96.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-8	3/20/1996		--	--	--	--	--	**6.5**	--	--	**1.2**	**0.013**	**0.036**	**1.4**	--	--	--	--	
MW-8	3/19/1997		--	--	--	--	--	**2.82**	--	--	**0.618**	**0.00545**	**0.0276**	**0.547**	--	--	--	--	
MW-8	12/10/1997		--	--	--	--	--	<0.0500	--	--	**0.00506**	<0.000500	**0.000568**	**0.00405**	--	--	--	--	
MW-8	11/20/1998		--	--	--	--	--	<0.0500	--	--	**0.0123**	<0.000500	**0.00156**	**0.00397**	--	--	--	--	
MW-8	1/19/2000		64.35	8.57	0.00	55.78	--	**10.1**	--	--	**0.535**	**0.197**	**0.748**	**4.09**	--	--	--	--	
MW-9	9/6/1986		100.00	--	--	--	--	--	--	--	**3.3**	**0.034**	**0.15**	**0.56**	--	--	--	--	
MW-9	9/22/1986		100.00	9.05	0.00	90.95	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	3/19/1987		100.00	10.03	0.00	89.97	**3.1**	--	--	**5.1**	**4.71**	**0.071**	**0.073**	**2.896**	--	--	--	--	
MW-9	10/9/1987		100.00	9.54	0.00	90.46	**2.24**	--	--	--	**5.43**	**0.607**	**0.0985**	**3.189**	--	--	--	--	
MW-9	1/16/1988		100.00	9.60	0.00	90.40	**0.44**	--	--	**0.96**	**4.8**	**0.583**	**0.492**	**1.894**	--	--	--	--	
MW-9	5/3/1988		100.00	8.02	0.00	91.98	**4.9**	--	--	**5.9**	**5.3**	**0.062**	<0.04	**0.96**	--	--	--	--	
MW-9	7/26/1988		100.00	6.30	0.00	93.70	**2.7**	--	--	--	**6.7**	**0.85**	**0.22**	**2.6**	--	--	--	--	
MW-9	11/17/1988		100.00	9.20	0.00	90.80	**1.7**	--	--	--	**6.2 [4.4]**	**0.2 [0.042]**	**0.63 [0.52]**	**1.8 [1.3]**	--	--	--	--	
MW-9	3/13/1989		100.00	10.86	0.00	89.14	**3.1**	--	--	--	**8.4**	**0.06**	**0.52**	**2**	--	ND	--	--	
MW-9	7/26/1989		100.00	8.77	0.00	91.23	**3.7**	--	--	--	**8.2**	**0.21**	<0.1	**0.96**	--	--	--	--	
MW-9	10/9/1989		100.00	7.96	0.00	92.04	--	--	--	--	--	--	--	--	--	**0.079**	--	--	
MW-9	5/19/1990		100.00	--	--	--	**1.7**	--	--	--	**4.09**	**0.019**	**0.16**	**0.822**	--	--	--	--	
MW-9	8/30/1990		100.00	--	--	--	--	--	--	--	**2**	**0.059**	<0.04	**0.4**	--	--	--	--	
MW-9	10/2/1990		100.00	9.70	0.00	90.30	**3.8**	--	--	--	**2.8**	**0.02**	**0.224**	**1.3**	--	--	--	--	
MW-9	3/28/1991		100.00	11.64	0.00	88.36	**13**	--	--	--	**1.93**	**0.008**	**0.077**	**0.353**	--	--	--	--	
MW-9	5/15/1991		100.00	9.65	0.00	90.35	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	7/12/1991		100.00	9.89	0.00	90.11	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	9/26/1991		100.00	10.06	0.00	89.94	<1	**0.7**	<0.1	--	**1.8**	**0.006**	**0.1**	**0.1**	--	--	--	--	
MW-9	10/11/1991		100.00	10.19	0.00	89.81	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	1/10/1992		100.00	10.78	0.00	89.22	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	2/17/1992		100.00	11.16	0.00	88.84	<1	**0.5**	<0.1	--	**0.13**	<0.001	<0.001	**0.013**	--	--	--	--	
MW-9	3/31/1992		100.00	10.97	0.00	89.03	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	5/19/1992		100.00	9.36	0.00	90.64	<1	<1	**3.6**	--	**0.24**	<0.05	<0.05	<0.05	--	--	--	--	
MW-9	6/30/1992		100.00	9.67	0.00	90.33	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	7/15/1992		100.00	9.90	0.00	90.10	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	8/28/1992		100.00	10.49	0.00	89.51	--	--	--	--	**0.91**	**0.004**	**0.014**	**0.015**	--	--	--	--	
MW-9	10/13/1992		100.00	9.90	0.00	90.10	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	11/21/1992		100.00	9.98	0.00	90.02	--	--	--	--	**1.1**	<0.001	**0.023**	**0.022**	--	--	--	--	
MW-9	12/17/1992		100.00	10.08	0.00	89.92	--	--	--	--	**0.35**	<0.001	**0.02**	**0.68**	--	--	--	--	
MW-9	1/25/1993		100.00	10.88	0.00	89.12	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	2/10/1993		100.00	11.14	0.00	88.86	--	--	--	--	**0.59**	<0.001	**0.013**	**0.012**	--	--	--	--	
MW-9	3/8/1993		100.00	11.53	0.00	88.47	--	--	--	--	--	--	--	--	--	--	--	--	

Table 2. Historical Groundwater Gauging and Analytical Results
Third Quarter 1986 to Current
Former Unocal Station 4652
Chevron Site 306448
1441 C Street, Anchorage, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft amsl)	DTW (ft bTOC)	LNAPL thickness (ft)	GW Elev (ft amsl)	TPH (mg/L)	TPH-g (mg/L)	TPH-d (mg/L)	Oil and Grease	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	HVOCs (mg/L)	EDB (mg/L)	EDC (mg/L)	Comments
ADEC Groundwater Cleanup Levels							--	**2.2**	**1.5**	--	**0.0046**	**1.1**	**0.015**	**0.19**	**0.14**	--	**0.000075**	**0.0017**	
MW-9	3/16/1993		100.00	11.52	0.00	88.48	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	4/14/1993		100.00	10.57	0.00	89.43	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	5/5/1993		100.00	9.80	0.00	90.20	--	--	--	--	**0.41**	<0.005	<0.005	<0.01	--	--	--	--	
MW-9	6/15/1993		100.00	9.69	0.00	90.31	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	7/19/1993		100.00	10.38	0.00	89.62	--	--	--	--	--	--	--	--	--	--	--	--	
MW-9	8/20/1993		100.00	10.74	0.00	89.26	--	--	--	--	**0.78**	**0.02**	<0.01	**0.03**	--	--	--	--	
MW-9	3/20/1996		--	--	--	--	--	**0.9**	--	--	**0.29**	<0.00050	**0.0089**	**0.01**	--	--	--	--	
MW-9	3/19/1997		--	--	--	--	--	**0.46**	--	--	**0.165**	<0.00250	**0.00332**	<0.00500	--	--	--	--	
MW-9	12/10/1997		--	--	--	--	--	<0.0500	--	--	**0.0176**	<0.000500	<0.000500	<0.00100	--	--	--	--	
MW-9	11/20/1998		--	--	--	--	--	**0.121**	--	--	**0.064**	<0.000500	**0.00139**	**0.00207**	--	--	--	--	
MW-9	1/19/2000		67.52	10.44	0.00	57.08	--	<0.0500	--	--	**0.0154**	<0.000500	<0.000500	<0.00100	--	--	--	--	
MW-10	9/6/1986		96.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-10	9/22/1986		96.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-10	1/16/1987		96.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-10	3/19/1987		96.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-10	10/9/1987		96.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-10	5/3/1988		96.81	4.72	0.00	92.09	--	--	--	--	<0.0004	<0.0004	<0.0004	<0.0012	--	--	--	--	
MW-10	7/26/1988		96.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-10	11/17/1988		96.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-10	3/13/1989		96.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-10	7/26/1989		96.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-10	10/9/1989		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11	9/6/1986		103.04	--	--	--	--	--	--	--	**33**	**25**	**3.9**	**20**	--	--	--	--	
MW-11	9/22/1986		103.04	6.04	0.00	97.00	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11	3/19/1987		103.04	6.01	0.00	97.03	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11	10/9/1987		103.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11	1/16/1988		103.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11	5/3/1988		103.04	6.23	0.00	96.81	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11	7/26/1988		103.04	5.96	0.00	97.08	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11	11/17/1988		103.04	5.93	0.00	97.11	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11	3/13/1989		103.04	5.79	0.00	97.25	**97**	--	--	--	**92**	**83**	**4.5**	**36**	--	--	--	--	
MW-11	7/26/1989		103.04	5.93	0.00	97.11	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11	10/9/1989		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11A	9/27/1990		105.46	11.76	0.00	93.70	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11A	10/1/1990		105.46	12.42	0.00	93.04	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11A	10/9/1990		105.46	--	--	--	**3.8**	--	--	--	**2.08**	**0.188**	<0.001	**0.09**	--	--	--	--	
MW-11A	3/28/1991		105.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11A	4/19/1991		105.46	11.10	0.00	94.36	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11A	5/15/1991		105.46	11.54	0.00	93.92	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11A	7/12/1991		105.46	11.28	0.00	94.18	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11A	9/26/1991		105.46	11.45	0.00	94.01	**1.5**	**10**	**0.17**	--	**6.4**	**0.91**	<0.001	**0.9**	--	--	--	--	
MW-11A	10/11/1991		105.46	11.69	0.00	93.77	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11A	1/10/1992		104.90	12.04	0.00	92.86	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11A	2/17/1992		104.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11A	3/31/1992		104.90	11.75	0.00	93.15	-	-	-	--	--	--	--	--	--	--	--	--	
MW-11A	5/19/1992		104.90	10.64	0.00	94.26	**2.5**	**7.4**	**11**	--	**2**	<0.05	**0.09**	**0.84**	--	--	--	--	
MW-11A	6/30/1992		104.90	11.41	0.00	93.49	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11A	7/15/1992		104.90	11.53	0.00	93.37	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11A	8/28/1992		104.90	11.49	0.00	93.41	--	--	--	--	**3.5**	**0.099**	**0.5**	**1.84**	--	--	--	--	
MW-11A	10/13/1992		104.90	9.29	0.00	95.61	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11A	11/21/1992		104.90	11.42	0.00	93.48	--	--	--	--	**2.5**	**0.0036**	**0.19**	**0.59**	--	--	--	--	
MW-11A	12/17/1992		104.90	11.52	0.00	93.38	--	--	--	--	**4.1**	<0.05	**0.33**	**3**	--	--	--	--	
MW-11A	1/25/1993		104.90	11.89	0.00	93.01	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11A	2/10/1993		104.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11A	3/8/1993		104.90	11.95	0.00	92.95	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11A	3/16/1993		104.90	11.90	0.00	93.00	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11A	4/14/1993		104.90	11.60	0.00	93.30	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11A	5/5/1993		104.90	11.59	0.00	93.31	--	--	--	--	--	--	--	--	--	--	--	--	

Table 2. Historical Groundwater Gauging and Analytical Results
Third Quarter 1986 to Current
Former Unocal Station 4652
Chevron Site 306448
1441 C Street, Anchorage, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft amsl)	DTW (ft bTOC)	LNAPL thickness (ft)	GW Elev (ft amsl)	TPH (mg/L)	TPH-g (mg/L)	TPH-d (mg/L)	Oil and Grease	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	HVOCs (mg/L)	EDB (mg/L)	EDC (mg/L)	Comments
ADEC Groundwater Cleanup Levels							--	**2.2**	**1.5**	--	**0.0046**	**1.1**	**0.015**	**0.19**	**0.14**	--	**0.000075**	**0.0017**	
MW-11A	6/15/1993		104.90	11.04	0.00	93.86	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11A	7/19/1993		104.90	11.20	0.00	93.70	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11A	8/20/1993		104.90	9.41	0.00	95.49	--	--	--	--	**4.7**	<0.10	**1.1**	**3.9**	--	--	--	--	
MW-11A	3/29/2005		71.09	--	--	--	--	**3.21**	<0.42	--	**0.254**	**0.00201**	**0.0131**	**0.834**	--	--	--	--	
MW-11A	12/31/2005		71.09	--	--	--	--	**4.47**	**0.567**	--	**0.236**	<0.005	**0.00985**	**0.981**	--	--	--	--	
MW-11A	6/30/2006		71.09	--	--	--	--	**3.71**	<0.39	--	**0.194**	<0.005	**0.015**	**0.906**	--	--	--	--	
MW-11A	9/18/2006		71.09	--	--	--	--	**4.9**	**0.79**	--	**0.24**	**0.0013**	**0.014**	**1.1**	--	--	--	--	
MW-11A	6/29/2007		71.09	--	--	--	--	**3.1**	**2.2**	--	**0.2**	**0.001**	**0.01**	**0.6**	--	--	--	--	
MW-11A	10/4/2007		71.09	8.54	0.00	62.55	--	--	**0.28**	--	**0.22**	**0.002**	**0.02**	**1.1**	--	--	<0.0000095	**6**	
MW-11A	6/19/2008		71.09	9.63	0.00	61.46	--	**4.9**	**0.28**	--	**0.2**	**0.002**	**0.03**	**0.7**	--	--	--	--	
MW-11A	8/28/2008		73.45	10.72	0.00	62.73	--	**4.2**	**0.37**	--	**0.2**	**0.001**	**0.01**	**0.7**	--	--	--	--	
MW-11A	5/14/2009		73.45	9.24	0.00	64.21	--	**3.5**	**0.44**	--	**0.18**	**0.0012**	**0.018**	**0.68**	--	--	--	--	
MW-11A	8/27/2009		73.45	9.02	0.00	64.43	--	**5.2**	**0.45**	--	**0.22**	**0.0019 J**	**0.021**	**1.2**	--	--	--	--	
MW-11A	6/8/2010		73.45	9.64	0.00	63.81	--	**3.4**	**0.36**	--	**0.15**	**0.0009 J**	**0.011**	**0.62**	--	--	--	--	
MW-11A	8/6/2010		73.45	8.55	0.00	64.90	--	**2.1**	**0.37**	--	**0.071**	<0.0025	**0.0047 J**	**0.59**	--	--	--	--	
MW-11A	5/19/2011		73.45	9.17	0.00	64.28	--	**2.6**	**0.51**	--	**0.14**	**0.0008 J**	**0.011**	**0.53**	--	--	--	--	
MW-11A	8/1/2011		73.45	9.99	0.00	63.46	--	**2.9**	**0.42**	--	**0.1**	**0.0005 J**	**0.0089**	**0.62**	--	--	--	--	
MW-11A	5/28/2012		73.45	9.30	0.00	64.15	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11A	5/31/2012		--	--	--	--	--	**3.4**	**0.51**	--	**0.11**	**0.0008 J**	**0.0094**	**0.67**	--	--	--	--	
MW-11A	7/31/2012		73.45	9.49	0.00	63.96	--	**3.6 J**	**0.38**	--	**0.12**	**0.0007 J**	**0.0099**	**0.74**	--	--	--	--	
MW-11A	5/8/2013		73.45	8.43	0.00	65.02	--	**4.5**	**0.54 J**	--	**0.14 J**	**0.0015 J**	**0.019 J**	**0.95 J**	--	--	--	--	
MW-11AHS	5/8/2013		73.45	8.43	0.00	65.02	--	**2.2**	**0.43 J**	--	**0.13**	**0.00097 J**	**0.01**	**0.47**	--	--	--	--	
MW-11A	9/17/2013		73.45	8.35	0.00	65.10	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11A	9/18/2013		--	--	--	--	--	--	--	--	**0.11 J [0.0039 J]**	0.00097 J [<0.00023]	**0.0053 J [0.0016 J]**	**0.45 J [0.0018 J]**	--	--	--	--	
MW-11A	6/7/2014		73.45	9.48	0.00	63.97	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11A	6/11/2014		--	--	--	--	--	**4.1**	**0.46**	--	**0.13**	**0.00084 J**	**0.014**	**1.0 J**	--	--	--	--	
MW-11AHS	6/11/2014		--	--	--	--	--	**4**	**0.51**	--	**0.12**	**0.0017 J**	**0.011**	**0.9**	--	--	--	--	
MW-11A	11/4/2014		73.45	9.48	0.00	63.97	--	**4.9 J**	**0.5**	--	**0.12**	**0.00076 J**	**0.014**	**1.3**	--	--	--	--	
MW-11A	4/27/2015		73.45	9.37	0.00	64.08	--	**3.1**	**0.48**	--	**0.086**	**0.0006 J**	**0.0095**	**0.55**	--	--	--	--	
MW-11A	10/23/2015		73.45	8.40	0.00	65.05	--	**2.3**	**0.43**	--	**0.071**	<0.005	**0.006 J**	**0.58**	--	--	--	--	
MW-11A	5/17/2016		73.45	9.26	0.00	64.19	--	**3.8**	**0.29**	--	**0.094**	**0.0007 J**	**0.011**	**0.81**	--	--	--	--	
MW-11A	9/15/2016		73.45	8.56	0.00	64.89	--	**2.2**	**0.42**	--	**0.059**	<0.0005	**0.005**	**0.37**	--	--	--	--	
MW-11A	5/9/2017		73.45	8.64	0.00	64.81	--	**2.8**	**0.18 J**	--	**0.071**	<0.0005	**0.009**	**0.49**	--	--	--	--	
MW-11A	9/1/2017		73.45	8.54	0.00	64.91	--	**2.8**	**0.24 J**	--	**0.062**	<0.001	**0.007**	**0.55**	--	--	--	--	
MW-11A	6/7/2018		73.45	9.39	0.00	64.06	--	**4.2**	**0.21 J**	--	**0.086**	**0.0008 J**	**0.014**	**0.76**	--	--	<0.0005	**6**	
MW-11A	10/10/2018		73.45	9.44	0.00	64.01	--	**3.9**	**0.43**	--	**0.076**	**0.0006 J**	**0.012**	**1.2**	--	--	<0.0003	**6**	
MW-11A	5/11/2019		73.45	8.71	0.00	64.74	--	**4.0 [3.9]**	<0.32 B [<0.36 B]	--	**0.078 [0.078]**	<0.0006 B [<0.0006 B]	**0.013 [0.013]**	**0.98 [0.91]**	<0.0002 [<0.0002]	--	--	--	Depth to water measured on 06/05/2019
MW-12	11/17/1988		107.89	9.88	0.00	98.01	**0.5**	--	--	--	**0.0019**	**0.0061**	**0.0023**	**0.012**	--	--	--	--	
MW-12	3/13/1989		107.89	10.53	0.00	97.36	**0.6**	--	--	--	<0.0002	<0.0002	<0.0002	<0.0006	--	--	--	--	
MW-12	7/26/1989		107.89	9.76	0.00	98.13	<0.4	--	--	--	<0.0002	<0.0002	<0.0002	<0.0006	--	--	--	--	
MW-12	5/19/1990		107.89	--	--	--	**0.5**	--	--	--	**0.0003**	<0.0002	<0.0002	**0.007**	--	--	--	--	
MW-12	10/2/1990		107.89	9.65	0.00	98.24	**2.4**	--	--	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-12	3/28/1991		107.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	5/15/1991		107.89	8.89	0.00	99.00	--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	7/12/1991		107.89	9.43	0.00	98.46	--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	9/26/1991		107.89	9.55	0.00	98.34	<1	<0.1	<0.1	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-12	10/11/1991		107.89	10.36	0.00	97.53	--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	1/10/1992		107.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	2/17/1992		107.89	9.80	0.00	98.09	<1	<0.1	<0.1	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-12	5/19/1992		107.89	9.00	0.00	98.89	<1	<0.1	**5.5**	--	**0.002**	<0.001	<0.001	<0.001	--	--	--	--	
MW-12	6/30/1992		107.89	9.66	0.00	98.23	--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	7/15/1992		107.89	9.75	0.00	98.14	--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	8/28/1992		107.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	3/13/1988		101.86	10.33	0.00	91.53	**1.1**	--	--	--	<0.0002	<0.0002	<0.0002	<0.0006	--	--	--	--	
MW-13	7/26/1988		101.86	7.66	0.00	94.20	<0.4	--	--	--	<0.0002	<0.0002	<0.0002	<0.0006	--	--	--	--	
MW-13	11/17/1988		101.86	8.68	0.00	93.18	<0.4	--	--	--	**0.0003**	**0.0009**	**0.0013**	**0.0049**	--	--	--	--	
MW-13	5/19/1990		101.86	--	--	--	**0.4**	--	--	--	**0.0009**	<0.0002	<0.0002	**0.007**	--	--	--	--	
MW-13	10/2/1990		101.86	7.66	0.00	94.20	**2.6**	--	--	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-13	1/10/1991		101.86	9.04	0.00	92.82	--	--	--	--	-	-	-	-	--	--	--	--	

