

Ms. Rebekah Reams
State of Alaska Department of Environmental Conservation (ADEC)
Spill Prevention and Response, Contaminated Sites Program
610 University Avenue
Fairbanks, Alaska 99709

Subject:
2021 Second Semi-Annual Groundwater Monitoring Report

Dear Ms. Reams,

On behalf of Chevron Environmental Management Company (Chevron), Arcadis US, Inc. (Arcadis) has prepared the attached *2021 Second Semi-Annual Groundwater Monitoring Report* for the second semi-annual groundwater sampling event for the following facility:

Chevron Branded

<u>Station No.</u>	<u>ADEC File No.</u>	<u>Hazard ID:</u>	<u>Location</u>
98557	2100.26.006	23831	415 Muldoon Road Anchorage, Alaska

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

Sincerely,

Arcadis U.S., Inc.



Max Elias
Project Manager

Copies:
Susan Erickson (electronic copy)
Mark Engelke (electronic copy)

ENVIRONMENT

Date:
November 9, 2021

Contact:
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Our ref:
30063668

Chevron Environmental Management Company

2021 SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Chevron Service Station No. 98557
415 Muldoon Road
Fairbanks, Alaska
ADEC File No. 2100.26.006

November 09 2021

2021 SECOND SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Chevron Service Station No. 98557

415 Muldoon Road
Fairbanks, Alaska

ADEC File No: 2100.26.006
HAZARD ID No: 23831

Prepared for:

Chevron Environmental Management
Company

Prepared by:

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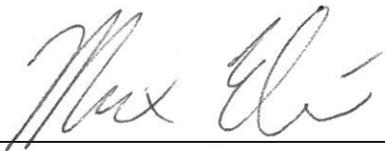
Our Ref.:
30063668

Date:
November 9, 2021

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Catie Jones
Environmental Scientist



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**SEMI-ANNUAL GROUNDWATER MONITORING REPORT
SECOND HALF 2021
November 9, 2021**

Facility No: Chevron Service Station Address: 415 Muldoon Road, Anchorage, Alaska
98557

Arcadis Contact Person / Phone No.: Max Elias / 503-773-8582

Arcadis Project No.: 30063668

Primary Agency/Regulatory ID No.: State of Alaska Department of Environmental Conservation
/ Rebekah Reams / Case No. 2100.26.006

WORK CONDUCTED THIS PERIOD [Second Half 2021]:

1. Conducted semi-annual groundwater monitoring activities on August 27, 2021.
2. Prepared the 2021 *Second Semi-Annual Groundwater Monitoring Report*.

WORK PROPOSED NEXT PERIOD [First Half 2022]:

1. Conduct semi-annual groundwater monitoring activities in the First half of 2022.
2. Prepare the 2022 *First Semi-Annual Groundwater Monitoring Report*.

Current Phase of Project:	<u>Monitoring</u>	
Frequency of Monitoring / Sampling:	<u>Semi-Annual</u>	
Is Light Non-Aqueous Phase Liquid (LNAPL) Present On-site:	<u>No</u>	
Cumulative LNAPL Recovered to Date:	<u>0.0</u>	(gallons)
Approximate Depth to Groundwater:	<u>17.62 to 18.24</u>	(feet below top of casing)
Approximate Groundwater Elevation:	<u>234.30 to 234.76</u>	(feet relative to NAVD88)
Groundwater Flow Direction	<u>West-northwest</u>	
Groundwater Gradient	<u>0.004</u>	(feet per foot)

Current Remediation Techniques:	None
Permits for Discharge:	None
Summary of Unusual Activity:	Monitoring wells MW-3 and MW-13 could not be gauged or sampled due to continuous flooding.
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 second semi-annual groundwater sampling event of 2021 for Chevron Service Station 98557, located at 415 Muldoon Road in Anchorage, Alaska (the site). The site location map and site plan are shown on Figure 1 and Figure 2.

This work was conducted under the direction of a “Qualified Environmental Professional” (QEP) and “Qualified Sampler” (18 Alaska Administrative Code [AAC] 75.333). A site background and a historical site summary are attached as Appendix A.

2 GROUNDWATER MONITORING

2.1 Groundwater Gauging Methods

The 2021 second semi-annual groundwater gauging event was conducted on August 27, 2021. 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.

2.2 Groundwater Elevation and Flow Direction

During the 2021 second semi-annual event, monitoring wells MW-1, MW-3, MW-13, MW-14, and RW-1 were scheduled to be gauged for groundwater elevations and the presence of LNAPL. Monitoring well MW-3 and MW-13 could not be gauged due to continuous flooding of the well box. The groundwater monitoring event field notes are presented in Appendix B.

The inferred groundwater flow direction for the second semi-annual 2021 monitoring events is to the west-northwest and is consistent with the historical predominate flow direction. There are two historical predominate flow directions east-northeast and northwest. Current and historical groundwater gauging and

analytical results are included in Table 1 and Table 2 respectively. A groundwater contour map is presented as Figure 3.

2.3 Groundwater Sampling Methods

The second semi-annual groundwater monitoring event was conducted on August 27, 2021. Groundwater samples were collected from monitoring wells MW-1 and MW-14 using a low flow sampling method. Monitoring well MW-3 and MW-13 could not be sampled due to continuous flooding.

Sampling procedures were conducted in accordance with ADEC *Field Sampling Guidance* (ADEC, 2019). 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:

- $\pm 3\%$ for temperature (minimum of $\pm 0.2\text{ C}^\circ$),
- ± 0.1 for pH,
- $\pm 3\%$ for conductivity,
- $\pm 10\text{ mv}$ for redox potential,
- $\pm 10\%$ for dissolved oxygen, and
- $\pm 10\%$ for turbidity.

Sample bottles were labeled, stored in a cooler packed with ice, and submitted to Pace Analytical National Centre for Testing & Innovation (Pace Analytical), Mount Juliet, Tennessee, under proper chain-of-custody procedures. Field notes documenting the second-annual event is presented in Appendix B.