Table 2. Historical Groundwater Gauging and Analytical Results
Third Quarter 1986 to Current
Former Unocal Station 4652
Chevron Site 306448
1441 C Street, Anchorage, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft amsl)	DTW (ft bTOC)	LNAPL thickness (ft)	GW Elev (ft amsl)	TPH (mg/L)	TPH-g (mg/L)	TPH-d (mg/L)	Oil and Grease	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	HVOCs (mg/L)	EDB (mg/L)	EDC (mg/L)	Comments
ADEC Groundwater Cleanup Levels							--	**2.2**	**1.5**	--	**0.0046**	**1.1**	**0.015**	**0.19**	**0.14**	--	**0.000075**	**0.0017**	
MW-13	3/29/1991		101.86	7.66	0.00	94.20	<1	--	--	--	**0.001**	<0.001	<0.001	<0.001	--	--	--	--	
MW-13	5/15/1991		101.86	7.68	0.00	94.18	--	--	--	--	-	-	-	-	--	--	--	--	
MW-13	7/12/1991		101.86	7.41	0.00	94.45	--	--	--	--	-	-	-	-	--	--	--	--	
MW-13	9/26/1991		101.86	7.87	0.00	93.99	<1	<0.1	<0.1	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-13	10/11/1991		101.86	8.17	0.00	93.69	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	2/17/1992		101.86	9.30	0.00	92.56	<1	<0.1	<0.1	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-13	3/31/1992		101.86	8.97	0.00	92.89	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	5/19/1992		101.86	7.22	0.00	94.64	<1	<0.1	**2.2**	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-13	6/30/1992		101.86	7.81	0.00	94.05	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	7/15/1992		101.86	7.95	0.00	93.91	--	--	--	--	--	--	--	--	--	--	--	--	
MW-13	8/28/1992		101.86	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-14	3/13/1988		88.32	7.78	0.00	80.54	**0.77**	--	--	--	<0.0002	<0.0002	<0.0002	<0.0006	--	ND	--	--	
MW-14	7/26/1988		88.32	8.60	0.00	79.72	**0.5**	--	--	--	**0.0003**	<0.0002	<0.0002	<0.0006	--	--	--	--	
MW-14	5/19/1990		88.32	--	--	--	<0.4	--	--	--	<0.0002	<0.0002	<0.0002	<0.0006	--	--	--	--	
MW-14	10/2/1990		88.32	5.27	0.00	83.05	**2.6**	--	--	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-14	1/10/1991		88.32	7.47	0.00	80.85	--	--	--	--	--	--	--	--	--	--	--	--	
MW-14	3/29/1991		88.32	8.24	0.00	80.08	<1	--	--	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-14	5/15/1991		88.32	5.83	0.00	82.49	--	--	--	--	--	--	--	--	--	--	--	--	
MW-14	7/12/1991		88.32	8.80	0.00	79.52	--	--	--	--	--	--	--	--	--	--	--	--	
MW-14	9/26/1991		88.32	9.75	0.00	78.57	**1.1**	<0.1	<0.1	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-14	10/11/1991		88.32	9.62	0.00	78.70	--	--	--	--	--	--	--	--	--	--	--	--	
MW-14	2/17/1992		88.32	7.40	0.00	80.92	<1	<0.1	<0.1	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-14	3/31/1992		88.32	6.94	0.00	81.38	--	--	--	--	--	--	--	--	--	--	--	--	
MW-14	5/19/1992		88.32	6.20	0.00	82.12	<1	<0.1	**4.8**	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-14	6/30/1992		88.32	8.50	0.00	79.82	--	--	--	--	--	--	--	--	--	--	--	--	
MW-14	7/15/1992		88.32	9.00	0.00	79.32	--	--	--	--	--	--	--	--	--	--	--	--	
MW-14	8/28/1992		88.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-14	12/10/1997		--	--	--	--	--	<0.0500	--	--	<0.000500	<0.000500	<0.000500	<0.00100	--	--	--	--	
MW-14	11/20/1998		--	--	--	--	--	<0.0500	--	--	<0.000500	<0.000500	<0.000500	<0.00100	--	--	--	--	
MW-14	1/19/2000		53.79	7.70	0.00	46.09	--	<0.0500 [<0.0500]	--	--	<0.000500 [<0.000500]	**0.00230 [0.00176]**	<0.000500 [<0.000500]	<0.00100 [<0.00100]	--	--	--	--	
MW-15	3/13/1988		84.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-15	7/26/1988		84.65	8.46	0.00	76.19	<0.4	--	--	--	<0.0002	<0.0002	<0.0002	<0.0006	--	--	--	--	
MW-15	5/19/1990		84.65	--	--	--	<0.4	--	--	--	<0.0002	<0.0002	<0.0002	<0.0006	--	--	--	--	
MW-15	10/2/1990		84.65	4.06	0.00	80.59	**1.8**	--	--	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-15	1/10/1991		84.65	7.77	0.00	76.88	--	--	--	--	--	--	--	--	--	--	--	--	
MW-15	3/29/1991		84.65	7.80	0.00	76.85	<1	--	--	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-15	5/15/1991		84.65	5.34	0.00	79.31	--	--	--	--	--	--	--	--	--	--	--	--	
MW-15	7/12/1991		84.65	8.66	0.00	75.99	--	--	--	--	--	--	--	--	--	--	--	--	
MW-15	9/26/1991		84.65	9.77	0.00	74.88	**2**	<0.1	<0.1	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-15	10/11/1991		84.65	10.64	0.00	74.01	--	--	--	--	--	--	--	--	--	--	--	--	
MW-15	2/17/1992		84.65	7.46	0.00	77.19	<1	<0.1	<0.1	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-15	3/31/1992		84.65	6.78	0.00	77.87	--	--	--	--	--	--	--	--	--	--	--	--	
MW-15	5/19/1992		84.65	5.66	0.00	78.99	<1	<0.1	**2**	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-15	6/30/1992		84.65	7.97	0.00	76.68	--	--	--	--	--	--	--	--	--	--	--	--	
MW-15	7/15/1992		84.65	8.50	0.00	76.15	--	--	--	--	--	--	--	--	--	--	--	--	
MW-15	8/28/1992		84.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-15	12/10/1997		--	--	--	--	--	<0.0500	--	--	<0.000500	<0.000500	<0.000500	<0.00100	--	--	--	--	
MW-15	11/20/1998		--	--	--	--	--	<0.0500	--	--	<0.000500	<0.000500	<0.000500	<0.00100	--	--	--	--	
MW-15	1/19/2000		50.78	7.18	0.00	43.60	--	<0.0500	--	--	<0.000500	<0.000500	<0.000500	<0.00100	--	--	--	--	
MW-16	3/13/1988		90.13	13.88	0.00	76.25	**0.8**	--	--	--	<0.0002	<0.0002	<0.0002	<0.0006	--	--	--	--	
MW-16	7/26/1988		90.13	13.50	0.00	76.63	<0.4	--	--	--	<0.0002	<0.0002	<0.0002	<0.0006	--	--	--	--	
MW-16	5/19/1990		90.13	--	--	--	**0.5**	--	--	--	<0.0002	<0.0002	<0.0002	<0.0006	--	--	--	--	
MW-16	10/2/1990		90.13	12.82	0.00	77.31	**2.4**	--	--	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-16	1/10/1991		90.13	13.89	0.00	76.24	--	--	--	--	--	--	--	--	--	--	--	--	
MW-16	3/29/1991		90.13	13.55	0.00	76.58	<1	--	--	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-16	5/15/1991		90.13	13.32	0.00	76.81	--	--	--	--	--	--	--	--	--	--	--	--	
MW-16	7/12/1991		90.13	13.36	0.00	76.77	--	--	--	--	--	--	--	--	--	--	--	--	
MW-16	9/26/1991		90.13	13.64	0.00	76.49	**1.7**	<0.1	<0.1	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	

Table 2. Historical Groundwater Gauging and Analytical Results
Third Quarter 1986 to Current
Former Unocal Station 4652
Chevron Site 306448
1441 C Street, Anchorage, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft amsl)	DTW (ft bTOC)	LNAPL thickness (ft)	GW Elev (ft amsl)	TPH (mg/L)	TPH-g (mg/L)	TPH-d (mg/L)	Oil and Grease	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	HVOCs (mg/L)	EDB (mg/L)	EDC (mg/L)	Comments
ADEC Groundwater Cleanup Levels							--	**2.2**	**1.5**	--	**0.0046**	**1.1**	**0.015**	**0.19**	**0.14**	--	**0.000075**	**0.0017**	
MW-16	10/11/1991		90.13	13.66	0.00	76.47	--	--	--	--	--	--	--	--	--	--	--	--	
MW-16	2/17/1992		90.13	13.85	0.00	76.28	<1	<0.1	<0.1	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-16	3/31/1992		90.13	13.15	0.00	76.98	--	--	--	--	--	--	--	--	--	--	--	--	
MW-16	5/19/1992		90.13	13.26	0.00	76.87	<1	<0.1	**5.2**	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-16	6/30/1992		90.13	13.45	0.00	76.68	--	--	--	--	--	--	--	--	--	--	--	--	
MW-16	7/15/1992		90.13	13.60	0.00	76.53	--	--	--	--	--	--	--	--	--	--	--	--	
MW-16	8/28/1992		90.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-16	12/10/1997		--	--	--	--	--	<0.0500	--	--	<0.000500	<0.000500	<0.000500	<0.00100	--	--	--	--	
MW-16	11/20/1998		--	--	--	--	--	<0.0500	--	--	<0.000500	<0.000500	<0.000500	<0.00100	--	--	--	--	
MW-16	1/19/2000		55.07	14.11	0.00	40.96	--	<0.0500	--	--	<0.000500	**0.000601**	<0.000500	<0.00100	--	--	--	--	
MW-17	9/27/1990		96.67	11.21	0.00	85.46	--	--	--	--	--	--	--	--	--	--	--	--	
MW-17	10/2/1990		96.67	11.20	0.00	85.47	**1.8**	--	--	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-17	3/28/1991		96.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-17	5/15/1991		96.67	10.95	0.00	85.72	--	--	--	--	--	--	--	--	--	--	--	--	
MW-17	7/12/1991		96.67	11.72	0.00	84.95	--	--	--	--	--	--	--	--	--	--	--	--	
MW-17	9/26/1991		96.67	9.71	0.00	86.96	**2**	**0.4**	<0.1	--	**0.15**	<0.001	**0.006**	**0.014**	--	--	--	--	
MW-17	10/11/1991		96.67	10.07	0.00	86.60	--	--	--	--	--	--	--	--	--	--	--	--	
MW-17	1/10/1992		96.67	9.48	0.00	87.19	--	--	--	--	--	--	--	--	--	--	--	--	
MW-17	2/17/1992		96.67	9.56	0.00	87.11	<1	<0.1	<0.1	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-17	3/31/1992		96.67	9.08	0.00	87.59	--	--	--	--	--	--	--	--	--	--	--	--	
MW-17	5/19/1992		96.67	9.00	0.00	87.67	<1	<0.1	**83**	--	**0.081**	<0.001	<0.001	<0.001	--	--	--	--	
MW-17	6/30/1992		96.67	11.78	0.00	84.89	--	--	--	--	--	--	--	--	--	--	--	--	
MW-17	7/15/1992		96.67	12.15	0.00	84.52	--	--	--	--	--	--	--	--	--	--	--	--	
MW-17	8/28/1992		96.67	12.10	0.00	84.57	--	--	--	--	**0.066**	**0.003**	<0.001	<0.001	--	--	--	--	
MW-17	10/13/1992		96.67	9.59	0.00	87.08	--	--	--	--	--	--	--	--	--	--	--	--	
MW-17	11/21/1992		96.67	8.74	0.00	87.93	--	--	--	--	**0.027**	<0.001	<0.001	<0.001	--	--	--	--	
MW-17	12/17/1992		96.67	10.35	0.00	86.32	--	--	--	--	<0.001	<0.001	<0.001	<0.001	--	--	--	--	
MW-17	1/25/1993		96.67	11.99	0.00	84.68	--	--	--	--	--	--	--	--	--	--	--	--	
MW-17	2/10/1993		96.67	9.95	0.00	86.72	--	--	--	--	**0.048**	<0.001	<0.001	<0.002	--	--	--	--	
MW-17	3/8/1993		96.67	11.50	0.00	85.17	--	--	--	--	--	--	--	--	--	--	--	--	
MW-17	3/16/1993		96.67	11.04	0.00	85.63	--	--	--	--	--	--	--	--	--	--	--	--	
MW-17	4/14/1993		96.67	9.53	0.00	87.14	--	--	--	--	--	--	--	--	--	--	--	--	
MW-17	5/5/1993		96.67	8.86	0.00	87.81	--	--	--	--	<0.001	<0.001	<0.001	<0.002	--	--	--	--	
MW-17	6/15/1993		96.67	9.81	0.00	86.86	--	--	--	--	--	--	--	--	--	--	--	--	
MW-17	7/19/1993		96.67	10.30	0.00	86.37	--	--	--	--	--	--	--	--	--	--	--	--	
MW-17	8/20/1993		96.67	12.28	0.00	84.39	--	--	--	--	--	--	--	--	--	--	--	--	
MW-17	3/20/1996		--	--	--	--	--	**0.440 [0.460]**	--	--	**0.110 [0.110]**	<0.00050 [<0.00050]	**0.014 [0.013]**	**0.0035 [0.0034]**	--	--	--	--	
MW-17	3/19/1997		--	--	--	--	--	**0.544 [0.559]**	--	--	**0.144 [0.154]**	<0.00250 [<0.00250]	**0.0250 [0.0258]**	<0.00500 [0.0051]	--	--	--	--	
MW-17	12/10/1997		--	--	--	--	--	**0.443**	--	--	**0.0992**	**0.000669**	**0.0203**	**0.00171**	--	--	--	--	
MW-17	11/20/1998		--	--	--	--	--	**0.485**	--	--	**0.167**	**0.00114**	**0.0295**	**0.00065**	--	--	--	--	
MW-17	1/19/2000		61.99	9.56	0.00	52.43	--	**0.393**	--	--	**0.132**	**0.00112**	**0.0102**	**0.00273**	--	--	--	--	
MW-18	9/27/1990		97.12	8.79	0.00	88.33	--	--	--	--	--	--	--	--	--	--	--	--	
MW-18	10/2/1990		97.12	8.78	0.00	88.34	**3.8**	--	--	--	**3.21**	**0.004**	**0.003**	**0.005**	--	--	--	--	
MW-18	3/28/1991		97.12	10.22	0.00	86.90	--	--	--	--	--	--	--	--	--	--	--	--	
MW-18	5/15/1991		97.12	7.77	0.00	89.35	--	--	--	--	--	--	--	--	--	--	--	--	
MW-18	7/12/1991		97.12	9.41	0.00	87.71	--	--	--	--	--	--	--	--	--	--	--	--	
MW-18	9/26/1991		97.12	9.83	0.00	87.29	**1.7**	<0.1	<0.1	--	**0.16**	<0.001	<0.001	**0.0021**	--	--	--	--	
MW-18	10/11/1991		97.12	9.78	0.00	87.34	--	--	--	--	--	--	--	--	--	--	--	--	
MW-18	1/10/1992		97.12	9.72	0.00	87.40	--	--	--	--	--	--	--	--	--	--	--	--	
MW-18	2/17/1992		97.12	10.04	0.00	87.08	<1	**107**	<0.1	--	**4.1**	**0.012**	<0.001	<0.001	--	--	--	--	
MW-18	3/31/1992		97.12	9.19	0.00	87.93	--	--	--	--	--	--	--	--	--	--	--	--	
MW-18	5/19/1992		97.12	8.16	0.00	88.96	<1	**1.7**	**5.1**	--	**0.83**	<0.05	<0.05	<0.05	--	--	--	--	
MW-18	6/30/1992		97.12	9.11	0.00	88.01	--	--	--	--	--	--	--	--	--	--	--	--	
MW-18	7/15/1992		97.12	9.60	0.00	87.52	--	--	--	--	--	--	--	--	--	--	--	--	
MW-18	8/28/1992		97.12	10.98	0.00	86.14	--	--	--	--	--	--	--	--	--	--	--	--	
MW-18	10/13/1992		97.12	9.81	0.00	87.31	--	--	--	--	--	--	--	--	--	--	--	--	
MW-18	11/21/1992		97.12	9.13	0.00	87.99	--	--	--	--	**3.7**	**0.0038**	**0.0019**	**0.0016**	--	--	--	--	
MW-18	12/17/1992		97.12	8.70	0.00	88.42	--	--	--	--	**3.2 [2.7]**	<0.01 [0.01]	<0.01 /[<0.01]	<0.01 [<0.01]	--	--	--	--	
MW-18	1/25/1993		97.12	9.69	0.00	87.43	--	--	--	--	--	--	--	--	--	--	--	--	

Table 2. Historical Groundwater Gauging and Analytical Results
Third Quarter 1986 to Current
Former Unocal Station 4652
Chevron Site 306448
1441 C Street, Anchorage, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft amsl)	DTW (ft bTOC)	LNAPL thickness (ft)	GW Elev (ft amsl)	TPH (mg/L)	TPH-g (mg/L)	TPH-d (mg/L)	Oil and Grease	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	HVOCs (mg/L)	EDB (mg/L)	EDC (mg/L)	Comments
ADEC Groundwater Cleanup Levels							--	**2.2**	**1.5**	--	**0.0046**	**1.1**	**0.015**	**0.19**	**0.14**	--	**0.000075**	**0.0017**	
MW-18	2/10/1993		97.12	12.20	0.00	84.92	--	--	--	--	**2.6**	**0.004**	**0.003**	<0.002	--	--	--	--	
MW-18	3/8/1993		97.12	10.36	0.00	86.76	--	--	--	--	--	--	--	--	--	--	--	--	
MW-18	3/16/1993		97.12	10.38	0.00	86.74	--	--	--	--	--	--	--	--	--	--	--	--	
MW-18	4/14/1993		97.12	7.45	0.00	89.67	--	--	--	--	--	--	--	--	--	--	--	--	
MW-18	5/5/1993		97.12	7.69	0.00	89.43	--	--	--	--	**1.6**	<0.01	<0.01	<0.02	--	--	--	--	
MW-18	6/15/1993		97.12	9.09	0.00	88.03	--	--	--	--	--	--	--	--	--	--	--	--	
MW-18	7/19/1993		97.12	10.82	0.00	86.30	--	--	--	--	--	--	--	--	--	--	--	--	
MW-18	8/20/1993		97.12	11.28	0.00	85.84	--	--	--	--	--	--	--	--	--	--	--	--	
MW-18	3/19/1997		--	--	--	--	--	**2.37**	--	--	**0.892**	<0.00500	<0.00500	<0.0100	--	--	--	--	
MW-18	12/10/1997		--	--	--	--	--	**0.882 [0.406]**	--	--	**0.356 [0.162]**	<0.000500 [<0.000500]	<0.000500 [<0.000500]	<0.00100 [<0.00100]	--	--	--	--	
MW-18	11/20/1998		--	--	--	--	--	**0.601**	--	--	**1.95**	<0.000500	<0.000500	<0.00100	--	--	--	--	
MW-18	1/19/2000		62.51	9.38	0.00	53.13	--	**2.33**	--	--	**1.35**	<0.000500	<0.000500	<0.00100	--	--	--	--	
MW-19	3/29/2005		73.64	--	--	--	--	**2.01**	<0.40	--	**0.0143**	**0.0008**	**0.135**	**0.286**	--	--	--	--	
MW-19	12/31/2005		73.64	--	--	--	--	<0.05	<0.39	--	<0.005	<0.005	**0.00059**	<0.015	--	--	--	--	
MW-19	6/30/2006		73.64	--	--	--	--	**0.266**	<0.40	--	**0.00356**	<0.005	**0.031**	**0.0564**	--	--	--	--	
MW-19	9/18/2006		73.64	--	--	--	--	**4.6**	**1**	--	**0.027**	**0.0009**	**0.27**	**0.8**	--	--	--	--	
MW-19	6/29/2007		73.64	--	--	--	--	**0.2**	**0.35**	--	**0.002**	<0.001	**0.02**	**0.03**	--	--	--	--	
MW-19	10/4/2007		73.64	9.82	0.00	63.82	--	**2.6 [2.6]**	**0.66 [0.71]**	--	**0.02 [0.02]**	<0.001 [<0.001]	**0.2 [0.2]**	**0.5** [<0.5]	--	--	--	--	
MW-19	6/19/2008		73.64	10.58	0.00	63.06	--	**3.3**	**0.6**	--	<0.002	**0.001**	**0.2**	**0.4**	--	--	--	--	
MW-19	8/28/2008		75.65	10.68	0.00	64.97	--	**2**	**0.69**	--	**0.02**	<0.001	**0.1**	**0.3**	--	--	--	--	
MW-19	5/14/2009		75.65	10.54	0.00	65.11	--	**1.5**	**0.51**	--	**0.02**	<0.0005	**0.11**	**0.25**	--	--	--	--	
MW-19	8/27/2009		75.65	10.41	0.00	65.24	--	**2.2**	**0.56**	--	**0.024**	**0.0005 J**	**0.14**	**0.42**	--	--	--	--	
MW-19	6/8/2010		75.65	10.60	0.00	65.05	--	<0.010	**0.11 J**	--	<0.0005	<0.0005	<0.0005	<0.0015	--	--	--	--	
MW-19	8/6/2010		75.65	10.23	0.00	65.42	--	**0.97**	**0.44**	--	**0.013**	<0.0005	**0.06**	**0.13**	--	--	--	--	
MW-19	5/19/2011		75.65	10.44	0.00	65.21	--	<0.010	**0.19 J**	--	<0.0005	<0.0005	<0.0005	<0.0015	--	--	--	--	
MW-19	8/1/2011		75.65	10.81	0.00	64.84	--	**0.043 J**	**0.052 J**	--	**0.0015 J**	<0.0005	<0.0005	**0.0048 J**	--	--	--	--	
MW-19	5/28/2012		75.65	10.31	0.00	65.34	--	-	-	--	--	--	--	--	--	--	--	--	
MW-19	5/31/2012		--	--	--	--	--	**0.95**	**0.33**	--	**0.012**	**0.0007 J**	**0.037**	**0.12**	--	--	--	--	
MW-19	7/31/2012		75.65	10.55	0.00	65.10	--	**0.52**	**0.3**	--	**0.0094**	**0.0005 J**	**0.018**	**0.058**	--	--	--	--	
MW-19	5/8/2013		75.65	10.22	0.00	65.43	--	**0.88**	**0.37 J**	--	**0.0093**	<0.000077	**0.025**	**0.13**	--	--	--	--	
MW-19HS	5/8/2013		75.65	10.22	0.00	65.43	--	**0.28 J**	**0.83**	--	**0.0027**	<0.000077	**0.0052**	**0.031**	--	--	--	--	
MW-19	9/17/2013		75.65	9.72	0.00	65.93	--	--	--	--	--	--	--	--	--	--	--	--	
MW-19	9/18/2013		--	--	--	--	--	<0.050	**1.3**	--	<0.00024	<0.00023	<0.00024	<0.00072	--	--	--	--	
MW-19	6/7/2014		75.65	10.51	0.00	65.14	--	--	--	--	--	--	--	--	--	--	--	--	
MW-19	6/11/2014		--	--	--	--	--	**0.13**	**0.18 J**	--	**0.0014**	<0.00011	**0.0013**	**0.014**	--	--	--	--	
MW-19HS	6/11/2014		--	--	--	--	--	<0.050	**0.5**	--	<0.00015	<0.00011	<0.00016	<0.00040	--	--	--	--	
MW-19	11/4/2014		75.65	10.57	0.00	65.08	--	<0.050	**0.13 J**	--	**0.00044 J**	<0.00011	**0.00019 J**	<0.00040	--	--	--	--	
MW-19	4/27/2015		75.65	10.87	0.00	64.78	--	**0.11**	**0.096 J**	--	**0.0017 J**	<0.0005	<0.0005	<0.0015	--	--	--	--	
MW-19	10/23/2015		75.65	9.84	0.00	65.81	--	<0.010	**0.077 J**	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	
MW-19	5/17/2016		75.65	10.52	0.00	65.13	--	**0.03 J**	**0.056 J**	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	
MW-19	9/15/2016		75.65	10.32	0.00	65.33	--	<0.010	**0.081 J**	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	
MW-19	5/9/2017		75.65	10.31	0.00	65.34	--	**0.014 J**	**0.069 J**	--	<0.0005	<0.0005	<0.0005	**0.002**	--	--	--	--	
MW-19	9/1/2017		75.65	10.04	0.00	65.61	--	<0.010	**0.12 J**	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	
MW-19	6/7/2018		75.65	10.53	0.00	65.12	--	<0.010	<0.052	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	<0.5	<0.5	
MW-19	10/10/2018		75.65	10.49	0.00	65.16	--	<0.014	<0.12 J	--	<0.0002	<0.0002	<0.0002	<0.0005	--	--	<0.3	<2.0	
MW-19	5/11/2019		81.95	10.13	0.00	71.82	--	<0.014	<0.13 B	--	<0.0002	<0.0002	<0.0004	<0.001	<0.0002	--	--	--	Depth to water measured on 06/05/2019
MW-20	3/29/2005		71.21	--	--	--	--	**46.2 [45.9]**	**8.9 [8.63]**	--	**0.657 [0.665]**	**3.67 [3.72]**	**1.78 [1.77]**	**11.4 [11.5]**	--	--	--	--	
MW-20	12/31/2005		71.21	--	--	--	--	**60.1 [58.6]**	**10.1 [11]**	--	**0.844 [0.821]**	**5.73 [5.88]**	**1.78 [1.81]**	**12.6 [12.9]**	--	--	--	--	
MW-20	6/30/2006		71.21	--	--	--	--	**57.9 [58.5]**	**10.9 [10.7]**	--	**0.8 [0.788]**	**6.08 [6.04]**	**2.09 [2.08]**	**14.1 [14.1]**	--	--	--	--	
MW-20	9/18/2006		71.21	--	--	--	--	**23 [23]**	**5.6 [5.3]**	--	**0.35 [0.35]**	**0.73 [0.75]**	**0.94 [0.92]**	**6 [5.9]**	--	--	--	--	
MW-20	6/29/2007		71.21	--	--	--	--	**41 [43]**	--	--	**0.5 [0.5]**	**3.5 [3.7]**	**1.4 [1.4]**	**9.7 [9.4]**	--	--	--	--	
MW-20	10/4/2007		71.21	8.94	0.00	62.27	--	**29**	**5.3**	--	**0.3**	**1.2**	**1.2**	**7**	--	--	--	--	
MW-20	6/19/2008		71.21	9.88	0.00	61.33	--	**21 [19]**	**4.6 [4.3]**	--	**0.3 [0.2]**	**0.6 [0.5]**	**0.7 [0.7]**	**3.9 [4.2]**	--	--	--	--	
MW-20	8/28/2008		--	--	--	--	--	**24**	--	--	**0.3**	**1**	**0.9**	**5.3**	--	--	--	--	
MW-20	8/29/2008		73.73	9.98	0.00	63.75	--	**26**	**4.5**	--	**0.3**	**1.1**	**0.9**	**4.7**	--	--	--	--	
MW-20	5/14/2009		73.73	9.59	0.00	64.14	--	**35 [38]**	**5.4 J [3.9 J]**	--	**0.4 [0.37]**	**1.6 [1.5]**	**1.4 [1.5]**	**8.9 [9.2]**	--	--	--	--	
MW-20	8/27/2009		73.73	9.30	0.00	64.43	--	**17 [18]**	--	--	**0.19 [0.19]**	**0.48 [0.47]**	**0.79 [0.83]**	**5.3 [5.6]**	--	--	--	--	
MW-20	6/8/2010		73.73	9.91	0.00	63.82	--	**29 [28]**	**6.2 [6.1]**	--	**0.24 [0.24]**	**1.7 [1.7]**	**1 [1]**	**6.4 [6.2]**	--	--	--	--	
MW-20	8/6/2010		73.73	10.04	0.00	63.69	--	**39 [32]**	-	--	**0.28 [0.24]**	**2.9 [2.3]**	**1.5 [1.2]**	**9.5 [8]**	--	--	--	--	

Table 2. Historical Groundwater Gauging and Analytical Results
Third Quarter 1986 to Current
Former Unocal Station 4652
Chevron Site 306448
1441 C Street, Anchorage, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft amsl)	DTW (ft bTOC)	LNAPL thickness (ft)	GW Elev (ft amsl)	TPH (mg/L)	TPH-g (mg/L)	TPH-d (mg/L)	Oil and Grease	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	HVOCs (mg/L)	EDB (mg/L)	EDC (mg/L)	Comments
ADEC Groundwater Cleanup Levels							**--**	**2.2**	**1.5**	**--**	**0.0046**	**1.1**	**0.015**	**0.19**	**0.14**	**--**	**0.000075**	**0.0017**	
MW-20	5/19/2011		73.73	9.58	0.00	64.15	**--**	**34 [31]**	**6 [5.9]**	**--**	**0.41 [0.39]**	**2.6 [2.6]**	**1.4 [1.3]**	**8.1 [8]**	**--**	**--**	**--**	**--**	
MW-20	8/1/2011		73.73	10.23	0.00	63.50	**--**	**40 [35]**	**4.5 [5.3]**	**--**	**0.42 [0.35]**	**2.9 [2.4]**	**1.6 [1.4]**	**9.1 [8.1]**	**--**	**--**	**--**	**--**	
MW-20	5/28/2012		73.73	9.49	0.00	64.24	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-20	5/31/2012		--	--	--	--	**--**	**33 [30]**	**2.8 J [4.7 J]**	**--**	**0.27 [0.27]**	**1.4 [1.3]**	**1.2 [1.1]**	**8 [7.2]**	**--**	**--**	**--**	**--**	
MW-20	7/31/2012		73.73	9.80	0.00	63.93	**--**	**31 [36]**	**9.8 [11]**	**--**	**0.35 [0.27]**	**2.4 J [1.3 J]**	**1.6 [1.1]**	**11 J [6.3 J]**	**--**	**--**	**--**	**--**	
MW-20	5/8/2013		73.73	8.92	0.00	64.81	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-20	5/9/2013		--	--	--	--	**--**	**57.6 [55.8 J]**	**6.7 [7.5]**	**--**	**0.4 [0.39]**	**2.5 [2.7]**	**1.8 [1.7]**	**12.1 [12.7]**	**--**	**--**	**--**	**--**	
MW-20HS	5/9/2013		--	--	--	--	**--**	**34.7 [39.1]**	**4.9 [4.7]**	**--**	**0.2 [0.27]**	**1.3 [1.7]**	**0.92 [1.1]**	**6.4 [7.5]**	**--**	**--**	**--**	**--**	
MW-20	9/17/2013		73.73	8.83	0.00	64.90	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-20	9/18/2013		--	--	--	--	**--**	**45.6**	**5.9**	**--**	**0.33[0.33]**	**1.9 [2]**	**1.4 [1.4]**	**10 [8.6]**	**--**	**--**	**--**	**--**	
MW-20	6/7/2014		73.73	9.78	0.00	63.95	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-20	6/11/2014		--	--	--	--	**--**	**46.1 [48.5]**	**8.2 [8.1]**	**--**	**0.48 [0.35]**	**2.7 [2]**	**2.5 [1.9]**	**17.1 [12.5 J]**	**--**	**--**	**--**	**--**	
MW-20HS	6/11/2014		--	--	--	--	**--**	**54.3 [60.1]**	**9 [8.3]**	**--**	**0.52 [0.41]**	**4.8 [3.5 J]**	**2.9 [2.1]**	**19.3 [12.5 J]**	**--**	**--**	**--**	**--**	
MW-20	11/4/2014		73.73	9.77	0.00	63.96	**--**	**51.6 J [62.9 J]**	**9.3 [9.5]**	**--**	**0.31 [0.3]**	**2.1 [2.1]**	**2 [2]**	**15.6 [15.4]**	**--**	**--**	**--**	**--**	
MW-20	4/27/2015		73.73	10.18	0.00	63.55	**--**	**60 [62]**	**7.3 [7.3]**	**--**	**0.32 [0.31]**	**3.2 [3.4]**	**2.2 [2.4]**	**15 [16]**	**--**	**--**	**--**	**--**	
MW-20	10/23/2015		73.73	8.85	0.00	64.88	**--**	**3.4 [3.8]**	**2.1 [2.1]**	**--**	**0.031 [0.034]**	**0.02 [0.021]**	**0.11 [0.11]**	**0.83 [0.88]**	**--**	**--**	**--**	**--**	
MW-20	5/17/2016		73.73	9.62	0.00	64.11	**--**	**41 [41]**	**10 [9.5]**	**--**	**0.23 [0.24]**	**1.7 [1.7]**	**1.4 [1.5]**	**9.8 [10]**	**--**	**--**	**--**	**--**	
MW-20	9/15/2016		73.73	8.98	0.00	64.75	**--**	**17 [15]**	**5.8 [7.3]**	**--**	**0.15 [0.13]**	**0.41 [0.35]**	**0.68 [0.56]**	**4.4 [3.7]**	**--**	**--**	**--**	**--**	
MW-20	5/9/2017		73.73	9.11	0.00	64.62	**--**	**32 [29]**	**6.0 J [6.6]**	**--**	**0.17 J [0.081 J]**	**1.2 J [** <0.01 J]	**1.3 J [0.04 J]**	**8.8 J [4.9 J]**	**--**	**--**	**--**	**--**	
MW-20	9/1/2017		73.73	8.99	0.00	64.74	**--**	**13 [9.6]**	0.65 J **[2.9 J]**	**--**	**0.1 [0.11]**	**0.47 [0.49]**	**0.55 [0.54]**	**3.1 [3.3]**	**--**	**--**	**--**	**--**	
MW-20	6/7/2018		73.73	9.71	0.00	64.02	**--**	**46 [38]**	**4.7 [4.4]**	**--**	**0.18 [0.15]**	**1.3 [0.95]**	**1.5 [1.2]**	**9.9 [7.7]**	**--**	**--**	<5.0	**110**	
MW-20	10/10/2018		73.73	9.73	0.00	64.00	**--**	**19 [19]**	**3.7 [3.2]**	**--**	**0.12 [0.12]**	**0.54 [0.53]**	**0.88 [0.86]**	**5.8 [5.5]**	**--**	**--**	<2.0 [<2.0]	<10.0 /[<10.0]	
MW-20	5/11/2019		79.88	9.17	0.00	70.71	**--**	**27**	**4.9**	**--**	**0.11**	**1.100**	**0.76**	**7.2**	**0.0003 J**	**--**	**--**	**--**	Depth to water measured on 06/05/2019
MW-21	3/29/2005		62.30	-	-	-	**--**	<0.8	<0.40	**--**	**0.00635**	<0.005	<0.005	<0.001	**--**	**--**	**--**	**--**	
MW-21	12/31/2005		62.30	-	-	-	**--**	<0.05	<0.39	**--**	**0.00591**	<0.005	<0.005	<0.0015	**--**	**--**	**--**	**--**	
MW-21	6/30/2006		62.30	-	-	-	**--**	<0.05	<0.40	**--**	**0.0155**	<0.005	<0.005	<0.0015	**--**	**--**	**--**	**--**	
MW-21	9/18/2006		62.30	-	-	-	**--**	**0.051**	<0.24	**--**	**0.02**	<0.005	<0.005	<0.0005	**--**	**--**	**--**	**--**	
MW-21	6/29/2007		62.30	-	-	-	**--**	<0.01	**0.032**	**--**	**0.002**	<0.001	<0.001	<0.001	**--**	**--**	**--**	**--**	
MW-21	10/4/2007		62.30	7.15	0.00	55.15	**--**	**0.09**	**0.043**	**--**	**0.04**	<0.001	<0.001	<0.002	**--**	**--**	**--**	**--**	
MW-21	6/19/2008		62.30	7.21	0.00	55.09	**--**	**0.05**	**0.031**	**--**	**0.02**	<0.001	<0.001	<0.002	**--**	**--**	**--**	**--**	
MW-21	8/28/2008		62.87	7.49	0.00	55.38	**--**	**0.04**	**0.009**	**--**	**0.02**	<0.001	<0.001	<0.002	**--**	**--**	**--**	**--**	
MW-21	5/14/2009		62.87	7.24	0.00	55.63	**--**	**0.018**	<0.50	**--**	**0.0077**	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-21	8/27/2009		62.87	7.41	0.00	55.46	**--**	**0.028 J**	<0.052	**--**	**0.013**	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-21	6/8/2010		62.87	7.33	0.00	55.54	**--**	<0.010	**0.17 J**	**--**	**0.001 J**	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-21	8/6/2010		62.87	7.36	0.00	55.51	**--**	**0.015 J**	<0.050	**--**	**0.0064**	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-21	5/19/2011		62.87	7.32	0.00	55.55	**--**	**0.024 J**	**0.24 J**	**--**	**0.003**	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-21	8/1/2011		62.87	7.64	0.00	55.23	**--**	**0.020 J**	<0.049	**--**	**0.0078**	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-21	5/28/2012		62.87	7.21	0.00	55.66	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-21	5/31/2012		--	--	--	--	**--**	**0.014 J**	**0.55**	**--**	**0.0055**	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-21	7/31/2012		62.87	7.34	0.00	55.53	**--**	**0.020 J**	**0.066 J**	**--**	**0.0072**	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-21	5/8/2013		62.87	6.59	0.00	56.28	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-21	5/9/2013		--	--	--	--	**--**	**0.011 J**	**0.14 J**	**--**	**0.003**	<0.000077	<0.000081	<0.00022	**--**	**--**	**--**	**--**	
MW-21HS	5/9/2013		--	--	--	--	**--**	<0.0070	**0.73**	**--**	**0.00010 J**	<0.000077	<0.000081	<0.00022	**--**	**--**	**--**	**--**	
MW-21	9/17/2013		62.87	6.03	0.00	56.84	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-21	9/18/2013		--	--	--	--	**--**	<0.050	**2.4**	**--**	**0.0034**	<0.00023	<0.00024	<0.00072	**--**	**--**	**--**	**--**	
MW-21	6/7/2014		62.87	7.12	0.00	55.75	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-21	6/11/2014		--	--	--	--	**--**	<0.050	**0.071 J**	**--**	**0.0011**	<0.00011	<0.00016	<0.00040	**--**	**--**	**--**	**--**	
MW-21HS	6/11/2014		--	--	--	--	**--**	<0.050	**0.35 J**	**--**	<0.00015	<0.00011	<0.00016	<0.00040	**--**	**--**	**--**	**--**	
MW-21	11/4/2014		62.87	7.25	0.00	55.62	**--**	<0.050	**0.066 J**	**--**	**0.00023 J**	<0.00011	<0.00016	<0.00040	**--**	**--**	**--**	**--**	
MW-21	4/27/2015		62.87	7.31	0.00	55.56	**--**	<0.010	**0.066 J**	**--**	<0.0005	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-21	10/23/2015		62.87	6.22	0.00	56.65	**--**	<0.010	**0.16 J**	**--**	<0.0005	<0.0005	<0.0005	<0.0005	**--**	**--**	**--**	**--**	
MW-21	5/17/2016		62.87	6.23	0.00	56.64	**--**	<0.010	**0.16 J**	**--**	<0.0005	<0.0005	<0.0005	<0.0005	**--**	**--**	**--**	**--**	
MW-21	9/15/2016		62.87	7.13	0.00	55.74	**--**	<0.010	**0.53**	**--**	<0.0005	<0.0005	<0.0005	<0.0005	**--**	**--**	**--**	**--**	
MW-21	5/9/2017		62.87	6.24	0.00	56.63	**--**	<0.010	**0.099 J**	**--**	<0.0005	<0.0005	<0.0005	<0.0005	**--**	**--**	**--**	**--**	
MW-21	9/1/2017		62.87	6.59	0.00	56.28	**--**	<0.010	**0.19 J**	**--**	<0.0005	<0.0005	<0.0005	<0.0005	**--**	**--**	**--**	**--**	
MW-21	6/7/2018		62.87	6.95	0.00	55.92	**--**	<0.010	<0.054	**--**	<0.0005	<0.0005	<0.0005	<0.0005	**--**	**--**	<0.0005	<0.0005	
MW-21	10/10/2018		62.87	7.20	0.00	55.67	**--**	<0.014	<0.18 J	**--**	<0.0002	<0.0002	<0.0002	<0.0005	**--**	**--**	<0.0003	<0.002	
MW-21	5/11/2019		69.15	7.05	0.00	62.10	**--**	<0.014	<0.087 B	**--**	<0.0002	<0.0002	<0.0004	<0.001	<0.0002	**--**	**--**	**--**	Depth to water measured on 06/05/2019
MW-22	3/29/2005		60.59	--	--	--	**--**	<0.08	<0.40	**--**	<0.0005	<0.0005	<0.0005	<0.001	**--**	**--**	**--**	**--**	