Groundwater samples collected from monitoring wells MW-1, and MW-14 were submitted to the analytical laboratory for the following analyses:

- Total petroleum hydrocarbons as diesel range organics (TPH-d) by Alaska method AK102
- Lead by USEPA Method 6010D

A groundwater duplicate sample was collected from monitoring well MW-1. The duplicate sample was analyzed for TPH-d, and Lead. The duplicate sample was submitted blind with the sample set to Pace Analytical.

2.4 Groundwater Analytical Results

Routine analytical results for TPH-d and Lead obtained from the second semi-annual 2021 groundwater monitoring event are summarized in Table 1 and are shown on Figure 4. Historic groundwater monitoring data are summarized in Table 2. Additional Historical Groundwater data is available in Appendix E.

3 LABORATORY DATA QUALITY ASSURANCE SUMMARY

As required by ADEC (Technical Memorandum, dated October 2019), Arcadis completed a laboratory data review checklist for the laboratory report generated for the 2021 second semi-annual event. The laboratory report is included as Appendix C and data review checklist is 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.

3.1 Precision

The relative percent difference (RPD) for laboratory control sample and laboratory control sample duplicate (LCS/LCSD), matrix spike (MS) and matrix spike duplicate (MSD), 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.

3.2 Accuracy

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

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

3.3 Representativeness

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

3.4 Comparability

The laboratory results are presented in the same units as previous reports to allow comparison. The target compounds were not detected in trip blank and method blank with below exceptions.

TPH-d was detected below the reporting limit in the method blank and equipment blank for method AK102. Based on blank evaluation, the results for TPH-d in sample locations MW-14, MW-1, and the blind duplicate (BD-1) was qualified as non-detect.

3.5 Completeness

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

3.6 Sensitivity

The laboratory reported detection limit for compounds 1,1,2,2-tetrachloroethane, 1,1,2-trichloroethane, chloroform, and vinyl chloride. The compounds exceeded the ADEC groundwater cleanup levels, however the laboratory method detection limit is below the ADEC groundwater cleanup levels. As all samples

were not detected for the mentioned constituents, the sensitivity of the analyses was adequate. The sensitivity for all other analytes was adequate as the detection limits were less than the ADEC groundwater cleanup levels.

4 CONCLUSIONS AND RECOMMENDATIONS

The groundwater data collected during the second semi-annual 2021 events indicates that the groundwater flow direction, west-northwest, is consistent with the recent observed groundwater flow directions. During the second semi-annual 2021 groundwater monitoring event, groundwater samples were collected for analysis from monitoring wells MW-1 and MW-14. 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 first semi-annual sampling event of 2022 will be conducted in the spring of 2022.

5 REFERENCES

ADEC. *Field Sampling Guidance*. Division of Spill Prevention and Response Contaminated Sites Program. 2019.

ADEC Technical Memorandum, October 2019. *Minimum Quality Assurance Requirements for Sample Handling, Reports and Laboratory Data*. ADEC, Division of Spill Prevention and Response Contaminated Sites Program.

TABLES



Table 1. Current Groundwater Gauging and Analytical Results

Chevron Service Station 9-8557

415 Muldoon Road,

Anchorage, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft)	Datum	DTW (ft bTOC)	LNAPL thickness (ft)	GW Elev (ft)	TPH-d (µg/L)	Lead (µg/L)	Comments
ADEC Groundwater Cleanup Levels								1,500	15	
MW-1	8/27/2021	16-26	252.38	NAVD88	17.62	0.00	234.76	<800 B [7.40]	7.40 [7.69]	
MW-3	8/27/2021	14-24	252.69	NAVD88	--	--	--	--	--	Could not gauge due to continuous flooding
MW-13	8/27/2021	--	252.86	NAVD88	--	--	--	--	--	Could not gauge due to continuous flooding
MW-14	8/27/2021	--	251.82	NAVD88	17.52	0.00	234.30	<800 B	14.6	
RW-1	8/27/2021	15-29.5	252.55	NAVD88	18.24	0.00	234.31	--	--	
QA (EQB)	8/27/2021	--	--	--	--	--	--	695 J	<6.00	

Notes:

ID = Identification

MW = Groundwater monitoring well

TOC = Top of casing

DTW = Depth to groundwater

ft bTOC = Feet below top of casing

ft = Feet relative to NAVD88

GW Elev = Groundwater elevation

µg/L = Micrograms per liter

Bold = Value exceeds Method Detection Limit (MDL)

Bold and Shaded = Value exceeds ADEC Groundwater Cleanup Level

<6.00 = Not detected at or above the Reported Detection Limit (RDL)

J = The compound was positively identified; however, the associated numerical value is an estimated concentration only.

B = Compound considered non-detect at the listed value due to associated blank contamination.

TPH-d = Total petroleum hydrocarbons, diesel range by LUFT GC/MS according to USEPA Method AK 102

Lead analyzed by EPA Method 6010D

-- = Not analyzed/ Not measured/ Not Available

[] = Duplicate Result

QA (EQB) = Quality Assurance (Equipment Blank)

LUFT = Leaking Underground Fuel Tank

GC/MS = Gas chromatography/Mass Spectrometry

NAVD 88 = North American Vertical Datum of 1988

LNAPL = Light Non-Aqueous Phase Liquid

ADEC = Alaska Department of Environmental Conservation

Table 2. Historical Groundwater Gauging and Analytical Results
Second Quarter 2003 to Current
 Chevron Service Station 9-8557
 415 Muldoon Road,
 Anchorage, Alaska

Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft amsl)	DTW (ft bTOC)	LNAPL thickness (ft)	GW Elev (ft amsl)	TPH-d (µg/L)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Lead (µg/L)	HVOCs (µg/L)	SVOC's (µg/L)	Naphthalene (µg/L)	Comments
ADEC Groundwater Cleanup Levels							1,500	2,200	4.6	1,100	15	190	1.4	15	--	--	1.7	
MW-4R	6/4/2004	15-24.5	--	18.76	0.00	--	--	120	<0.5	<0.5	<0.5	<1.0	<2	--	<0.5-<2	--	--	
MW-4R	9/28/2004	15-24.5	--	18.65	0.00	--	--	30	<0.5	<0.5	<0.5	<1.0	<2	--	<0.5-<2	--	--	
MW-4R	5/13/2005	15-24.5	--	17.69	0.00	--	--	<10	<0.5	<0.5	<0.5	<1.0	<2	--	<0.5-<2	--	--	
MW-4R	9/26/2005	15-24.5	--	17.50	0.00	--	--	30	<0.5	<0.5	<0.5	<1.0	<2	--	<0.5-<2	--	--	
MW-4R	5/17/2006	15-24.5	--	18.61	0.00	--	--	<10	<0.5	<0.5	<0.5	<1.0	<2	--	<0.5-<2	--	--	
MW-4R	9/25/2006	15-24.5	--	17.85	0.00	--	--	340	<0.5	<0.7	<0.8	<1.6	<2	--	<0.8-<2	--	--	
MW-4R	5/15/2007	15-24.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-4R	9/24/2007	15-24.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Unable to locate
MW-4R	5/14/2008	15-24.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Unable to locate
MW-4R	9/16/2008	15-24.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Unable to locate
MW-11	10/8/2003	14-24	97.76	79.23	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11	6/4/2004	14-24	97.76	79.00	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11	9/28/2004	14-24	97.76	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Inaccessible due to flooding
MW-11	5/13/2005	14-24	97.76	80.11	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11	9/26/2005	14-24	97.76	DRY	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-11	5/17/2006	14-24	97.76	DRY	--	--	--	--	--	--	--	--	--	--	--	--	--	Abandoned July 2006
MW-12	5/23/2003	15-24.5	98.52	18.71	0.00	79.81	--	<10	<0.5	<0.5	<0.5	<1	<0.5	--	<0.5-<2	--	--	
MW-12	10/8/2003	15-24.5	98.52	19.06	0.00	79.46	--	<10	<0.5	<0.5	<0.5	<1	<2	--	<0.5-<2	--	--	
MW-12	6/4/2004	15-24.5	98.52	19.28	0.00	79.24	--	<10 [< 10]	<0.5 [<0.5]	<0.5 [<0.5]	<0.5 [<0.5]	<1 [<1]	<2 [<2]	--	<0.5-<2 [$<0.5-<2$]	--	--	
MW-12	9/28/2004	15-24.5	98.52	19.23	0.00	79.29	--	<10	<0.5	<0.5	<0.5	<1	<2	--	<0.5-<2	--	--	
MW-12	5/13/2005	15-24.5	98.52	18.27	0.00	80.25	--	<10	<0.5	<0.5	<0.5	<1	<2	--	<0.5-<2	--	--	
MW-12	9/26/2005	15-24.5	98.52	DRY	--	--	--	--	--	--	--	--	--	--	--	--	--	
MW-12	5/17/2006	15-24.5	98.52	19.23	0.00	79.29	--	<10	<0.5	<0.7	<0.8	<1.6	<2	--	<0.8-<2	--	--	
MW-13	7/30/2012	--	252.83	17.86	0.00	234.97	6,600 J / 17,000 J	1,700 / 1,500	9.8 / 10	12.0 / 12.0	3.6 / 3.7	190 / 190	4.0 / 4.0	490 / 443	--	0.126 J / 0.176 J	--	
MW-13	5/14/2013	--	252.83	18.15	0.00	234.68	1,000 / 730	380 / 370	1.2 / 1.2	0.87 J / 0.88 J	9.8 / 10	28 / 30	ND / ND	740 / 570	--	--	--	
MW-13	5/14/2013	--	252.83	18.15	0.00	234.68	3,500 J / 1,600 J	270 / 310	1.2 / 1.2	0.93 J / 0.97 J	8.7 / 8.5	26 / 26	--	1400 / 970	--	--	--	
MW-13	9/17/2013	--	252.83	17.82	0.00	235.01	--	--	--	--	--	--	--	--	--	--	--	
MW-13	9/18/2013	--	252.83	--	0.00	--	710 / 770	170 / 180	0.98 J / 0.97 J	0.59 J / 0.63 J	5.7 / 5.7	15 / 15	--	210 J / 1,200 J	--	--	--	
MW-13	5/2/2014	--	252.83	18.20	0.00	234.63	620 / 540	160 / 140	0.90 J / 0.77 J	0.41 J / <0.36	4.9 / 4.1	3.4 / 2.8 J	--	25 / 18	--	--	--	
MW-13	11/8/2014	--	252.83	18.70	0.00	234.13	550 J / 500 J	89 J / 87 J	0.54 J / 0.46 J	<0.19 J / <0.18 J	1.8 / 1.8	1.1 J / 1.2 J	--	33 / 20	--	--	--	
MW-13	5/6/2015	--	252.83	19.38	0.00	233.45	390 J / 350 J	--	--	--	--	--	--	673 / 875	--	--	--	
MW-13	10/21/2015	--	252.83	18.93	0.00	233.90	1,100 / 4,100 J	--	--	--	--	--	--	74.8 / 53.9	--	--	--	