Table 2. Historical Groundwater Gauging and Analytical Results
Third Quarter 1986 to Current
Former Unocal Station 4652
Chevron Site 306448
1441 C Street, Anchorage, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft amsl)	DTW (ft bTOC)	LNAPL thickness (ft)	GW Elev (ft amsl)	TPH (mg/L)	TPH-g (mg/L)	TPH-d (mg/L)	Oil and Grease	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	HVOCs (mg/L)	EDB (mg/L)	EDC (mg/L)	Comments
ADEC Groundwater Cleanup Levels							**--**	**2.2**	**1.5**	**--**	**0.0046**	**1.1**	**0.015**	**0.19**	**0.14**	**--**	**0.000075**	**0.0017**	
MW-22	12/31/2005		60.59	--	--	--	**--**	<0.05	<0.39	**--**	<0.0005	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-22	6/30/2006		60.59	--	--	--	**--**	<0.05	<0.41	**--**	<0.0005	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-22	9/18/2006		60.59	--	--	--	**--**	<0.01	<0.048	**--**	<0.0005	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-22	6/29/2007		60.59	--	--	--	**--**	<0.01	**0.066**	**--**	<0.001	<0.001	<0.001	<0.002	**--**	**--**	**--**	**--**	
MW-22	10/4/2007		60.59	6.21	0.00	54.38	**--**	-	**0.046**	**--**	<0.0005	<0.0005	<0.0005	<0.0005	**--**	**--**	<0.0000096	<0.0005	
MW-22	6/19/2008		60.59	7.22	0.00	53.37	**--**	<0.01	**0.053**	**--**	<0.001	<0.001	<0.001	<0.002	**--**	**--**	**--**	**--**	
MW-22	8/28/2008		60.88	7.73	0.00	53.15	**--**	<0.01	**0.092**	**--**	<0.001	<0.001	<0.001	<0.002	**--**	**--**	**--**	**--**	
MW-22	5/14/2009		60.88	6.41	0.00	54.47	**--**	<0.010	<0.50	**--**	<0.0005	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-22	8/27/2009		60.88	7.75	0.00	53.13	**--**	<0.010	<0.051	**--**	<0.0005	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-22	6/8/2010		60.88	7.32	0.00	53.56	**--**	<0.010	**0.36**	**--**	<0.0005	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-22	8/6/2010		60.88	7.74	0.00	53.14	**--**	<0.010	**0.12 J**	**--**	<0.0005	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-22	5/19/2011		60.88	7.38	0.00	53.50	**--**	<0.010	**0.23 J**	**--**	<0.0005	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-22	8/1/2011		60.88	8.21	0.00	52.67	**--**	<0.010	<0.048	**--**	<0.0005	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-22	5/28/2012		60.88	6.43	0.00	54.45	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-22	5/31/2012		--	--	--	--	**--**	<0.010	**1.2**	**--**	<0.0005	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-22	7/31/2012		60.88	7.84	0.00	53.04	**--**	<0.010	**0.055 J**	**--**	<0.0005	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-22	5/8/2013		60.88	5.57	0.00	55.31	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-22	5/9/2013		--	--	--	--	**--**	**0.021 J**	**0.35 J**	**--**	<0.000062	<0.000077	<0.000081	**0.00025 J**	**--**	**--**	**--**	**--**	
MW-22HS	5/9/2013		--	--	--	--	**--**	<0.0070	**0.31 J**	**--**	<0.000062	<0.000077	<0.000081	<0.00022	**--**	**--**	**--**	**--**	
MW-22	9/17/2013		60.88	5.43	0.00	55.45	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-22	9/18/2013		--	--	--	--	**--**	<0.050	**1.9**	**--**	<0.00024	**0.00025 J**	<0.00024	<0.00072	**--**	**--**	**--**	**--**	
MW-22	6/7/2014		60.88	7.35	0.00	53.53	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
MW-22	6/11/2014		--	--	--	--	**--**	<0.050 J	**0.094 J**	**--**	<0.00015 J	<0.00011 J	<0.00016 J	<0.00040 J	**--**	**--**	**--**	**--**	
MW-22HS	6/11/2014		--	--	--	--	**--**	<0.050	**0.54**	**--**	<0.00015 J	<0.00011 J	<0.00016 J	<0.00040 J	**--**	**--**	**--**	**--**	
MW-22	11/4/2014		60.88	7.66	0.00	53.22	**--**	<0.050	**0.26 J**	**--**	<0.00015	<0.00011	<0.00016	<0.00040	**--**	**--**	**--**	**--**	
MW-22	4/27/2015		60.88	7.33	0.00	53.55	**--**	<0.010	**0.051 J**	**--**	<0.0005	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-22	10/23/2015		60.88	5.55	0.00	55.33	**--**	<0.010	**0.060 J**	**--**	<0.0005	<0.0005	<0.0005	<0.0005	**--**	**--**	**--**	**--**	
MW-22	5/17/2016		60.88	6.55	0.00	54.33	**--**	<0.010	**0.14 J**	**--**	<0.0005	<0.0005	<0.0005	<0.0005	**--**	**--**	**--**	**--**	
MW-22	9/15/2016		60.88	7.19	0.00	53.69	**--**	<0.010	**0.43**	**--**	<0.0005	<0.0005	<0.0005	<0.0005	**--**	**--**	**--**	**--**	
MW-22	5/9/2017		60.88	4.89	0.00	55.99	**--**	**0.012 J**	**0.16 J**	**--**	**0.004**	**0.001**	**0.015**	**0.14**	**--**	**--**	**--**	**--**	
MW-22	9/1/2017		60.88	6.92	0.00	53.96	**--**	<0.010	**0.093 J**	**--**	<0.0005	<0.0005	<0.0005	<0.0005	**--**	**--**	**--**	**--**	
MW-22	6/7/2018		60.88	6.47	0.00	54.41	**--**	<0.10	<0.050	**--**	<0.0005	<0.0005	<0.0005	<0.0005	**--**	**--**	<0.0005	<0.0005	
MW-22	10/10/2018		60.88	7.76	0.00	53.12	**--**	<0.014	<0.16 J	**--**	<0.0002	<0.0002	<0.0002	<0.0005	**--**	**--**	<0.0003	<0.002	
MW-22	5/11/2019		67.26	6.60	0.00	60.66	**--**	<0.014	<0.21 B	**--**	<0.0002	<0.0002	<0.0004	<0.001	<0.0002	**--**	**--**	**--**	Depth to water measured on 06/05/2019
MW-23	3/29/2005		59.51	--	--	--	**--**	<0.08	<0.40	**--**	<0.0005	<0.0005	<0.0005	<0.001	**--**	**--**	**--**	**--**	
MW-23	12/31/2005		59.51	--	--	--	**--**	<0.05	<0.39	**--**	<0.0005	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-23	6/30/2006		59.51	--	--	--	**--**	<0.05	<0.39	**--**	<0.0005	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-23	9/18/2006		59.51	--	--	--	**--**	<0.01	<0.24	**--**	<0.0005	<0.0005	<0.0005	<0.001	**--**	**--**	**--**	**--**	
MW-23	6/29/2007		59.51	--	--	--	**--**	<0.01	**0.061**	**--**	<0.001	<0.001	<0.001	<0.002	**--**	**--**	**--**	**--**	
MW-23	10/4/2007		59.51	5.18	0.00	54.33	**--**	<0.01	**0.054**	**--**	<0.001	<0.001	<0.001	<0.002	**--**	**--**	**--**	**--**	
MW-23	6/19/2008		59.51	6.50	0.00	53.01	**--**	<0.01	**0.059**	**--**	<0.001	<0.001	<0.001	<0.002	**--**	**--**	**--**	**--**	
MW-23	8/28/2008		59.94	6.97	0.00	52.97	**--**	<0.01	**0.12**	**--**	<0.001	<0.001	<0.001	<0.002	**--**	**--**	**--**	**--**	
MW-23	5/14/2009		59.94	5.60	0.00	54.34	**--**	<0.010	<0.50	**--**	<0.0005	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-23	8/27/2009		59.94	6.87	0.00	53.07	**--**	<0.010	**0.051 J**	**--**	<0.0005	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-23	6/8/2010		59.94	6.21	0.00	53.73	**--**	<0.010	<0.50	**--**	<0.0005	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-23	8/6/2010		59.94	6.73	0.00	53.21	**--**	<0.010	**0.12 J**	**--**	<0.0005	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-23	5/19/2011		59.94	6.41	0.00	53.53	**--**	**0.013 J**	**0.24 J**	**--**	<0.0005	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-23	8/1/2011		59.94	7.29	0.00	52.65	**--**	<0.010	**0.050 J**	**--**	<0.0005	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-23	5/28/2012		59.94	5.51	0.00	54.43	**--**	-	**--**	**--**	-	-	-	-	**--**	**--**	**--**	**--**	
MW-23	5/31/2012		--	--	--	--	**--**	<0.010	**0.52**	**--**	<0.0005	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-23	7/31/2012		59.94	6.82	0.00	53.12	**--**	<0.010	**0.073 J**	**--**	<0.0005	<0.0005	<0.0005	<0.0015	**--**	**--**	**--**	**--**	
MW-23	5/8/2013		59.94	5.27	0.00	54.67	**--**	-	**--**	**--**	-	-	-	-	**--**	**--**	**--**	**--**	
MW-23	5/9/2013		--	--	--	--	**--**	**0.029 J**	**0.27 J**	**--**	<0.000062	<0.000077	<0.000081	<0.00022	**--**	**--**	**--**	**--**	
MW-23HS	5/9/2013		--	--	--	--	**--**	<0.0070	**0.27 J**	**--**	<0.000062	<0.000077	<0.000081	<0.00022	**--**	**--**	**--**	**--**	
MW-23	9/17/2013		59.94	4.71	0.00	55.23	**--**	-	**--**	**--**	-	-	-	-	**--**	**--**	**--**	**--**	
MW-23	9/18/2013		-	-	-	-	**--**	<0.050	**1.8**	**--**	<0.00024	<0.00023	<0.00024	<0.00072	**--**	**--**	**--**	**--**	
MW-23	6/7/2014		59.94	6.23	0.00	53.71	**--**	-	**--**	**--**	-	-	-	-	**--**	**--**	**--**	**--**	
MW-23	6/11/2014		--	--	--	--	**--**	<0.050	**0.13 J**	**--**	<0.00015 J	<0.00011 J	<0.00016 J	<0.00040 J	**--**	**--**	**--**	**--**	
MW-23HS	6/11/2014		--	--	--	--	**--**	<0.050	**0.086 J**	**--**	<0.00015	<0.00011	<0.00016	<0.00040	**--**	**--**	**--**	**--**	
MW-23	11/4/2014		59.94	6.69	0.00	53.25	**--**	<0.050	**0.14 J**	**--**	<0.00015	**0.00015 J**	**0.00024 J**	<0.00040	**--**	**--**	**--**	**--**	

Table 2. Historical Groundwater Gauging and Analytical Results
Third Quarter 1986 to Current
Former Unocal Station 4652
Chevron Site 306448
1441 C Street, Anchorage, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft amsl)	DTW (ft bTOC)	LNAPL thickness (ft)	GW Elev (ft amsl)	TPH (mg/L)	TPH-g (mg/L)	TPH-d (mg/L)	Oil and Grease	Benzene (mg/L)	Toluene (mg/L)	Ethyl-benzene (mg/L)	Total Xylenes (mg/L)	MTBE (mg/L)	HVOCs (mg/L)	EDB (mg/L)	EDC (mg/L)	Comments
ADEC Groundwater Cleanup Levels							--	**2.2**	**1.5**	--	**0.0046**	**1.1**	**0.015**	**0.19**	**0.14**	--	**0.000075**	**0.0017**	
MW-23	4/27/2015		59.94	5.98	0.00	53.96	--	<0.010	**0.12 J**	--	<0.0005	<0.0005	<0.0005	<0.0015	--	--	--	--	
MW-23	10/23/2015		59.94	4.53	0.00	55.41	--	**0.030 J**	**0.080 J**	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	
MW-23	5/17/2016		59.94	5.12	0.00	54.82	--	<0.010	**0.18 J**	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	
MW-23	9/15/2016		59.94	5.60	0.00	54.34	--	<0.010	**0.42**	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	
MW-23	5/9/2017		59.94	4.06	0.00	55.88	--	<0.010	**0.17 J**	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	
MW-23	9/1/2017		59.94	5.44	0.00	54.50	--	<0.010	**0.31 J**	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	
MW-23	6/7/2018		59.94	5.11	0.00	54.83	--	<0.010	<0.051	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	<0.0005	<0.0005	
MW-23	10/10/2018		59.94	6.06	0.00	53.88	--	<0.014	**0.26**	--	<0.0002	<0.0002	<0.0002	<0.0005	--	--	<0.0003	<0.002	
MW-23	5/11/2019		66.46	5.22	0.00	61.24	--	<0.014	<0.16 B	--	<0.0002	<0.0002	<0.0004	<0.001	<0.0002	--	--	--	Depth to water measured on 06/05/2019
Trip Blank	10/4/2007		--	--	--	--	--	--	--	--	<0.001	<0.001	<0.001	<0.002	--	--	<0.0000096	<0.0005	
Trip Blank	6/19/2008		--	--	--	--	--	<0.01	--	--	<0.001	<0.001	<0.001	<0.002	--	--	--	--	
Trip Blank	8/28/2008		--	--	--	--	--	<0.01	--	--	<0.001	<0.001	<0.001	<0.002	--	--	--	--	
Trip Blank	2/16/2009		--	--	--	--	--	--	--	--	<0.001	<0.001	<0.001	<0.002	--	--	--	--	
Trip Blank	4/29/2009		--	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	--	--	--	
Trip Blank	8/19/2009		--	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	--	--	--	
Trip Blank	6/8/2010		--	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	--	--	--	
Trip Blank	8/6/2010		--	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	--	--	--	
Trip Blank	5/19/2011		--	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	--	--	--	
Trip Blank	8/1/2011		--	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	--	--	--	
Trip Blank	5/31/2012		--	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	--	--	--	
Trip Blank	7/31/2012		--	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	--	--	--	
Trip Blank	5/9/2013		--	--	--	--	--	<0.0070	--	--	<0.000062	<0.000077	<0.000081	<0.00022	--	--	--	--	
Trip Blank	9/18/2013		--	--	--	--	--	<0.050	--	--	<0.00024	<0.00023	<0.00024	<0.00072	--	--	--	--	
Trip Blank	6/11/2014		--	--	--	--	--	<0.050	--	--	<0.00015 [<0.00015]	<0.00011 [<0.00011]	<0.00016 [<0.00016]	<0.00040 [<0.00040]	--	--	--	--	
Trip Blank	11/4/2014		--	--	--	--	--	-	--	--	<0.00015 [<0.00015]	<0.00011 [<0.00011]	<0.00016 [<0.00016]	<0.00040 [<0.00040]	--	--	--	--	
Trip Blank	4/27/2015		--	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0015	--	--	--	--	
Trip Blank	10/23/2015		--	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	
Trip Blank	5/17/2016		--	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	
Trip Blank	5/9/2017		--	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	
Trip Blank	9/1/2017		--	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	
Trip Blank	6/7/2018		--	--	--	--	--	<0.010	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--	--	<0.0005	<0.0005	
Trip Blank	10/10/2018		--	--	--	--	--	<0.014	--	--	<0.0002	<0.0002	<0.0002	<0.0005	--	--	<0.0003	<0.002	
Trip Blank	4/17/2019		--	--	--	--	--	<0.014	--	--	<0.0002	<0.0002	<0.0004	<0.001	<0.0002	--	<0.0003	<0.002	

Notes:
ID = Identification
MW = Groundwater monitoring well
TOC = Top of casing
DTW = Depth to groundwater
ft bTOC = Feet below top of casing
ft = Feet
GW Elev = Groundwater elevation
mg/L = Milligrams per liter
Bold = At or above the method detection limit (MDL)
Bold and Shaded Value exceeds ADEC Groundwater Cleanup Level
<0.0002 = Not detected at or above the stated limit
-- = Not sampled/not measured/not available
ND = Not detected
[ ] = Duplicate Sample Results
LNAPL = Light non-aqueous phase liquid

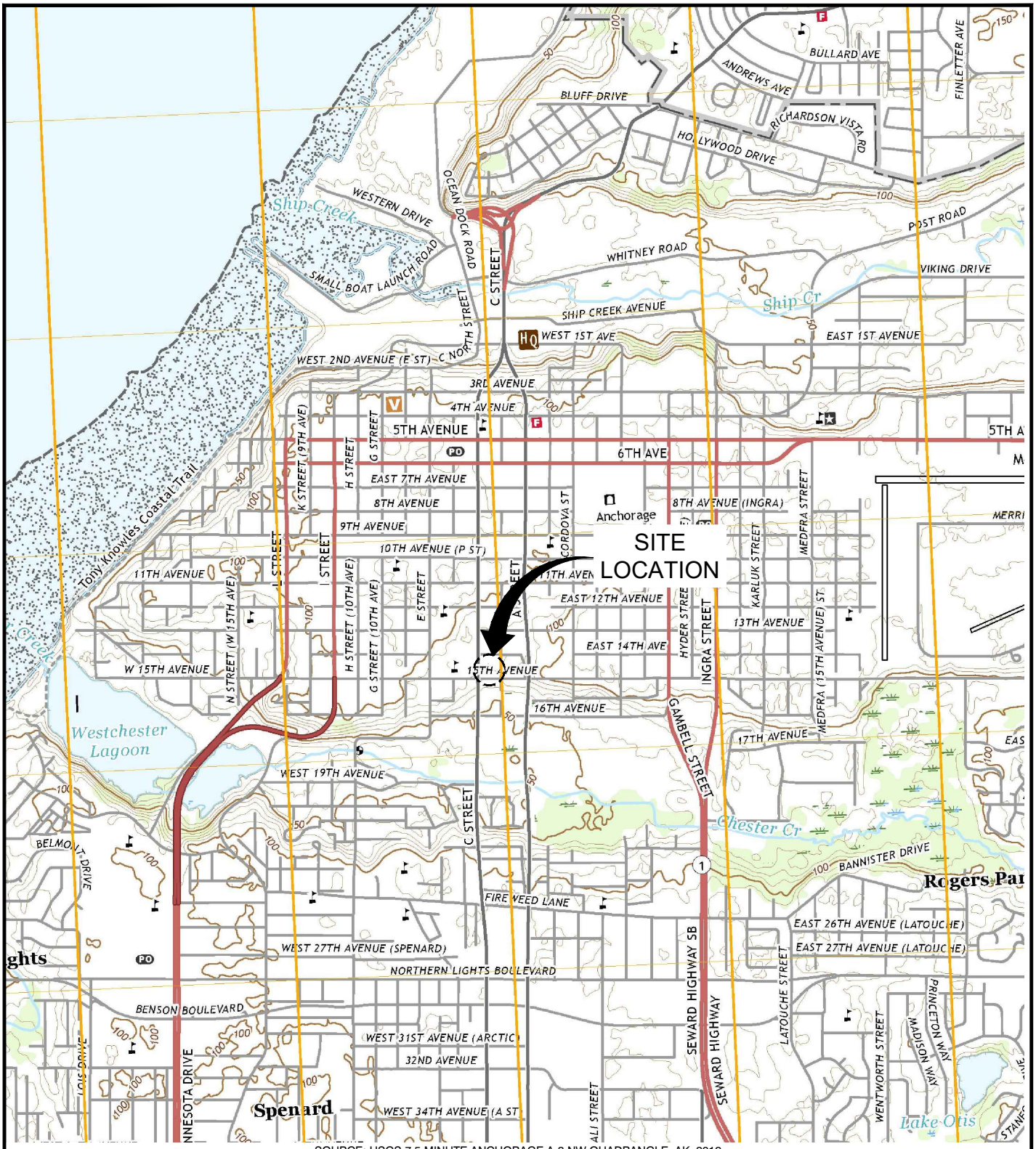
TPH-g = Total petroleum hydrocarbons, gasoline range by LUFT GC/MS according to United States Environmental Protection Agency (USEPA) Method AK 101
TPH-d = Total petroleum hydrocarbons, diesel range by LUFT GC/MS according to USEPA Method AK 102-SV 4/8/02
Samples analyzed by USEPA Method 8260B:
Benzene, toluene, ethylbenzene and total xylenes (collectively BTEX)
MTBE = Methyl tert-butyl ether
HVOC = Volatile organic compounds by EPA Method 524.2
EDB = 1,2-Dibromoethane
EDC = Ethylene Dichloride
J = The compound was positively identified; however, the associated numerical value is an estimated concentration only
UB = Compound is considered non-detect at the listed value due to associated blank contamination

Table 3. Groundwater PAH Analytical Results
Former Unocal Station 4652
Chevron Site 306448
1441 C Street, Anchorage, Alaska

Well ID	Sample Date	Methylnaphthalene (mg/L)	Methylnaphthalene (mg/L)	Acenaphthene (mg/L)	Acenaphthylene (mg/L)	Anthracene (mg/L)	Benzo(a)anthracene (mg/L)	Benzo(a)pyrene (mg/L)	Benzo(b)fluoranthene (mg/L)	Benzo(g,h,i)perylene (mg/L)	Benzo(k)fluoranthene (mg/L)	Chrysene (mg/L)	Dibenz(a,h)anthracene (mg/L)	Fluoranthene (mg/L)	Fluorene (mg/L)	Indeno(1,2,3-cd)pyrene (mg/L)	Naphthalene (mg/L)	Phenanthrene (mg/L)	Pyrene (mg/L)
ADEC Groundwater Cleanup Levels[a]		**0.011**	**0.036**	**0.53**	**0.26**	**0.043**	**0.00030**	**0.00025**	**0.0025**	**0.00026**	**0.0008**	**0.002**	**0.00025**	**0.26**	**0.29**	**0.00019**	**0.0017**	**0.17**	**0.12**
MW-5	5/17/2016	--	--	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.0000096	<0.000029	<0.000029	<0.0000096
MW-11A	6/8/2010	--	--	<0.000011	<0.000011	<0.000011	<0.000011	<0.000011	<0.000011	<0.000011	<0.000011	<0.000011	<0.000011	<0.000011	<0.000011	<0.000011	**0.0020**	<0.000011	<0.000011
MW-11A	6/7/2018	--	--	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	**0.0020**	<0.00003	<0.00002
MW-20A	6/8/2010	--	--	**0.000045 J [0.000039 J]**	**0.000033 J [0.000048 J]**	<0.000011 [<0.00001]	<0.000011 [<0.00001]	<0.000011 [<0.00001]	<0.000011 [<0.00001]	<0.000011 [<0.00001]	<0.000011 [<0.00001]	<0.000011 [<0.00001]	<0.000011 [<0.00001]	<0.000011 [<0.000010]	**0.000057 [0.000055]**	<0.000011 [<0.00001]	**0.13 [0.13]**	**0.000049 J [0.000044 J]**	<0.000011 [<0.000010]
MW-20	5/17/2016	--	--	**0.000054 [0.000053]**	**0.000040 J [0.000036 J]**	**0.000023 J [0.000021 J]**	[<0.0000096]	[<0.0000096]	[<0.0000096]	[<0.0000096]	[<0.0000096]	**J]**	<0.0000096 [<0.0000096]	<0.0000096 [<0.0000096]	**0.000025 J [0.000023 J]**	<0.0000096 [<0.0000096]	**0.11 [0.098]**	**0.000034 J [0.000033 J]**	<0.0000096 [<0.0000096]
MW-20	6/7/2018	--	--	<0.0001 [<0.0001]	<0.0001 [<0.0001]	<0.0001 [<0.0001]	<0.0001 [<0.0001]	<0.0001 [<0.0001]	<0.0001 [<0.0001]	<0.0001 / <0.0001	<0.0001 [<0.0001]	<0.0001 [<0.0001]	<0.0001 [<0.0001]	<0.0001 [<0.0001]	<0.0001 [<0.0001]	<0.0001 [<0.0001]	**0.16 [0.14]**	<0.0003 [<0.0003]	<0.0002 [<0.0002]
MW-19	6/7/2018	--	--	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	**0.0001**	<0.00003	<0.00002
MW-21	6/7/2018	--	--	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	**0.00001 J**	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	**0.00001 J**	**0.0003**	<0.00003	<0.00002
MW-22	6/7/2018	--	--	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	**0.0001**	<0.00003	<0.00002
MW-23	6/7/2018	--	--	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	**0.00004 J**	<0.00003	<0.00002

Notes:
PAHs = Poly aromatic hydrocarbons by Method SW8270
ADEC = Alaska Department of Environmental Conservation
[a] = Levels established in ADEC Table C Groundwater Cleanup Levels (18 AAC 75.345)
Bold = At or above the method detection limit (MDL)
Bold and Shaded Value exceeds ADEC Groundwater Cleanup Level
mg/L = milligrams per liter
J = Estimated value
- = Not measured / not analyzed
<0.0001 = Constituent not detected above the MDL
[ ] = Duplicate Sample Results

FIGURES



SOURCE: USGS 7.5 MINUTE ANCHORAGE A-8 NW QUADRANGLE, AK, 2019

N

AREA LOCATION

ALASKA

0 2,000' 4,000'

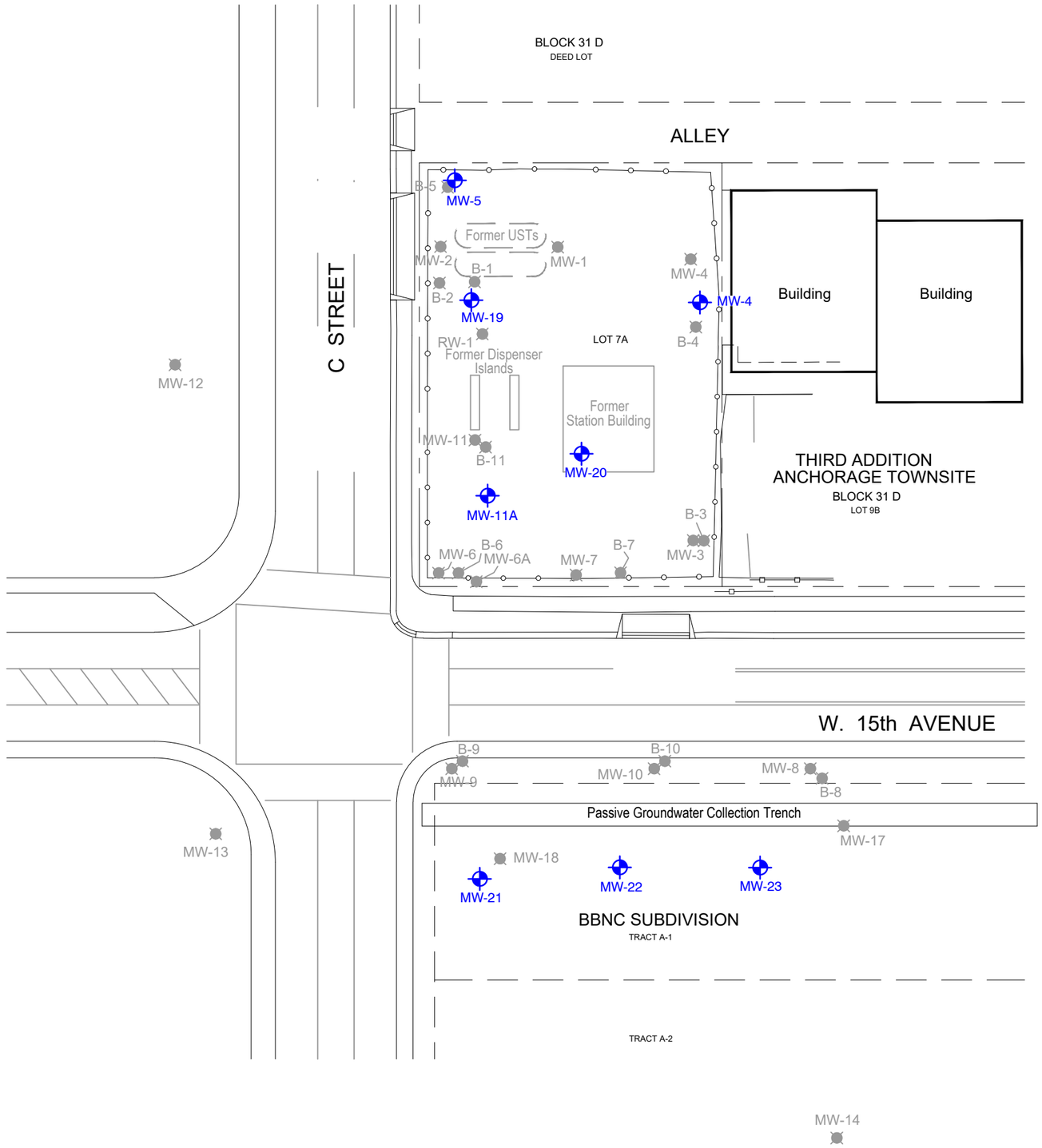
APPROXIMATE SCALE : 1 in. = 2,000 ft.

FORMER UNOCAL STATION 4652
CHEVRON SITE 306448
1441 C STREET, ANCHORAGE, ALASKA

SITE LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE 1



LEGEND

MW-19	GROUNDWATER MONITORING WELL
UST	UNDERGROUND STORAGE TANK
MW-1	DESTROYED WELL LOCATION

N

0 40' 80'

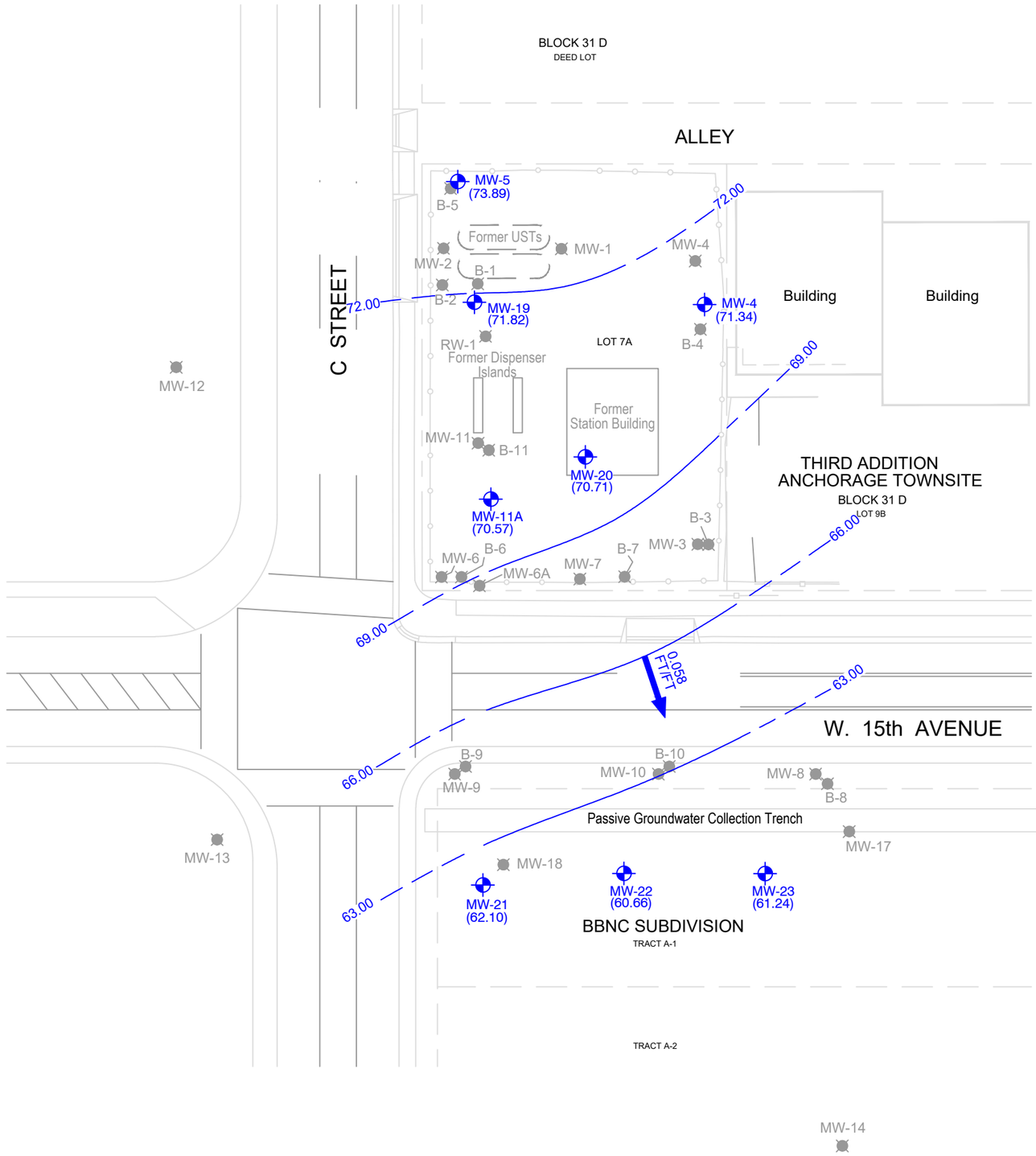
APPROXIMATE SCALE 1 in. = 40 ft.

FORMER UNOCAL STATION 4562
CHEVRON SITE 306448
1441 C STREET, ANCHORAGE, ALASKA

SITE PLAN

ARCADIS Design & Consultancy for natural and built assets

FIGURE 2



LEGEND

- MW-19 — GROUNDWATER MONITORING WELL
- UST — UNDERGROUND STORAGE TANK
- MW-1 — DESTROYED WELL LOCATION
- (73.89) — GROUNDWATER ELEVATION IN FEET
- 72.00 — GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- APPROXIMATE DIRECTION OF GROUNDWATER FLOW
- 0.058 FT/FT — APPROXIMATE HYDRAULIC GRADIENT (FEET/FOOT)

N

NOTES:

1. WELLS WERE RESURVEYED ON 6/5/2019.

0 40' 80'

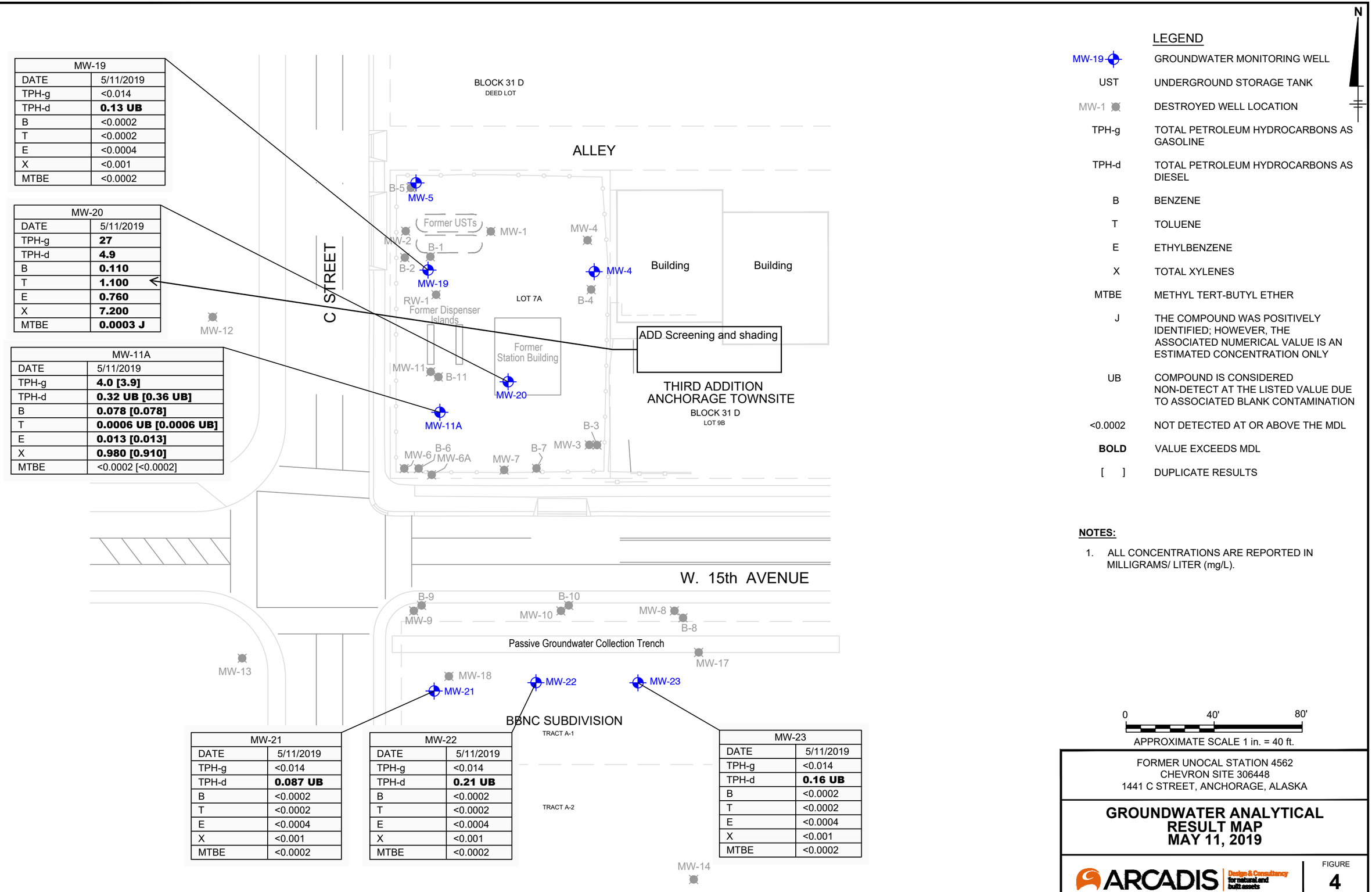
APPROXIMATE SCALE 1 in. = 40 ft.

FORMER UNOCAL STATION 4562
CHEVRON SITE 306448
1441 C STREET, ANCHORAGE, ALASKA

GROUNDWATER ELEVATION CONTOUR MAP JUNE 5, 2019

ARCADIS Design & Consultancy for natural and built assets

FIGURE 3



MW-19	
DATE	5/11/2019
TPH-g	<0.014
TPH-d	**0.13 UB**
B	<0.0002
T	<0.0002
E	<0.0004
X	<0.001
MTBE	<0.0002

MW-20	
DATE	5/11/2019
TPH-g	**27**
TPH-d	**4.9**
B	**0.110**
T	**1.100**
E	**0.760**
X	**7.200**
MTBE	**0.0003 J**

MW-11A	
DATE	5/11/2019
TPH-g	**4.0 [3.9]**
TPH-d	**0.32 UB [0.36 UB]**
B	**0.078 [0.078]**
T	**0.0006 UB [0.0006 UB]**
E	**0.013 [0.013]**
X	**0.980 [0.910]**
MTBE	<0.0002 [<0.0002]

MW-21	
DATE	5/11/2019
TPH-g	<0.014
TPH-d	**0.087 UB**
B	<0.0002
T	<0.0002
E	<0.0004
X	<0.001
MTBE	<0.0002

MW-22	
DATE	5/11/2019
TPH-g	<0.014
TPH-d	**0.21 UB**
B	<0.0002
T	<0.0002
E	<0.0004
X	<0.001
MTBE	<0.0002

MW-23	
DATE	5/11/2019
TPH-g	<0.014
TPH-d	**0.16 UB**
B	<0.0002
T	<0.0002
E	<0.0004
X	<0.001
MTBE	<0.0002

LEGEND

MW-19	GROUNDWATER MONITORING WELL
UST	UNDERGROUND STORAGE TANK
MW-1	DESTROYED WELL LOCATION
TPH-g	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
TPH-d	TOTAL PETROLEUM HYDROCARBONS AS DIESEL
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
MTBE	METHYL TERT-BUTYL ETHER
J	THE COMPOUND WAS POSITIVELY IDENTIFIED; HOWEVER, THE ASSOCIATED NUMERICAL VALUE IS AN ESTIMATED CONCENTRATION ONLY
UB	COMPOUND IS CONSIDERED NON-DETECT AT THE LISTED VALUE DUE TO ASSOCIATED BLANK CONTAMINATION
<0.0002	NOT DETECTED AT OR ABOVE THE MDL
BOLD	VALUE EXCEEDS MDL
[ ]	DUPLICATE RESULTS

NOTES:

1. ALL CONCENTRATIONS ARE REPORTED IN MILLIGRAMS/ LITER (mg/L).

FORMER UNOCAL STATION 4562
CHEVRON SITE 306448
1441 C STREET, ANCHORAGE, ALASKA

GROUNDWATER ANALYTICAL RESULT MAP MAY 11, 2019

ARCADIS Design & Consultancy for natural and built assets

FIGURE 4

APPENDIX A

Site Background and History

ARCADIS Design & Consultancy for natural and built assets

Chevron Environmental Management Company

Appendix A:

Site History and Background

Former Chevron Facility 306448
1441 C Street
Anchorage, Alaska
ADEC File No: 2100.26.117
HAZARD ID No: 23360

October 28, 2019

306448 SITE BACKGROUND AND HISTORY

1 SITE DESCIPTION AND VICINITY

Chevron Facility 306448 is located at 1441 C Street in Anchorage, Alaska. The site currently consists of a vacant lot and is located at the intersection of C Street and West 15th Avenue. Surrounding properties are mixed commercial and residential; the site is bordered by an apartment complex to the north, and by commercial businesses to the east, south, and west.