MW-13	6/3/2016	--	252.83	18.94	0.00	233.89	5,300 J / 5,200 J	--	--	--	--	--	--	223 / 219	--	--	--	
MW-13	10/14/2016	--	252.83	18.83	0.00	234.00	710 / 650	--	--	--	--	--	--	74.7 / 69.6	--	--	--	
MW-13	5/23/2017	--	252.83	18.53	0.00	234.30	360 J / 1900 J	--	--	--	--	--	--	298 J / 226 J	--	--	--	
MW-13	9/1/2017	--	252.83	19.11	0.00	233.72	590 J	--	--	--	--	--	--	137	--	--	--	
MW-13	5/21/2018	--	252.83	19.23	0.00	233.60	5,100 J	--	--	--	--	--	--	1,240 / 910	--	--	--	
MW-13	9/25/2018	--	252.83	19.27	0.00	233.56	9,100 / 7,400	--	--	--	--	--	--	193 / 265	--	--	--	
MW-13	4/10/2019	--	252.86	18.76	0.00	234.10	5,100	--	--	--	--	--	--	90.7	--	--	--	Depth to water taken from Recent Survey Notes dated 6/6/2019. TOC Data from Survey report by McLane Consulting dated 6/14/19 (Rev 2)
MW-13	9/10/2019	--	252.86	19.00	0.00	233.86	2,800 [2,800]	--	--	--	--	--	--	48 [50]	--	--	--	
MW-13	4/3/2020	--	252.86	19.13	0.00	233.73	1,240	--	2.14	0.495 J	4.55	3.39	<1.00	83.4	--	--	<5.00	
MW-13	10/1/2020	--	252.86	18.61	0.00	234.25	536 J [627 J]	--	1.40 [1.26]	<1.00 [<1.00]	2.23 [2.10]	0.195 J [<3.00]	<1.00 [<1.00]	25.3 [28.6]	--	--	<0.500 [<0.500]	
MW-13	4/8/2021	--	252.86	19.03	0.00	233.83	567 J [526 J]	--	--	--	--	--	--	23.5 B [17.8 B]	--	--	--	
MW-13	8/27/2021	--	252.86	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Could not gauge due to continuous flooding. Oil observed on surface water entering.
MW-14	08/22/2011	--	251.41	17.99	0.00	233.42	<49	43 J	<0.5	<0.5	<0.5	<1.5	- ND	<0.0026 UJ	--	ND	--	
MW-14	5/22/2012	--	251.41	17.11	0.00	234.30	<49 UJ	<10	<0.5	<0.5	<0.5	<1.5	- ND	<0.0022	--	0.0003	--	
MW-14	7/30/2012	--	251.41	16.51	0.00	234.90	<48	<10	<0.5	<0.5	<0.5	<1.5	- ND	<0.0051	--	ND	--	
MW-14	5/14/2013	--	251.41	16.81	0.00	234.60	<63 J	<50	<0.24	<0.23	<0.24	<0.72	--	0.020	--	--	--	
MW-14	5/14/2013	--	251.41	16.81	0.00	234.60	<120 J	<50	<0.24	<0.23	<0.24	<0.72	--	0.10	--	--	--	Sample Collected via hydrasteeve
MW-14	9/17/2013	--	251.41	16.45	0.00	234.96	--	--	--	--	--	--	--	--	--	--	--	
MW-14	9/18/2013	--	--	--	0.00	--	<230	<50	<0.24	<0.23	<0.24	<0.72	--	18	--	--	--	
MW-14	5/2/2014	--	251.41	16.88	0.00	234.53	<68	<50	<0.15	<0.11	<0.16	<0.40	--	0.18	--	--	--	
MW-14	11/8/2014	--	251.41	17.37	0.00	234.04	91 J	<50 J	<0.15	<0.11	<0.16	<0.40	--	0.18 J	--	--	--	
MW-14	5/6/2015	--	251.41	18.01	0.00	233.40	<51 J	--	--	--	--	--	--	5.3 J	--	--	--	
MW-14	10/21/2015	--	251.87	18.04	0.00	233.83	<51 J	--	--	--	--	--	--	56.1 J	--	--	--	
MW-14	6/3/2016	--	251.41	18.07	0.00	233.34	<51	--	--	--	--	--	--	<5.1	--	--	--	
MW-14	10/14/2016	--	251.41	17.98	0.00	233.43	1,200	--	--	--	--	--	--	<6.2	--	--	--	
MW-14	5/23/2017	--	251.41	17.65	0.00	233.76	<53	--	--	--	--	--	--	<6.2	--	--	--	
MW-14	9/1/2017	--	251.41	18.23	0.00	233.18	<50 J	--	--	--	--	--	--	12.5 J	--	--	--	
MW-14	5/21/2018	--	251.41	19.36	0.00	232.05	<50 J	--	--	--	--	--	--	30	--	--	--	
MW-14	9/25/2018	--	251.41	18.41	0.00	233.00	<51	--	--	--	--	--	--	<7.1	--	--	--	
MW-14	4/10/2019	--	251.82	17.79	0.00	234.03	<250 B [$<260 B$]	--	--	--	--	--	--	9 J [9.2 J]	--	--	--	Depth to water taken from Recent Survey Notes dated 6/6/2019. TOC Data from Survey report by McLane Consulting dated 6/14/19 (Rev 2)
MW-14	9/10/2019	--	251.82	18.02	0.00	233.80	< 78	--	--	--	--	--	--	2.7 J	--	--	--	
MW-14	4/3/2020	--	251.82	18.20	0.00	233.62	<800 B [$<872 B$]	--	<1.00 [<1.00]	<1.00 [<1.00]	<1.00 [<1.00]	<3.00 [<3.00]	<1.00 [<1.00]	12.2 [11.1]	--	--	<5.00 [<5.00]	
MW-14	9/30/2020	--	251.82	17.65	0.00	234.17	<800	--	<1.00	<1.00	<1.00	<3.00	<1.00	<6.00	--	--	<0.500	