Union Oil of California (Unocal), a Chevron Environmental Management Company (CEMC) affiliate, formerly operated the service station until 1987 when it was decommissioned. During its 1987 decommissioning, three petroleum underground storage tanks (USTs) with dispenser pumps and the station building were removed.

2 SITE CHARACTERIZATION

Currently, there are five groundwater monitoring wells onsite (MW-4, MW-5, MW-11A, MW-19, and MW-20), and three groundwater monitoring wells offsite to the south (MW-21 through MW-23). Historically, concentrations of volatile organic compounds (VOCs), gasoline range organics (GRO), and diesel range organics (DRO) have exceeded their respective ADEC Method 2 groundwater cleanup levels in several monitoring wells both on and offsite.

3 CURRENT SITE MONITORING ACTIVITIES

Six groundwater monitoring wells are sampled semiannually: onsite wells MW-11A, MW-19, and MW-20, and offsite wells MW-21 through MW-23. All eight monitoring wells are gauged for depth to water during the semiannual monitoring events. In recent sampling events, concentrations of benzene, toluene, ethylbenzene, xylenes, gasoline range organics (GRO), and diesel range organics (DRO) have exceeded their respective ADEC Method 2 groundwater cleanup levels in onsite wells MW-11A and MW-20. No detections of constituents of protentional concern (COPC) exceeding ADEC cleanup levels have occurred in any offsite well since 2013.

4 GEOLOGY AND HYDROGEOLOGY

The site is in south central Alaska, east of Cook Inlet. From 1986 until present, static groundwater depths at the site have ranged between 6.06 to 10.49 feet below top of casing (ft btoc). Historic ground water flow is to the southeast.

5 REFERENCES

GHD Inc. 2018. Second Semiannual 2018 Groundwater Monitoring Report: Former Unocal Service Station 4652, Chevron Site 306448, 1441 C Street, Anchorage, AK. November 15, 2018.

APPENDIX B

Field Data Sheets

ARCADIS Design & Consultancy for natural and built assets

Daily Log Chevron Service station 306448

Project Name Chevron-LTM **Project Number** DEMAK000.6448 **Page** 1 of 1

Site Location 1441 C Street, Anchorage, AK **Date** 5/11/2019

Field Personnel A. Tosh & R. Branchle

Time	Description of Activities					
0715	ANA Crew (A. Tosh & R. Branchle) on site @ ANA office					
	Crew does not have keys to building; E.					
0745	E. Wucjik delivers keys					
0750	A. Tosh calibrates Horiba U52 & R. Branchle					
	calibrates PID; see calibration logs					
0900	Crew onsite			(ppm)	(ft btoc)	(ft btoc)
0945	Begin Gauging Round:	Well	Time	PID	DTW	DTB
		MW-4	1000	0.0	7.71	16.60
		MW-5	0955	0.0	8.74	13.77
		MW-11A	1002	0.0	8.42	12.23
		MW-19	0945	0.0	9.91	17.22
		MW-20	1005	0.0	8.85	16.39
		MW-21	1055	0.0	6.44	19.38
		MW-22	1057	0.0	5.52	16.80
		MW-23	1200	0.1	4.56	16.70
1015	Sample MW-19					
1101	Sample MW-11A and BD-1					
1155	Sample MW-20					
~~1335~~ 1313	Sample MW-21					
1419	Sample MW-22					
1455	Sample MW-23					
1530	Crew offsite					
1600	Crew unloads equipment & puts samples in cold storage					
Note:	R. Branchle collects Equipment blank @ 1500					
1642	Crew leave ANA office					

GROUNDWATER SAMPLING FORM

ARCADIS

Project No. DEMAK000.6448, 6448 AT 5/11/19 Well ID MW-19

Page 1 of 1

Project Name/Location 306448 / 1441 C Street, Anchorage, AK

Date 5/11/2019

Weather 50's, windy overcast

Measuring Pt. Description Top of Casing

Screen Setting (ft-bmp) NA

Casing Diameter (in.) 4

Well Material X PVC ___ SS

Static Water Level (ft-bmp) 9.91

Total Depth (ft-bmp) 17.22

Water Column (ft) NC

Gallons in Well NC

MP Elevation NA

Pump Intake (ft-bmp) 11.91

Purge Method: ___ Centrifugal ___ Submersible Other Bladder Pump

Sample Method Low Flow

Pump On/Off 955 / 1020

Volumes Purged NC

Sample Time: Label 1015/1020 AT 5/11/19 Gallons Purged 2.0

Purge Start NA

Purge End NA

Replicate/ Code No. NA

Sampled by A. Tash

Time	Minutes Elapsed	Rate (gpm)/(mL/min) 200mL/min +	Depth to Water (ft) -0.3	Gallons Purged	pH ± 0.1	Cond. (µMhos)/(mS/cm) ± 3%	Turbidity (NTU) ± 10%	DO (mg/L) ± 10%	Temp. (°C)/(°F) ± 3%	Redox (mV) ± 10mV	Appearance Color	Appearance Odor
0957	NC	200	9.98	NC	6.96	0.428	5.8	13.27	9.31	358	clear	No
1000	↑	↓	10.17	NC	6.98	0.429	8.0	10.52	8.58	359	↓	↓
1003			10.20	7.06	7.02	0.430	12.7	9.75	8.61	361		
1006			10.27	NC	7.13	0.432	13.6	9.38	8.66	363		
1009			10.35	NC	7.17	0.1433	17.0	9.25	8.59	363		
1012	↓	↓	10.46	NC	7.20	0.434	17.3	9.10	8.53	364	↓	↓
						AT 5/11/19						
Stabilization Calculations (±)					✓	✓			✓	✓		
Stabilization Criteria					± 0.1 s.u.	±3%	± 10% or within 1 NTU (1)	± 10%	±3%	±10 mV		

(1) Turbidity < 50 NTU and ±10% or within 1 NTU of a previous reading when <10 NTU

Constituents Sampled	Container	Number	Preservative
GRO AK101	40mL Amber VOA	3	HCl
BTEX 8260	1	1	↓
DRO AK102	250mL Amber	2	
	AT 5/11/19		

Comments PID=0.0 PPM; NA=not available/Not applicable; NC=not calculated, reduced flow to 150 mL/min for VOA sampling

Well Casing Volumes

Gallons/Foot: 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

Well Information

Well Location: NW corner of SAO

Condition of Well: Good

Well Completion: Flush Mount / (Stick Up)

Well Locked at Arrival: (Yes) / No

Well Locked at Departure: (Yes) / No

Key Number To Well: 3910

GW Sampling Form

10/15/2018

GROUNDWATER SAMPLING FORM

ARCADIS

Page 1 of 1

Project No. DEMAK000.6448 Well ID MW-11A Date 5/11/2019

Project Name/Location 306448/1441 C St, Anchorage, AK Weather 50's; windy, overcas

Measuring Pt. Description Top of casing Screen Setting (ft-bmp) NA Casing Diameter (in.) 2 Well Material X PVC ___ SS

Static Water Level (ft-bmp) 8.42 Total Depth (ft-bmp) 12.23 Water Column (ft) NC Gallons in Well NC

MP Elevation NA Pump Intake (ft-bmp) 10.42 Purge Method: Centrifugal / Submersible / Other Bladder pump Sample Method Low Flow

Pump On/Off 1039/1113 Volumes Purged NC

Sample Time: Label 1101 Gallons Purged ~~NA~~ 2 Replicate/ Code No. BD-1-W-190511 Sampled by A. Tosh

Purge Start NA

Purge End NA

AT 5/11/19

Time	Minutes Elapsed	Rate (gpm)/(mL/min) 200mL/min +	Depth to Water (ft) -0.3	Gallons Purged	pH ±0.1	Cond. (µMhos)/(mS/cm) ±3%	Turbidity (NTU) ±10%	DO (mg/L) ±10%	Temp. (°C)/(°F) ±3%	Redox (mV) ±10mV	Appearance Color	Appearance Odor
1042	NC	200	8.89	~~NC~~ 1.12	7.12	0.641	60.8	2.50	10.21	0	cloudy	NO
1045	↓	↓	8.85	NC	7.14	0.644	49.5	1.64	9.83	-29	↓	↓
1048			8.85	NC	7.15	0.646	33.6	0.87	9.49	-50	clear	NO
1051			~~8.85~~ 8.85	NC	7.17	0.648	25.9	0.42	9.28	-64	↓	↓
1054			AT 5/11/19 8.87	↓	7.18	0.648	18.8	0.28	9.16	-70		
1057			8.95		7.18	0.649	14.7	0.15	9.08	-75		
1100	↓	↓	8.95	↓	7.19	0.649	14.7	0.06	9.03	-78	↓	↓
						AT 5/11/19						
Stabilization Calculations (±)												
Stabilization Criteria					±0.1 s.u.	±3%	≤10% or within 1 NTU (1)	±10%	±3%	±10 mV		

(1) Turbidity < 50 NTU and ±10% or within 1 NTU of a previous reading when <10 NTU

Constituents Sampled	Container	Number	Preservative
GRG AK101	40mL Amber VOA	3	HCL
BTEX 8260	↓	3	↓
DRO AK102	250mL Amber	2	
	AT 5/11/19		

Comments NC=not calculated, NA=not available/not applicable, NM=not measured; reduced flow to 150 mL/min for VOA sampling

Well Casing Volumes

Gallons/Foot					
	1" = 0.04	1.5" = 0.09	2.5" = 0.26	3.5" = 0.50	6" = 1.47
	1.25" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

Well Information

Well Location: SW corner of lot

Condition of Well: Good

Well Completion: Flush Mount / Stick Up

Well Locked at Arrival: Yes / No

Well Locked at Departure: Yes / No

Key Number To Well: 391C

GW Sample Form

10/15/2018

GROUNDWATER SAMPLING FORM

ARCADIS

Page 1 of 1

Project No. DEMAK000.6448 Well ID MW-20 Date 5/1/2019

Project Name/Location 30644S / 1441 C St, Anchorage, AK Weather 50's, windy, sunny

Measuring Pt. Description Top of casin Screen Setting (ft-bmp) NA Casing Diameter (in.) 2 Well Material X PVC ___ SS

Static Water Level (ft-bmp) 8.85 Total Depth (ft-bmp) 16.39 Water Column (ft) NC Gallons in Well NC

MP Elevation NA Pump Intake (ft-bmp) 10.85 Purge Method: Centrifugal / Submersible / Other Bladder Pump Sample Method Low Flow

Pump On/Off 1136/1200 Volumes Purged NC

Sample Time: Label 1155 Gallons Purged 2

Purge Start NA

Purge End NA

Replicate/ Code No. NA Sampled by A. Tosh

Time	Minutes Elapsed	Rate (gpm)/(mL/min) 200mL/min +	Depth to Water (ft) -0.3	Gallons Purged	pH ± 0.1	Cond. (µMhos)/(mS/cm) ± 3%	Turbidity (NTU) ± 10%	DO (mg/L) ± 10%	Temp. (°C)/(°F) ± 3%	Redox (mV) ± 10mV	Appearance Color	Appearance Odor
1138	NC	200	9.10	NC	6.92	0.602	13.2	12.27	11.03	77	clear	YES
1141			9.27		6:88	0.609	3.7	1.10	10.37	43		
1144			9.40		6.86	0.616	3.1	0.90	10.22	31		
ATS 11/19 1147			9.45		6.84	0.635	3.5	0.64	9.04	22		
1150			9.50		6.83	0.638	3.5	0.56	9.55	12		
1153			9.55		6.83	0.639	3.7	0.43	9.44	4		
					ATS 5/1/19							
					✓	✓	✓					
Stabilization Calculations (±)												
Stabilization Criteria					± 0.1 s.u.	±3%	± 10% or within 1 NTU (1)	± 10%	±3%	±10 mV		

(1) Turbidity < 50 NTU and ±10% or within 1 NTU of a previous reading when <10 NTU

Constituents Sampled	Container	Number	Preservative
GRO AK101	40mL Amber VOA	3	HCl
BTEX 8260		3	
DRO AK102	250 mL Amber glass	2	
	ATS 5/1/19		

Comments NA=not applicable/not available; NC=not Alculated, CSCW reduced Flow rate to 150 mL/min for VOA sampling

Well Casing Volumes

Gallons/Foot: 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

Well Information

Well Location: South central of lot

Condition of Well: Good

Well Completion: Flush Mount / Stick Up

Well Locked at Arrival: Yes / No

Well Locked at Departure: Yes / No

Key Number To Well: 3210

GW Sample Form

10/15/2018

GROUNDWATER SAMPLING FORM

ARCADIS

Project No.	DEMAK000.6448	Well ID	MW-21	Page	1 of 1
Project Name/Location	306448/1441 C st, Anchorage, AK			Date	5/11/19
				Weather	50's, windy, sunny
Measuring Pt. Description	Top of casing	Screen Setting (ft-bmp)	NA	Casing Diameter (in.)	2
Well Material	X PVC / SS				
Static Water Level (ft-bmp)	6.44	Total Depth (ft-bmp)	19.38	Water Column (ft)	NC
Gallons in Well	NC				
MP Elevation	NA	Pump Intake (ft-bmp)	9.00	Purge Method:	Centrifugal / Submersible / Other: Bladder Pump
Pump On/Off	1239/1338	Volumes Purged	NC	Sample Method	Low Flow
Sample Time: Label	1313	Gallons Purged	3.0		
Purge Start	NA	Replicate/ Code No.	~~MS/MSD-1-W-190511~~ MW-21-MS/MSD-1-W-190511	Sampled by	A. Tosh
Purge End	NA				

Time	Minutes Elapsed	Rate (gpm)/(mL/min) 200mL/min +	Depth to Water (ft) -0.3	Gallons Purged	pH ±0.1	Cond. (µMhos)/(mS/cm) ±3%	Turbidity (NTU) ±10%	DO (mg/L) ±10%	Temp. (°C)/(°F) ±3%	Redox (mV) ±10mV	Appearance Color	Appearance Odor
1241	NC	~~200~~ 400	7.26	NC	8.59	0.478	~~7.22~~ 16.4	3.93	9.51	-3	Clear	No
1244		AT 5/11/19 400	8.30		~~8~~ 8.70	0.478	AT 5/11/19 13.8	0.92	9.23	-44		
1247		400	8.95		AT 5/11/19 8.70	0.485	4.3	0.00	9.26	-116		
1250		200	9.07		8.69	0.482	8.1	0.75	10.05	-106		
1253			Dry to top of pump; Crew lowers pump 1 foot									
1259		150	9.00	NC	8.69	0.481	15.3	1.41	9.94	-104		
1302			9.15		8.68	0.480	18.6	0.93	9.58	-115		
1305		100	9.50		8.69	0.480	17.2	0.00	9.41	-132		
1308			9.41		8.69	0.480	15.6	0.00	9.57	-134		
1311			9.40		8.69	0.481	13.2	0.00	9.78	-139		

AT 5/11/19

Stabilization Calculations (±)							
Stabilization Criteria	±0.1 s.u.	±3%	±10% or within 1 NTU (1)	±10%	±3%	±10 mV	

(1) Turbidity < 50 NTU and ±10% or within 1 NTU of a previous reading when <10 NTU

Constituents Sampled	Container	Number	Preservative
GRO AK101	40 mL Amber VOA	3	HCL
BTEX 8260	40 mL Amber VOA	3	HCL
DRO AK102	250 mL Amber	2	HCL

AT 5/11/19

Comments NA = not applicable/not analyzed; NC = not calculated; Flow rate reduced to minimize drawdown

Well Casing Volumes

Gallons/Foot 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

Well Information

Well Location:	NA		
Condition of Well:	Outer casing damaged	Well Locked at Arrival:	(Yes) / No
		Well Locked at Departure:	Yes / No
Well Completion:	Flush Mount / (Stick Up)	Key Number To Well:	3910

GROUNDWATER SAMPLING FORM

ARCADIS

Page 1 of 1

Project No. DEMAK000.6448 Well ID MW-22 Date 5/11/19

Project Name/Location 306448/1441 C St, Anchorage, AK Weather 50's, windy, overcast

Measuring Pt. Description Top of casing Screen Setting (ft-bmp) NA Casing Diameter (in.) 2 Well Material X PVC ___ SS

Static Water Level (ft-bmp) 5.52 Total Depth (ft-bmp) 16.80 Water Column (ft) NC Gallons in Well NC

MP Elevation NA Pump Intake (ft-bmp) 7.52 Purge Method: Centrifugal / Submersible / Other Bladder Pump Sample Method Low Flow

Pump On/Off 1353 / 1430 Volumes Purged NC

Sample Time: Label 1419 Gallons Purged 1.5

Purge Start NA

Purge End NA

Replicate/ Code No. NA Sampled by A. Tosh

Time	Minutes Elapsed	Rate (gpm)/(mL/min) 200mL/min +	Depth to Water (ft) -0.3	Gallons Purged	pH ± 0.1	Cond. (µMhos)/(mS/cm) ± 3%	Turbidity (NTU) ± 10%	DO (mg/L) ± 10%	Temp. °C/(°F) ± 3%	Redox (mV) ± 10mV	Appearance Color	Appearance Odor
1356	NC	200	6.05 6.55	NC	7.74	1.13	13.7	3.94	11.25	186	clear	No
1359			AT 5/11/19 6.14		7.58	1.18	11.0	2.20	10.96	183		
1402			6.21		7.51	1.22	7.8	1.20	10.78	175		
1405			6.25		7.49	1.25	7.0	0.46	10.64	166		
1408			6.30		7.47	1.26	7.9	0.12	10.56	156		
1411			6.30		7.45	1.27	10.8	0.00	10.52	146		
1414			6.30		7.45	1.28	12.8	0.00	10.42	137		
1417	↓	↓	6.31	↓	7.43	1.28	14.1	0.00	10.44	126	↓	↓
						AT 5/11/19						
Stabilization Calculations (±)												
Stabilization Criteria					±0.1 s.u.	±3%	±10% or within 1 NTU (1)	±10%	±3%	±10 mV		

(1) Turbidity < 50 NTU and ±10% or within 1 NTU of a previous reading when <10 NTU

Constituents Sampled	Container	Number	Preservative
GRO AK101	40mL Amber VOA	3	HCL
BTEX 8260	↓	3	↓
DRO AK102	250mL Amber	2	
	AT 5/11/19		

Comments NA=not applicable/not available; NC=not calculated; Flow rate reduced to 150mL/min for VOA sampling

Well Casing Volumes

Gallons/Foot 1" = 0.04 | 1.25" = 0.06 | 1.5" = 0.09 | 2" = 0.16 | 2.5" = 0.26 | 3" = 0.37 | 3.5" = 0.50 | 4" = 0.65 | 6" = 1.47

Well Information

Well Location: NA

Condition of Well: Good

Well Completion: Flush Mount / Stick Up

Well Locked at Arrival: Yes / No

Well Locked at Departure: Yes / No

Key Number To Well: 3910

GW Basic Form

10/15/2018

GROUNDWATER SAMPLING FORM

ARCADIS

Page 1 of 1

Project No. DEMAK600.6448 Well ID MW-23 Date 5/11/2019

Project Name/Location 306448/1441 C St, Anchorage, AK Weather 50's, windy, cloudy