Table 2. Historical Groundwater Gauging and Analytical Results
Second Quarter 2003 to Current
Chevron Service Station 9-8557
415 Muldoon Road,
Anchorage, Alaska

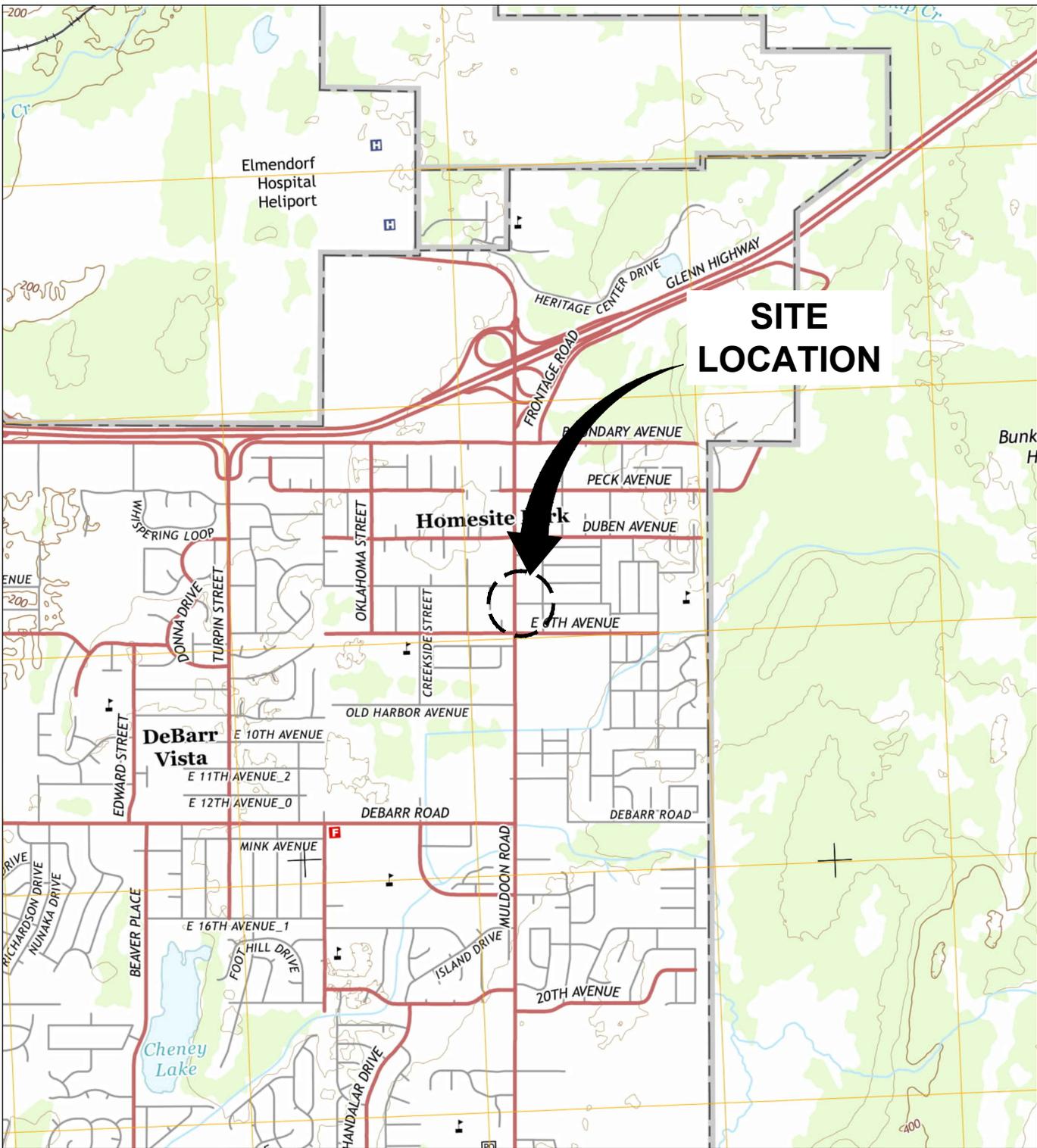
Well ID	Sample Date	Screen Interval (ft bTOC)	TOC (ft amsl)	DTW (ft bTOC)	LNAPL thickness (ft)	GW Elev (ft amsl)	TPH-d (µg/L)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Lead (µg/L)	HVOCs (µg/L)	SVOCs (µg/L)	Naphthalene (µg/L)	Comments
ADEC Groundwater Cleanup Levels							1,500	2,200	4.6	1,100	15	190	1.4	15	--	--	1.7	
RW-1	4/21/2010	15-29.5	--	19.49	0.00	--	520 J / <510	--	<0.5 / <0.5	<0.5 / <0.5	<0.5 / <0.5	<0.5	--	--	ND	ND	--	
RW-1	7/22/2010	15-29.5	--	19.11	0.00	--	<510 / <510	10 J / <10	<0.5 / <0.5	<0.5 / <0.5	<0.5 / <0.5	<1.5 / <1.5	--	--	ND	ND	--	
RW-1	4/19/2011	15-29.5	--	19.41	0.00	--	99 J / 89 J	19 J / <10	<0.5 / <0.5	<0.5 / <0.5	<0.5 / <0.5	<1.5 / <1.5	--	--	ND / ND	ND / ND	--	
RW-1	8/22/2011	15-29.5	252.85	19.09	0.00	233.76	<48 / <49	19 J / 11 J	<0.5 / <0.5	<0.5 / <0.5	<0.5 / <0.5	<1.5 / <1.5	--	<2.6 UJ / <2.2	ND / ND	ND / ND	--	
RW-1	5/22/2012	15-29.5	252.85	18.23	0.00	234.62	51 J / 56 J	<10 / <10	<0.5 / <0.5	<0.5 / <0.5	<0.5 / <0.5	<1.5 / <1.5	--	<2.2 / <2.2	ND / ND	ND / ND	--	
RW-1	7/30/2012	15-29.5	252.85	17.63	0.00	235.22	<51	<10	<0.5	<0.5	<0.5	<1.5	--	<5.1	ND	ND	--	
RW-1	5/14/2013	15-29.5	252.85	17.95	0.00	234.90	--	--	--	--	--	--	--	--	--	--	--	
RW-1	9/17/2013	15-29.5	252.85	17.58	0.00	235.27	--	--	--	--	--	--	--	--	--	--	--	
RW-1	5/2/2014	15-29.5	252.85	18.00	0.00	234.85	--	--	--	--	--	--	--	--	--	--	--	
RW-1	11/8/2014	15-29.5	252.85	18.47	0.00	234.38	--	--	--	--	--	--	--	--	--	--	--	
RW-1	5/6/2015	15-29.5	252.85	20.13	0.00	232.72	--	--	--	--	--	--	--	--	--	--	--	
RW-1	10/21/2015	15-29.5	252.85	18.87	0.00	233.98	--	--	--	--	--	--	--	--	--	--	--	
RW-1	6/3/2016	15-29.5	252.85	18.71	0.00	234.14	--	--	--	--	--	--	--	--	--	--	--	
RW-1	10/14/2016	15-29.5	252.85	18.61	0.00	234.24	--	--	--	--	--	--	--	--	--	--	--	
RW-1	5/23/2017	15-29.5	252.85	18.28	0.00	234.57	--	--	--	--	--	--	--	--	--	--	--	
RW-1	9/1/2017	15-29.5	252.85	18.87	0.00	233.98	--	--	--	--	--	--	--	--	--	--	--	
RW-1	5/21/2018	15-29.5	252.85	18.48	0.00	234.37	--	--	--	--	--	--	--	--	--	--	--	
RW-1	9/25/2018	15-29.5	252.85	19.03	0.00	233.82	--	--	--	--	--	--	--	--	--	--	--	
RW-1	4/10/2019	15-29.5	252.55	18.51	0.00	234.04	--	--	--	--	--	--	--	--	--	--	--	Depth to water taken from Recent Survey Notes dated 6/6/2019. TOC Data from Survey report by McLane Consulting dated 6/14/19 (Rev 2)
RW-1	9/10/2019	15-29.5	252.55	18.41	0.00	234.14	--	--	--	--	--	--	--	--	--	--	--	
RW-1	4/3/2020	15-29.5	252.55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Unable to locate well
RW-1	9/30/2020	15-29.5	252.55	18.34	0.00	234.21	--	--	--	--	--	--	--	--	--	--	--	
RW-1	4/8/2021	15-29.5	252.55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Not located due to ice
RW-1	8/27/2021	15-29.5	252.55	18.24	0.00	234.31	--	--	--	--	--	--	--	--	--	--	--	
QA	10/8/2003	--	--	--	--	--	--	<10	<0.5	<0.5	<0.5	<0.5	<2	--	--	--	--	
QA	6/4/2004	--	--	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<2	--	--	--	--	
QA	9/28/2004	--	--	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<2	--	--	--	--	
QA	5/13/2005	--	--	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<2	--	--	--	--	
QA	9/26/2005	--	--	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<2	--	--	--	--	
QA	5/15/2007	--	--	--	--	--	--	--	<0.5	<0.7	<0.8	<1.6	<2	--	<0.8-<2.0	--	--	
QA	9/24/2007	--	--	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<2	--	--	--	--	
QA	5/14/2008	--	--	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<2	--	--	--	--	
QA	5/14/2008	--	--	--	--	--	--	--	<0.5	<0.5	<0.5	<0.5	<2	--	--	--	--	
QA	9/16/2008	--	--	--	--	--	--	--	<10	--	--	--	--	--	--	--	--	
QA	9/16/2008	--	--	--	--	--	--	--	<10	--	--	--	--	--	--	--	--	
QA (EQB)	4/3/2020	--	--	--	--	--	174 J	--	<1.00	<1.00	<1.00	<3.00	<1.00	<6.00	--	--	<5.00	
QA (EQB)	9/30/2020	--	--	--	--	--	<800	--	<1.00	<1.00	<1.00	<3.00	<1.00	4.45 J	--	--	<0.500	
QA (EQB)	4/8/2021	--	--	--	--	--	<800	--	--	--	--	--	--	6.40 B	--	--	--	
QA (EQB)	8/27/2021	--	--	--	--	--	695 J	--	--	--	--	--	--	<6.00	--	--	--	
Trip Blank	4/3/2020	--	--	--	--	--	--	--	<1.00	<1.00	<1.00	<3.00	<1.00	--	--	--	<5.00	
Trip Blank	9/30/2020	--	--	--	--	--	--	--	<1.00	<1.00	<1.00	<3.00	<1.00	--	--	--	--	