Measuring Pt. Description Top of casing Screen Setting (ft-bmp) NA Casing Diameter (in.) 2 Well Material X PVC ___ SS

Static Water Level (ft-bmp) 4.56 Total Depth (ft-bmp) 16.70 Water Column (ft) NC Gallons in Well NC

MP Elevation NA Pump Intake (ft-bmp) 6.56 Purge Method: Centrifugal / Submersible / Other Bladder pump Sample Method Low Flow

Pump On/Off 1437 / 1501 Volumes Purged NA

Sample Time: Label 1455 Gallons Purged ___

Purge Start NA

Purge End NA

Replicate/ Code No. NA Sampled by A. Tosh

Time	Minutes Elapsed	Rate (gpm)/(mL/min) 200mL/min +	Depth to Water (ft) -0.3	Gallons Purged	pH ± 0.1	Cond. (µMhos)/(mS/cm) ± 3%	Turbidity (NTU) ± 10%	DO (mg/L) ± 10%	Temp. °C/°F ± 3%	Redox (mV) ± 10mV	Appearance Color	Appearance Odor
1441	NC	200	5.15	NC	6.99	0.966	2.3	7.19	16.59	211	clear	No
1444	"	"	5.25		6.95	0.981	0.9	0.59	10.23	209	"	"
1447	"	"	5.26		6.89	1.02	0.4	0.00	10.26	202	"	"
1450	"	"	5.20		6.87	1.05	0.3	0.00	10.25	197	"	"
1453	"	"	5.22		6.86	1.06	0.4	0.00	10.25	192	"	"
						AT 5/11/19						
Stabilization Calculations (±)												
Stabilization Criteria					±0.1 s.u.	±3%	±10% or within 1 NTU (1)	±10%	±3%	±10 mV		

(1) Turbidity < 50 NTU and ±10% or within 1 NTU of a previous reading when <10 NTU

Constituents Sampled	Container	Number	Preservative
GRO AK101	40mL Amber VOA	3	HCL
BTEX 8260	"	3	"
DRO AK102	250 mL Amber	2	"
	AT 5/11/19		

Comments NA= not applicable / not available; NC= not calculated; Crew reduced flow rate to 150 mL/min for VOA sampling

Well Casing Volumes

Gallons/Foot: 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

Well Information

Well Location: NA

Condition of Well: Good Lock corroded & difficult to remove

Well Completion: Flush Mount / (Stick Up)

Well Locked at Arrival: (Yes) / No

Well Locked at Departure: (Yes) / No

Key Number To Well: 3916

GW Sample Form

10/15/2018

ARCADIS | Design & Consultancy for natural and built assets

Daily Log

Project Name 30648 **Project Number** 306448 **Page** 1 **of** 1

Site Location 1441 C St Anchorage AK **Date** 6/5/19

Field Personnel D. Beaubien, E. Wyatt, McLane Surveyors

Time	Description of Activities		
1400	Arrive at site		
	Well ID	DTW	notes
	MW-4	8.35	
	MW-5	9.13	
	MW-11A	8.71	
	MW-19	10.13	
	MW-20	9.17	
	MW-21	7.05	
	MW-22	6.60	
	MW-23	5.22	
1540	Depart site		

APPENDIX C

Laboratory Analytical Results

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

ANALYSIS REPORT

Prepared by:

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

Prepared for:

Chevron
L4310
6001 Bollinger Canyon Road
San Ramon CA 94583

Report Date: May 24, 2019 12:06

Project: 306448

Account #: 11964
Group Number: 2043860
SDG: LSV55
PO Number: 0015309628
Release Number: HETRICK
State of Sample Origin: AK

Electronic Copy To	Arcadis	Attn: Melissa Blanchette
Electronic Copy To	Arcadis	Attn: Arti Patel
Electronic Copy To	Arcadis	Attn: Nicole Monroe

Respectfully Submitted,

Amek Carter
Specialist

(717) 556-7252

To view our laboratory's current scopes of accreditation please go to https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/ . Historical copies may be requested through your project manager.

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
MW-19-W-190511 Grab Groundwater	05/11/2019 10:15	1057229
MW-11A-W-190511 Grab Groundwater	05/11/2019 11:01	1057230
BD-1-WD-190511 Grab Groundwater	05/11/2019	1057231
MW-20-W-190511 Grab Groundwater	05/11/2019 11:55	1057232
MW-21-W-190511 Grab Groundwater	05/11/2019 13:13	1057233
MW-21MS-W-190511 Grab Groundwater	05/11/2019 13:13	1057234
MW-21MSD-W-190511 Grab Groundwater	05/11/2019 13:13	1057235
MW-22-W-190511 Grab Groundwater	05/11/2019 14:19	1057236
MW-23-W-190511 Grab Groundwater	05/11/2019 14:55	1057237
QA-O-190511 Grab Water	05/11/2019 15:00	1057238
QA-T-190511 Water	04/17/2019	1057239

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

Sample Description: **MW-19-W-190511 Grab Groundwater**
Facility# 306448
1441 C Street - Anchorage, AK

Project Name: **306448**

Submittal Date/Time: 05/14/2019 10:25
Collection Date/Time: 05/11/2019 10:15
SDG#: LSV55-01

Chevron
ELLE Sample #: GW 1057229
ELLE Group #: 2043860
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
13130	Benzene	71-43-2	N.D.	0.2	1	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1	1
13130	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.2	1	1
13130	Toluene	108-88-3	N.D.	0.2	1	1
13130	Xylene (Total)	1330-20-7	N.D.	1	5	1
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	**mg/l**	
01438	TPH-GRO AK water C6-C10	n.a.	N.D.	0.014	0.10	1
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13025	DRO C10-C25	n.a.	0.13 J	0.057	0.29	1

Target analytes were detected in the method blank associated with the samples as noted on the QC summary. However, the observed sample pattern in the method blank is not typical of #2 fuel/diesel. The reported detection in this sample matches the pattern in the method blank.

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX/MTBE 8260C	SW-846 8260C	1	F191362AA	05/16/2019 12:28	Alexander D Sechrist	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F191362AA	05/16/2019 12:27	Alexander D Sechrist	1
01438	TPH-GRO AK water C6-C10	AK 101	1	19136F20A	05/18/2019 09:17	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030C	1	19136F20A	05/18/2019 09:16	Marie D Beamenderfer	1
13025	AK 102-SV DRO	AK 102-SV 4/8/02	1	191410037A	05/23/2019 14:36	Nicholas R Rossi	1
13027	Mini-Ext. AK 102-SV DRO	AK 102/AK 103 04/08/02	1	191410037A	05/22/2019 21:45	Osvaldo R Sanchez	1

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

Sample Description: **MW-11A-W-190511 Grab Groundwater**
Facility# 306448
1441 C Street - Anchorage, AK

Project Name: **306448**

Submittal Date/Time: 05/14/2019 10:25
Collection Date/Time: 05/11/2019 11:01
SDG#: LSV55-02

Chevron
ELLE Sample #: GW 1057230
ELLE Group #: 2043860
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
13130	Benzene	71-43-2	78	0.2	1	1
13130	Ethylbenzene	100-41-4	13	0.4	1	1
13130	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.2	1	1
13130	Toluene	108-88-3	0.6 J	0.2	1	1
13130	Xylene (Total)	1330-20-7	980	10	50	10
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	**mg/l**	
01438	TPH-GRO AK water C6-C10	n.a.	4.0	0.070	0.50	5
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13025	DRO C10-C25	n.a.	0.32	0.056	0.28	1

Target analytes were detected in the method blank associated with the samples as noted on the QC summary. However, the observed sample pattern in the method blank is not typical of #2 fuel/diesel.

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX/MTBE 8260C	SW-846 8260C	1	F191362AA	05/16/2019 12:50	Alexander D Sechrist	1
13130	BTEX/MTBE 8260C	SW-846 8260C	1	F191392AA	05/19/2019 22:10	Hu Yang	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F191362AA	05/16/2019 12:49	Alexander D Sechrist	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	F191392AA	05/19/2019 22:09	Hu Yang	10
01438	TPH-GRO AK water C6-C10	AK 101	1	19136F20A	05/18/2019 14:20	Marie D Beamenderfer	5
01146	GC VOA Water Prep	SW-846 5030C	1	19136F20A	05/18/2019 14:19	Marie D Beamenderfer	5
13025	AK 102-SV DRO	AK 102-SV 4/8/02	1	191410037A	05/23/2019 15:03	Nicholas R Rossi	1
13027	Mini-Ext. AK 102-SV DRO	AK 102/AK 103 04/08/02	1	191410037A	05/22/2019 21:45	Osvaldo R Sanchez	1

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

Sample Description: **BD-1-WD-190511 Grab Groundwater**
Facility# 306448
1441 C Street - Anchorage, AK

Project Name: **306448**

Submittal Date/Time: 05/14/2019 10:25
Collection Date/Time: 05/11/2019
SDG#: LSV55-03

Chevron
ELLE Sample #: GW 1057231
ELLE Group #: 2043860
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
13130	Benzene	71-43-2	78	0.2	1	1
13130	Ethylbenzene	100-41-4	13	0.4	1	1
13130	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.2	1	1
13130	Toluene	108-88-3	0.6 J	0.2	1	1
13130	Xylene (Total)	1330-20-7	910	10	50	10
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	**mg/l**	
01438	TPH-GRO AK water C6-C10	n.a.	3.9	0.070	0.50	5
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13025	DRO C10-C25	n.a.	0.36	0.058	0.29	1

Target analytes were detected in the method blank associated with the samples as noted on the QC summary. However, the observed sample pattern in the method blank is not typical of #2 fuel/diesel.

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX/MTBE 8260C	SW-846 8260C	1	F191362AA	05/16/2019 13:12	Alexander D Sechrist	1
13130	BTEX/MTBE 8260C	SW-846 8260C	1	F191392AA	05/19/2019 22:32	Hu Yang	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F191362AA	05/16/2019 13:11	Alexander D Sechrist	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	F191392AA	05/19/2019 22:31	Hu Yang	10
01438	TPH-GRO AK water C6-C10	AK 101	1	19136F20A	05/18/2019 14:48	Marie D Beamenderfer	5
01146	GC VOA Water Prep	SW-846 5030C	1	19136F20A	05/18/2019 14:47	Marie D Beamenderfer	5
13025	AK 102-SV DRO	AK 102-SV 4/8/02	1	191410037A	05/23/2019 15:31	Nicholas R Rossi	1
13027	Mini-Ext. AK 102-SV DRO	AK 102/AK 103 04/08/02	1	191410037A	05/22/2019 21:45	Osvaldo R Sanchez	1

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

Sample Description: **MW-20-W-190511 Grab Groundwater**
Facility# 306448
1441 C Street - Anchorage, AK

Project Name: **306448**

Submittal Date/Time: 05/14/2019 10:25
Collection Date/Time: 05/11/2019 11:55
SDG#: LSV55-04

Chevron
ELLE Sample #: GW 1057232
ELLE Group #: 2043860
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
13130	Benzene	71-43-2	110	0.2	1	1
13130	Ethylbenzene	100-41-4	760	0.4	1	1
13130	Methyl Tertiary Butyl Ether	1634-04-4	0.3 J	0.2	1	1
13130	Toluene	108-88-3	1,100	0.2	1	1
13130	Xylene (Total)	1330-20-7	7,200	50	250	50
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	**mg/l**	
01438	TPH-GRO AK water C6-C10	n.a.	27	0.28	2.0	20
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13025	DRO C10-C25	n.a.	4.9	0.056	0.28	1

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX/MTBE 8260C	SW-846 8260C	1	F191362AA	05/16/2019 13:34	Alexander D Sechrist	1
13130	BTEX/MTBE 8260C	SW-846 8260C	1	F191392AA	05/19/2019 22:54	Hu Yang	50
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F191362AA	05/16/2019 13:33	Alexander D Sechrist	1
01163	GC/MS VOA Water Prep	SW-846 5030C	2	F191392AA	05/19/2019 22:53	Hu Yang	50
01438	TPH-GRO AK water C6-C10	AK 101	1	19136F20A	05/18/2019 15:15	Marie D Beamenderfer	20
01146	GC VOA Water Prep	SW-846 5030C	1	19136F20A	05/18/2019 15:14	Marie D Beamenderfer	20
13025	AK 102-SV DRO	AK 102-SV 4/8/02	1	191410037A	05/23/2019 16:00	Nicholas R Rossi	1
13027	Mini-Ext. AK 102-SV DRO	AK 102/AK 103 04/08/02	1	191410037A	05/22/2019 21:45	Osvaldo R Sanchez	1

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

Sample Description: **MW-21-W-190511 Grab Groundwater**
Facility# 306448
1441 C Street - Anchorage, AK

Project Name: **306448**

Submittal Date/Time: 05/14/2019 10:25
Collection Date/Time: 05/11/2019 13:13
SDG#: LSV55-05BKG

Chevron
ELLE Sample #: GW 1057233
ELLE Group #: 2043860
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
13130	Benzene	71-43-2	N.D.	0.2	1	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1	1
13130	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.2	1	1
13130	Toluene	108-88-3	N.D.	0.2	1	1
13130	Xylene (Total)	1330-20-7	N.D.	1	5	1
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	**mg/l**	
01438	TPH-GRO AK water C6-C10	n.a.	N.D.	0.014	0.10	1
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13025	DRO C10-C25	n.a.	0.087 J	0.056	0.28	1

Target analytes were detected in the method blank associated with the samples as noted on the QC summary. However, the observed sample pattern in the method blank is not typical of #2 fuel/diesel. The reported detection in this sample matches the pattern in the method blank.

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX/MTBE 8260C	SW-846 8260C	1	F191362AA	05/16/2019 13:56	Alexander D Sechrist	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F191362AA	05/16/2019 13:55	Alexander D Sechrist	1
01438	TPH-GRO AK water C6-C10	AK 101	1	19136F20A	05/18/2019 09:45	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030C	1	19136F20A	05/18/2019 09:44	Marie D Beamenderfer	1
13025	AK 102-SV DRO	AK 102-SV 4/8/02	1	191410037A	05/23/2019 16:28	Nicholas R Rossi	1
13027	Mini-Ext. AK 102-SV DRO	AK 102/AK 103 04/08/02	1	191410037A	05/22/2019 21:45	Osvaldo R Sanchez	1

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

Sample Description: **MW-21MS-W-190511 Grab Groundwater**
Facility# 306448
1441 C Street - Anchorage, AK

Project Name: **306448**

Submittal Date/Time: 05/14/2019 10:25
Collection Date/Time: 05/11/2019 13:13
SDG#: LSV55-05MS

Chevron
ELLE Sample #: GW 1057234
ELLE Group #: 2043860
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
13130	Benzene	71-43-2	24	0.2	1	1
13130	Ethylbenzene	100-41-4	22	0.4	1	1
13130	Methyl Tertiary Butyl Ether	1634-04-4	22	0.2	1	1
13130	Toluene	108-88-3	22	0.2	1	1
13130	Xylene (Total)	1330-20-7	66	1	5	1
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	**mg/l**	
01438	TPH-GRO AK water C6-C10	n.a.	1.3	0.014	0.10	1
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13025	DRO C10-C25	n.a.	4.0	0.057	0.28	1

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX/MTBE 8260C	SW-846 8260C	1	F191362AA	05/16/2019 14:18	Alexander D Sechrist	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F191362AA	05/16/2019 14:17	Alexander D Sechrist	1
01438	TPH-GRO AK water C6-C10	AK 101	1	19136F20A	05/18/2019 10:12	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030C	1	19136F20A	05/18/2019 10:11	Marie D Beamenderfer	1
13025	AK 102-SV DRO	AK 102-SV 4/8/02	1	191410037A	05/23/2019 16:55	Nicholas R Rossi	1
13027	Mini-Ext. AK 102-SV DRO	AK 102/AK 103 04/08/02	1	191410037A	05/22/2019 21:45	Osvaldo R Sanchez	1

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

Sample Description: **MW-21MSD-W-190511 Grab Groundwater**
Facility# 306448
1441 C Street - Anchorage, AK

Project Name: **306448**

Submittal Date/Time: 05/14/2019 10:25
Collection Date/Time: 05/11/2019 13:13
SDG#: LSV55-05MSD

Chevron
ELLE Sample #: GW 1057235
ELLE Group #: 2043860
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
13130	Benzene	71-43-2	22	0.2	1	1
13130	Ethylbenzene	100-41-4	20	0.4	1	1
13130	Methyl Tertiary Butyl Ether	1634-04-4	20	0.2	1	1
13130	Toluene	108-88-3	21	0.2	1	1
13130	Xylene (Total)	1330-20-7	62	1	5	1
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	**mg/l**	
01438	TPH-GRO AK water C6-C10	n.a.	1.2	0.014	0.10	1
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13025	DRO C10-C25	n.a.	4.3	0.058	0.29	1

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX/MTBE 8260C	SW-846 8260C	1	F191362AA	05/16/2019 14:40	Alexander D Sechrist	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F191362AA	05/16/2019 14:39	Alexander D Sechrist	1
01438	TPH-GRO AK water C6-C10	AK 101	1	19136F20A	05/18/2019 10:40	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030C	1	19136F20A	05/18/2019 10:39	Marie D Beamenderfer	1
13025	AK 102-SV DRO	AK 102-SV 4/8/02	1	191410037A	05/23/2019 17:26	Nicholas R Rossi	1
13027	Mini-Ext. AK 102-SV DRO	AK 102/AK 103 04/08/02	1	191410037A	05/22/2019 21:45	Osvaldo R Sanchez	1

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

Sample Description: **MW-22-W-190511 Grab Groundwater**
Facility# 306448
1441 C Street - Anchorage, AK

Project Name: **306448**

Submittal Date/Time: 05/14/2019 10:25
Collection Date/Time: 05/11/2019 14:19
SDG#: LSV55-06

Chevron
ELLE Sample #: GW 1057236
ELLE Group #: 2043860
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
13130	Benzene	71-43-2	N.D.	0.2	1	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1	1
13130	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.2	1	1
13130	Toluene	108-88-3	N.D.	0.2	1	1
13130	Xylene (Total)	1330-20-7	N.D.	1	5	1
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	**mg/l**	
01438	TPH-GRO AK water C6-C10	n.a.	N.D.	0.014	0.10	1
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13025	DRO C10-C25	n.a.	0.21 J	0.057	0.29	1

Target analytes were detected in the method blank associated with the samples as noted on the QC summary. However, the observed sample pattern in the method blank is not typical of #2 fuel/diesel.

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX/MTBE 8260C	SW-846 8260C	1	F191362AA	05/16/2019 15:02	Alexander D Sechrist	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F191362AA	05/16/2019 15:01	Alexander D Sechrist	1
01438	TPH-GRO AK water C6-C10	AK 101	1	19136F20A	05/18/2019 11:07	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030C	1	19136F20A	05/18/2019 11:06	Marie D Beamenderfer	1
13025	AK 102-SV DRO	AK 102-SV 4/8/02	1	191410037A	05/23/2019 17:54	Nicholas R Rossi	1
13027	Mini-Ext. AK 102-SV DRO	AK 102/AK 103 04/08/02	1	191410037A	05/22/2019 21:45	Osvaldo R Sanchez	1

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

Sample Description: **MW-23-W-190511 Grab Groundwater**
Facility# 306448
1441 C Street - Anchorage, AK

Project Name: **306448**

Submittal Date/Time: 05/14/2019 10:25
Collection Date/Time: 05/11/2019 14:55
SDG#: LSV55-07

Chevron
ELLE Sample #: GW 1057237
ELLE Group #: 2043860
Matrix: Groundwater

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
13130	Benzene	71-43-2	N.D.	0.2	1	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1	1
13130	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.2	1	1
13130	Toluene	108-88-3	N.D.	0.2	1	1
13130	Xylene (Total)	1330-20-7	N.D.	1	5	1
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	**mg/l**	
01438	TPH-GRO AK water C6-C10	n.a.	N.D.	0.014	0.10	1
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13025	DRO C10-C25	n.a.	0.16 J	0.053	0.27	1

Target analytes were detected in the method blank associated with the samples as noted on the QC summary. However, the observed sample pattern in the method blank is not typical of #2 fuel/diesel.