Notes:
ID = Identification
MW, RW = Groundwater monitoring well
TOC = Top of casing
DTW = Depth to groundwater
ft bTOC = Feet below top of casing
ft = Feet relative to NAVD88
GW Elev = Groundwater elevation
µg/L = Micrograms per liter
-- = Not analyzed/ Not available
QA (EQB) = Quality Assurance (Equipment Blank)
[] = Duplicate Result
<6.00 = Not detected at or above the Reported Detection Limit (RDL)
Bold = Value exceeds Method Detection Limit (MDL)
Bold and Shaded = Value exceeds ADEC Groundwater Cleanup Level
Bold and Italicized : Constituent considered non-detect, however Laboratory RDL is greater than the ADEC Groundwater Cleanup Level
J = The compound was positively identified; however, the associated numerical value is an estimated concentration only.
B = Compound considered non-detect at the listed value due to associated blank contamination.
The laboratory for this site was changed from Eurofins Calscience to Pace Analytical prior to the first quarter 2020 groundwater monitoring event. Prior to this date, Eurofins Calscience was using the carbon ranges as follows: TPH-d as C13-C22. Pace Analytical reports the following carbon ranges: TPH-d as C12-C22.

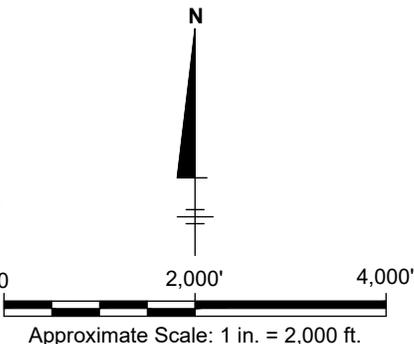
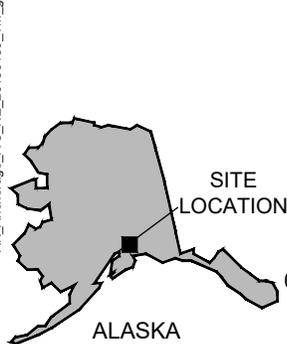
TPH-g= Total petroleum hydrocarbons, gasoline range by LUFT GC/MS according to AK 102-SV 4/8/02
TPH-d = Total petroleum hydrocarbons, diesel range by LUFT GC/MS according to USEPA Method AK 102
Samples analyzed by United States Environmental Protection Agency (USEPA) Method 8260C
Benzene, Toluene, Ethylbenzene and Total xylenes (collectively BTEX)
MTBE = Methyl tert-butyl ether
Naphthalene analyzed by EPA Method 8270E-SIM
Lead analyzed by EPA Method 6010D
HVOCs = Halogenated Volatiles
SVOCs = Semi Volatile Organic Compound
ADEC = Alaska Department of Environmental Conservation
NAVD88 = North American Vertical Datum of 1988
LUFT = Leaking Underground Fuel Tank
LNAPL = Light non-aqueous phase liquid
ND = Not detected

FIGURES





MAP SOURCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., ANCHORAGE A-8, ALASKA, 2016