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX/MTBE 8260C	SW-846 8260C	1	F191362AA	05/16/2019 15:24	Alexander D Sechrist	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F191362AA	05/16/2019 15:23	Alexander D Sechrist	1
01438	TPH-GRO AK water C6-C10	AK 101	1	19136F20A	05/18/2019 11:35	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030C	1	19136F20A	05/18/2019 11:34	Marie D Beamenderfer	1
13025	AK 102-SV DRO	AK 102-SV 4/8/02	1	191410037A	05/23/2019 18:22	Nicholas R Rossi	1
13027	Mini-Ext. AK 102-SV DRO	AK 102/AK 103 04/08/02	1	191410037A	05/22/2019 21:45	Osvaldo R Sanchez	1

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

Sample Description: **QA-O-190511 Grab Water**
Facility# 306448
1441 C Street - Anchorage, AK

Project Name: **306448**

Submittal Date/Time: 05/14/2019 10:25
Collection Date/Time: 05/11/2019 15:00
SDG#: LSV55-08EB

Chevron
ELLE Sample #: GW 1057238
ELLE Group #: 2043860
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
13130	Benzene	71-43-2	N.D.	0.2	1	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1	1
13130	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.2	1	1
13130	Toluene	108-88-3	0.8 J	0.2	1	1
13130	Xylene (Total)	1330-20-7	N.D.	1	5	1
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	**mg/l**	
01438	TPH-GRO AK water C6-C10	n.a.	N.D.	0.014	0.10	1
GC Petroleum Hydrocarbons	**AK 102-SV 4/8/02**		**mg/l**	**mg/l**	**mg/l**	
13025	DRO C10-C25	n.a.	0.074 J	0.052	0.26	1

Target analytes were detected in the method blank associated with the samples as noted on the QC summary. However, the observed sample pattern in the method blank is not typical of #2 fuel/diesel. The reported detection in this sample matches the pattern in the method blank.

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX/MTBE 8260C	SW-846 8260C	1	F191362AA	05/16/2019 15:46	Alexander D Sechrist	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F191362AA	05/16/2019 15:45	Alexander D Sechrist	1
01438	TPH-GRO AK water C6-C10	AK 101	1	19136F20A	05/18/2019 08:50	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030C	1	19136F20A	05/18/2019 08:49	Marie D Beamenderfer	1
13025	AK 102-SV DRO	AK 102-SV 4/8/02	1	191410037A	05/23/2019 18:50	Nicholas R Rossi	1
13027	Mini-Ext. AK 102-SV DRO	AK 102/AK 103 04/08/02	1	191410037A	05/22/2019 21:45	Osvaldo R Sanchez	1

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

Sample Description: **QA-T-190511 Water**
Facility# 306448
1441 C Street - Anchorage, AK

Project Name: **306448**

Submittal Date/Time: 05/14/2019 10:25
Collection Date/Time: 04/17/2019
SDG#: LSV55-09TB

Chevron
ELLE Sample #: GW 1057239
ELLE Group #: 2043860
Matrix: Water

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit*	Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260C**		**ug/l**	**ug/l**	**ug/l**	
13130	Benzene	71-43-2	N.D.	0.2	1	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1	1
13130	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.2	1	1
13130	Toluene	108-88-3	N.D.	0.2	1	1
13130	Xylene (Total)	1330-20-7	N.D.	1	5	1
GC Volatiles	**AK 101**		**mg/l**	**mg/l**	**mg/l**	
01438	TPH-GRO AK water C6-C10	n.a.	N.D.	0.014	0.10	1

Sample Comments

State of Alaska Lab Certification No. UST-061

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX/MTBE 8260C	SW-846 8260C	1	F191362AA	05/16/2019 16:08	Alexander D Sechrist	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F191362AA	05/16/2019 16:07	Alexander D Sechrist	1
01438	TPH-GRO AK water C6-C10	AK 101	1	19136F20A	05/18/2019 08:22	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030C	1	19136F20A	05/18/2019 08:21	Marie D Beamenderfer	1

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

Quality Control Summary

Client Name: Chevron
Reported: 05/24/2019 12:06

Group Number: 2043860

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

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

Method Blank

Analysis Name	Result	MDL**	LOQ
	ug/l	ug/l	ug/l
Batch number: F191362AA	Sample number(s): 1057229-1057239		
Benzene	N.D.	0.2	1
Ethylbenzene	N.D.	0.4	1
Methyl Tertiary Butyl Ether	N.D.	0.2	1
Toluene	N.D.	0.2	1
Xylene (Total)	N.D.	1	3
Batch number: F191392AA	Sample number(s): 1057230-1057232		
Xylene (Total)	N.D.	1	5
	mg/l	mg/l	mg/l
Batch number: 19136F20A	Sample number(s): 1057229-1057239		
TPH-GRO AK water C6-C10	N.D.	0.014	0.10
Batch number: 191410037A	Sample number(s): 1057229-1057238		
DRO C10-C25	0.059 J	0.050	0.25

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	ug/l	ug/l	ug/l	ug/l					
Batch number: F191362AA	Sample number(s): 1057229-1057239								
Benzene	20	21.39			107		80-120		
Ethylbenzene	20	20.88			104		80-120		
Methyl Tertiary Butyl Ether	20	20.83			104		69-122		
Toluene	20	21.31			107		80-120		
Xylene (Total)	60	64.99			108		80-120		
Batch number: F191392AA	Sample number(s): 1057230-1057232								
Xylene (Total)	60	62	60	61.23	103	102	80-120	1	30
	mg/l	mg/l	mg/l	mg/l					
Batch number: 19136F20A	Sample number(s): 1057229-1057239								
TPH-GRO AK water C6-C10	1.10	1.16			105		60-120		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 191410037A	Sample number(s): 1057229-1057238								

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron
Reported: 05/24/2019 12:06

Group Number: 2043860

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/l	LCS Conc mg/l	LCSD Spike Added mg/l	LCSD Conc mg/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
DRO C10-C25	4.01	3.09			77		75-125		

MS/MSD

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

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: F191362AA	Sample number(s): 1057229-1057239 UNSPK: 1057233									
Benzene	N.D.	20	23.83	20	21.56	119	108	80-120	10	30
Ethylbenzene	N.D.	20	21.55	20	19.92	108	100	80-120	8	30
Methyl Tertiary Butyl Ether	N.D.	20	22.2	20	19.71	111	99	69-122	12	30
Toluene	N.D.	20	22.34	20	21.31	112	107	80-120	5	30
Xylene (Total)	N.D.	60	66.25	60	61.63	110	103	80-120	7	30
	mg/l	**mg/l**	**mg/l**	**mg/l**	**mg/l**					
Batch number: 19136F20A	Sample number(s): 1057229-1057239 UNSPK: 1057233									
TPH-GRO AK water C6-C10	N.D.	1.10	1.29	1.10	1.23	117	112	60-120	4	20
	mg/l	**mg/l**	**mg/l**	**mg/l**	**mg/l**					
Batch number: 191410037A	Sample number(s): 1057229-1057238 UNSPK: 1057233									
DRO C10-C25	0.0867	4.55	3.98	4.68	4.26	85	89	75-125	7	30

Surrogate Quality Control

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

Analysis Name: BTEX/MTBE 8260C
Batch number: F191362AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1057229	103	99	95	89
1057230	120	97	97	95
1057231	97	100	96	92
1057232	96	94	95	95
1057233	99	96	94	88
1057234	101	102	96	93
1057235	100	102	100	96

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron
Reported: 05/24/2019 12:06

Group Number: 2043860

Surrogate Quality Control

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

Analysis Name: BTEX/MTBE 8260C
Batch number: F191362AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1057236	98	97	95	88
1057237	99	97	95	87
1057238	100	98	95	89
1057239	99	98	96	89
Blank	98	98	97	91
LCS	99	101	97	92
MS	101	102	96	93
MSD	100	102	100	96
Limits:	80-120	80-120	80-120	80-120

Analysis Name: TPH-GRO AK water C6-C10
Batch number: 19136F20A

	Trifluorotoluene-F
1057229	83
1057230	77
1057231	80
1057232	87
1057233	82
1057234	92
1057235	92
1057236	83
1057237	82
1057238	82
1057239	80
Blank	80
LCS	88
MS	92
MSD	92
Limits:	60-120

Analysis Name: AK 102-SV DRO
Batch number: 191410037A

	Orthoterphenyl
1057229	106
1057230	103
1057231	104
1057232	70
1057233	101
1057234	92
1057235	88

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron
Reported: 05/24/2019 12:06

Group Number: 2043860

Surrogate Quality Control (continued)

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

Analysis Name: AK 102-SV DRO
Batch number: 191410037A

	Orthoterphenyl
1057236	76
1057237	97
1057238	98
MS	92
MSD	88
Limits:	50-150

	Orthoterphenyl
Blank	103
LCS	83
Limits:	60-120

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Chevron Generic Analysis Request/Chain of Custody

eurofins Lancaster Laboratories Environmental

Acct. # 11964 For Eurofins Lancaster Laboratories Environmental use only Group # 2043860 Sample # 1057229 — 39

SCR #: ______

Client Information

Facility # Chevron ~~Station~~ Site 306448
WBS 07.0966 Groundwater Sampling-Monitoring

Site Address: 1441 C Street, Anchorage, ~~AK~~ AK

Chevron PM: Eric Hetrick
Lead Consultant: Arcadis

Consultant/Office: 111 SW Columbia St, Suite 670, Portland, OR

Consultant Project Mgr.: Nicole Monroe

Sampler: A. Tosh

State where samples were collected: Alaska

For Compliance: Yes ☐ No ☐

Matrix

☐ Sediment ☐ Ground ☐ Surface ☐ Potable ☐ NPDES ☐ Air ☐ Soil Water ☐ Oil

Analyses Requested

Preservation and Filtration Codes

BTEX + MTBE 8021 ☐ 8260 ☒ ☐ Naphth; 8260 full scan; Oxygenates; TPH-GRO 8015 ☐ 8260 ☒ AK101; TPH-DRO without Silica Gel Cleanup ☐ AK102; TPH-DRO with Silica Gel Cleanup ☐; VPH ☐ EPH ☐ Method; Lead Total ☐ Diss. ☐ Method

Preservation Codes
H = HCl T = Thiosulfate
N = HNO_3 B = NaOH
S = H_2SO_4 P = H_3PO_4
F = Field Filtered O = Other

☐ Results in Dry Weight
☐ J value reporting needed
☐ Must meet lowest detection limits possible for 8260 compounds

Sample Identification	Collected Date	Collected Time	Grab	Composite	Soil	Water	Oil	Total Number of Containers	BTEX + MTBE	8260 full scan	Oxygenates	TPH-GRO	TPH-DRO without Silica Gel Cleanup	TPH-DRO with Silica Gel Cleanup	VPH	EPH	Lead	Remarks
~~MW-11A~~ MW-19-W-190511	5/11/19	1015	X			X		8	X			X	X					
MW-11A-W-190511		1101	X			X		8	X			X	X					
BD-1-W-190511		—	X			X		8	X			X	X					
MW-20-W-190511		1155	X			X		8	X			X	X					
MW-21-W-190511		1313	X			X		8 ~~24~~	X			X	X					
MW-21-MS/MSD-1-W-190511		1313	X			X		16	X			X	X					
MW-22-W-190511		1419	X			X		8	X			X	X					
MW-23-W-190511		1455	X			X		8	X			X	X					
EQB-1-W-190511		1500	X			X		8	X			X	X					
TB-1-W-190511	4/17/19	—						2	X			X	X					

Turnaround Time Requested (TAT) (please circle)

(Standard — circled) 5 day 4 day
72 hour 48 hour 24 hour

Data Package (circle if required)

Type I - Full (Type III — circled) Type VI (Raw Data)

EDD (circle if required)

(CVX-RTBU-FI_05 (default) — circled) Other: ______

Relinquished by	Date	Time	Received by	Date	Time
[signature]	5/11/19	1630	ANA Cold Storage	5/11/19	1630
ANA Cold Storage	5/13/19	0730	[signature]	5/13/19	0730
[signature]	5/13/19	0945			

Relinquished by Commercial Carrier: AT 5/13/19
UPS ___ FedEx X Other ______

Received by: [signature] Date: 5/14/19 Time: 1025

Temperature Upon Receipt 1.9, 2.3 °C

Custody Seals Intact? (Yes — circled) No

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300

The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be retained by the client.

7047 1117

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Sample Administration Receipt Documentation Log

Doc Log ID: 248908

Group Number(s): 2043860

Client: Arcadis

Delivery and Receipt Information

Delivery Method:	Fed Ex	Arrival Timestamp:	05/14/2019 10:25
Number of Packages:	2	Number of Projects:	1
State/Province of Origin:	AK		

Arrival Condition Summary

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

Unpacked by Melvin Sanchez (8943) at 16:00 on 05/14/2019

Samples Chilled Details

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

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT42-01	1.9	DT	Wet	Y	Bagged	N
2	DT42-01	2.3	DT	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

Explanation of Symbols and Abbreviations

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

BMQL	Below Minimum Quantitation Level	**mL**	milliliter(s)
C	degrees Celsius	**MPN**	Most Probable Number
cfu	colony forming units	**N.D.**	non-detect
CP Units	cobalt-chloroplatinate units	**ng**	nanogram(s)
F	degrees Fahrenheit	**NTU**	nephelometric turbidity units
g	gram(s)	**pg/L**	picogram/liter
IU	International Units	**RL**	Reporting Limit
kg	kilogram(s)	**TNTC**	Too Numerous To Count
L	liter(s)	**µg**	microgram(s)
lb.	pound(s)	**µL**	microliter(s)
m3	cubic meter(s)	**umhos/cm**	micromhos/cm
meq	milliequivalents	**MCL**	Maximum Contamination Limit
mg	milligram(s)		

<	less than
>	greater than
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

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

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

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

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

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Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column >40%. The lower result is reported.
P^	Concentration difference between the primary and confirmation column > 40%. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column >100%. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

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

APPENDIX D

ADEC Data Review Checklist

Laboratory Data Review Checklist

Completed By:

Suresh PR

Title:

Project Chemist

Date:

July 8, 2019

CS Report Name:

First Semiannual 2019 Groundwater Monitoring Report

Report Date:

May 24, 2019

Consultant Firm:

ARCADIS U.S., Inc

Laboratory Name:

Eurofins Lancaster Laboratory, Lancaster, Pennsylvania

Laboratory Report Number:

2043860 – LSV55

ADEC File Number:

2100.26.117

Hazard Identification Number:

23360

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

   ☑ Yes ☐ No Comments:

Yes.

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

   ☐ Yes ☑ No Comments:

Samples were not transferred to another lab.

2. Chain of Custody (CoC)

   a. CoC information completed, signed, and dated (including released/received by)?

   ☑ Yes ☐ No Comments:

Yes.

   b. Correct Analyses requested?

   ☑ Yes ☐ No Comments:

Yes.

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

   ☑ Yes ☐ No Comments:

Yes.

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

   ☑ Yes ☐ No Comments:

Yes.

   c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

   ☑ Yes ☐ No Comments:

Yes.

   d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

   ☐ Yes ☑ No Comments:

No discrepancies.

e. Data quality or usability affected?

☐ Yes ☒ No Comments:

Data quality/usability was not affected.

4. Case Narrative

a. Present and understandable?

☒ Yes ☐ No Comments:

Yes.

b. Discrepancies, errors, or QC failures identified by the lab?

☒ Yes ☐ No Comments:

Yes.

c. Were all corrective actions documented?

☒ Yes ☐ No Comments:

Yes

d. What is the effect on data quality/usability according to the case narrative?

☐ Yes ☒ No Comments:

Data quality/usability was not affected.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☒ Yes ☐ No Comments:

Yes.

b. All applicable holding times met?

☒ Yes ☐ No Comments:

Yes.

c. All soils reported on a dry weight basis?

☐ Yes ☒ No Comments:

No soil samples were submitted for analysis.

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

☒ Yes ☐ No Comments:

Yes.

e. Data quality or usability affected?

☐ Yes ☒ No Comments:

Data quality/usability was not affected.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

☒ Yes ☐ No Comments:

Yes.

ii. All method blank results less than Method Detection Limit (MDL)?

☐ Yes ☒ No Comments:

The compound DRO C10-C25 was detected (0.059 J mg/l) below the reporting limit in a method blank batch 191410037A. A blank action level was established at five times of the detected blank concentration. The compound DRO C10-C25 result in samples MW-19-W-190511, MW-21-W-190511, MW-22-W-190511 and MW-23-W-190511 were reported less than the action level and qualified as non-detect (UB) at the detected concentration.

iii. If above MDL, what samples are affected?

☒ Yes ☐ No Comments:

Compound DRO C10-C25 in samples MW-19-W-190511, MW-21-W-190511, MW-22-W-190511 and MW-23-W-190511 qualified as non-detect (UB).

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☒ Yes ☐ No Comments:

Yes.

v. Data quality or usability affected?

☒ Yes ☐ No Comments:

The compound DRO C10-C25 results in few samples were qualified as non-detect. The reported data should still be considered as usable.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

☒ Yes ☐ No Comments:

Yes.

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

☐ Yes ☒ No Comments:

Metals/Inorganic analysis was not requested for submitted samples.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☒ Yes ☐ No Comments:

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☒ Yes ☐ No Comments:

The RPDs between LCS/LCSD were within the control limits.

v. If %R or RPD is outside of acceptable limits, what samples are affected?

☐ Yes ☒ No Comments:

None of the sample affected.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☒ No Comments:

No.

vii. Data quality or usability affected?

☐ Yes ☒ No Comments:

Data quality/usability was not affected.

c. Matrix spike/Matrix Spike Duplicate (MS/MSD)

i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

☒ Yes ☐ No Comments:

Sample MW-21-W-190511 was used as the MS/MSD analysis.

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

☒ Yes ☐ No Comments:

The MS and MSD recoveries in sample MW-21-W-190511 were within the control limits.

iii. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

☒ Yes ☐ No Comments:

Yes.

iv. If %R or RPD is outside of acceptable limits, what samples are affected?

☐ Yes ☒ No Comments:

None of the samples affected.

v. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☒ No Comments:

No.

vi. Data quality or usability affected? (use comment box to explain)

☐ Yes ☒ No Comments:

Data quality/usability was not affected.

d. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

☒ Yes ☐ No Comments:

Yes

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

☒ Yes ☐ No Comments:

All surrogate recoveries were within the control limits.

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☐ Yes ☒ No Comments:

No.

iv. Data quality or usability affected? (use comment box to explain)

☐ Yes ☒ No Comments:

Data quality/usability was not affected.

e. Trip blank – Volatile analyses only (GRO, BTEX, etc): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples?
(If not, enter explanation below.)

☒ Yes ☐ No Comments:

Yes.

ii. All results less than MDL?

☒ Yes ☐ No Comments:

Yes.

iii. If above MDL, what samples are affected?

☐ Yes ☒ No Comments:

None of the data affected.

iv. Data quality or usability affected?

☐ Yes ☒ No Comments:

Data quality/usability was not affected.

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

☒ Yes ☐ No Comments:

Yes.

ii. Submitted blind to lab?

☒ Yes ☐ No Comments:

BD-1-WD-190511 was collected from MW-11A-W-190511.

iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☒ Yes ☐ No Comments:

The RPDs between parent and duplicate samples were acceptable.

iv. Data quality or usability affected?

☐ Yes ☒ No Comments:

Data quality/usability was not affected.

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below).

☒ Yes ☐ No

Equipment blank sample was collected as QA-O-190511.

i. If above MDL, what samples are affected?

☐ Yes ☒ No Comments:

The compound toluene was detected (0.8J ug/l) below the reporting limit in an equipment blank sample QA-O-190511 for method SW8260. A blank action level was established at five times of the detected blank concentration. The compound toluene result in samples MW-11A-W-190511 and BD-1-WD-190511 were reported less than the action level and qualified as non-detect (UB) at the detected concentration.

The compound DRO C10-C25 was detected (0.074 J mg/l) below the reporting limit in an equipment blank sample QA-O-190511 for method AK-102. A blank action level was established at five times of the detected blank concentration. The compound DRO C10-C25 result in samples MW-19-W-190511, MW-11A-W-190511, BD-1-WD-190511, MW-21-W-190511, MW-22-W-190511 and MW-23-W-190511 were reported less than the action level and qualified as non-detect (UB) at the detected concentration.

ii. Data quality or usability affected?

The compounds toluene and DRO C10-C25 results in few samples were qualified as non-detect. The reported data should still be considered as usable.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

☒ Yes ☐ No Comments:

Yes.