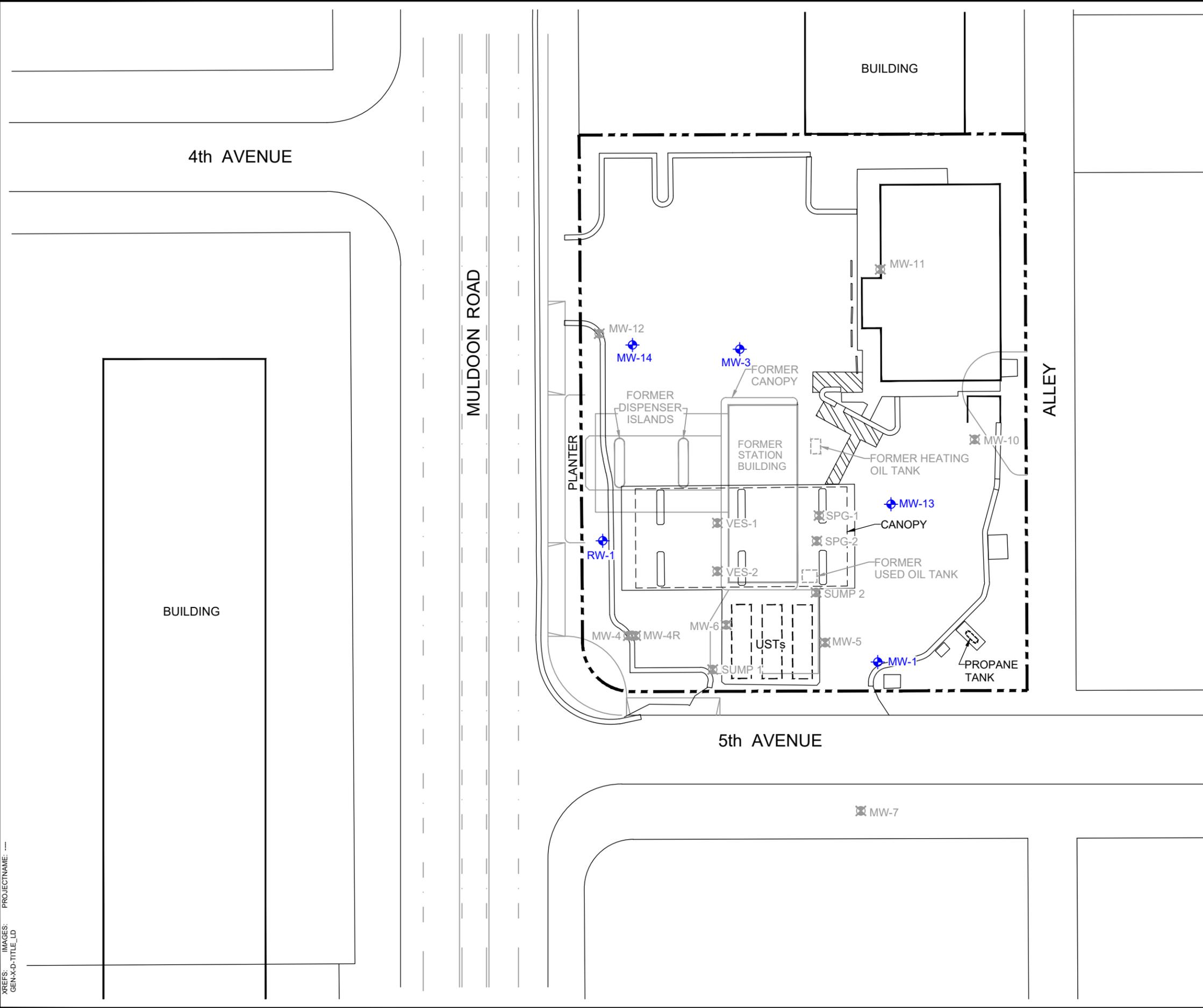
CHEVRON SERVICE STATION 9-8557
 415 MULDOON ROAD
 ANCHORAGE, ALASKA

SITE LOCATION MAP

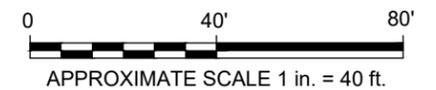


FIGURE
1

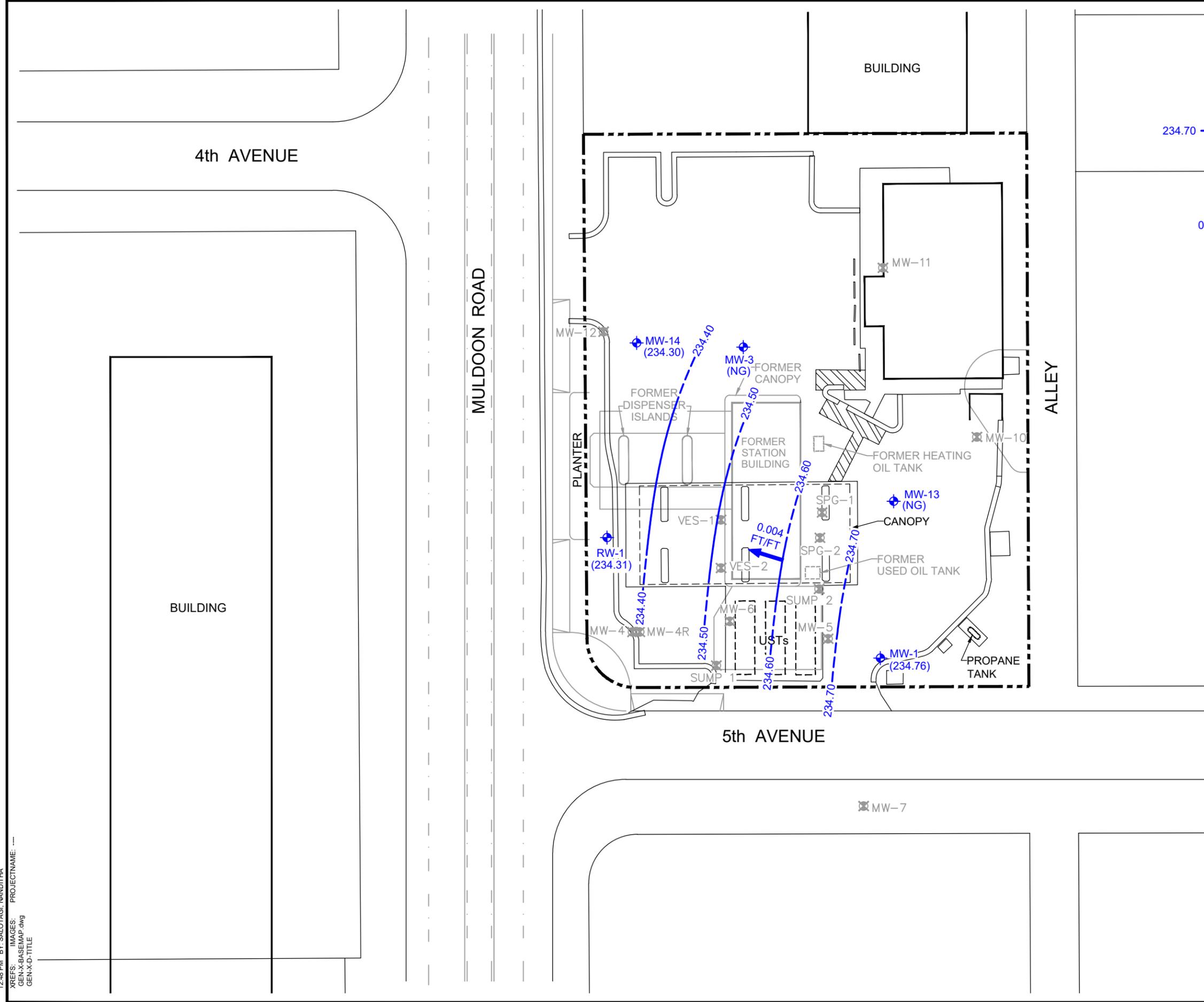
C:\Users\salidag7\992ACCDocs\Arcadis\AUS-CHEVRON-98557-ANCHORAGE Alaska\Project Files\202101-1-In Progress\01-1-DWG\GEN-F02-SITE PLAN.dwg LAYOUT:2 SAVED: 9/16/2021 12:02 PM ACADVER: 24.05 (LMS TECH) PAGES: 24 PLOTSTYLETABLE: PLOTSTYLETABLE.dwt PLOTTED: 9/16/2021 12:02 PM
 XREFS: IMAGES: PROJECTNAME: GEN-X-D-TITLE_ID



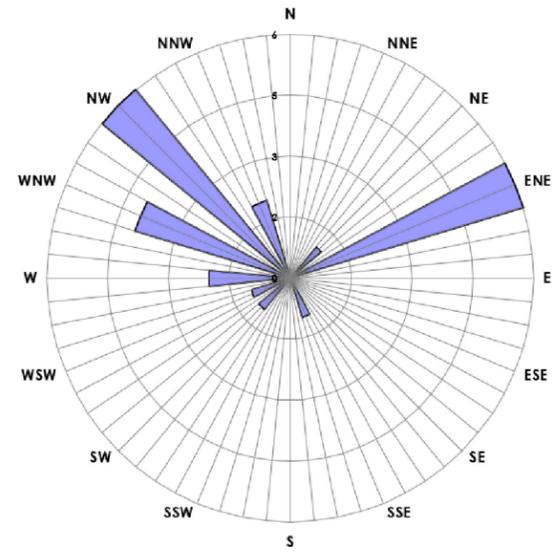
- LEGEND:**
- PROPERTY BOUNDARY
 - ◆ GROUNDWATER MONITORING WELL
 - ⊠ ABANDONED MONITORING WELL
 - ▣ USTs UNDERGROUND STORAGE TANKS



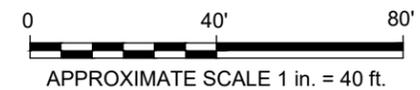
CHEVRON SERVICE STATION 9-8557 415 MULDOON ROAD ANCHORAGE, ALASKA	
SITE PLAN	
	FIGURE 2



- LEGEND:**
- PROPERTY BOUNDARY
 - GROUNDWATER MONITORING WELL
 - ABANDONED MONITORING WELL
 - GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
 - (234.76) GROUNDWATER ELEVATION IN FEET RELATIVE TO NAVD88
 - APPROXIMATE DIRECTION OF GROUNDWATER FLOW
 - 0.004 FT/FT APPROXIMATE HYDRAULIC GRADIENT (FEET/FOOT)
 - NAVD88 NORTH AMERICAN VERTICAL DATUM OF 1988
 - USTs UNDERGROUND STORAGE TANKS
 - (NG) NOT GAUGED



HISTORIC GROUNDWATER FLOW DIRECTION

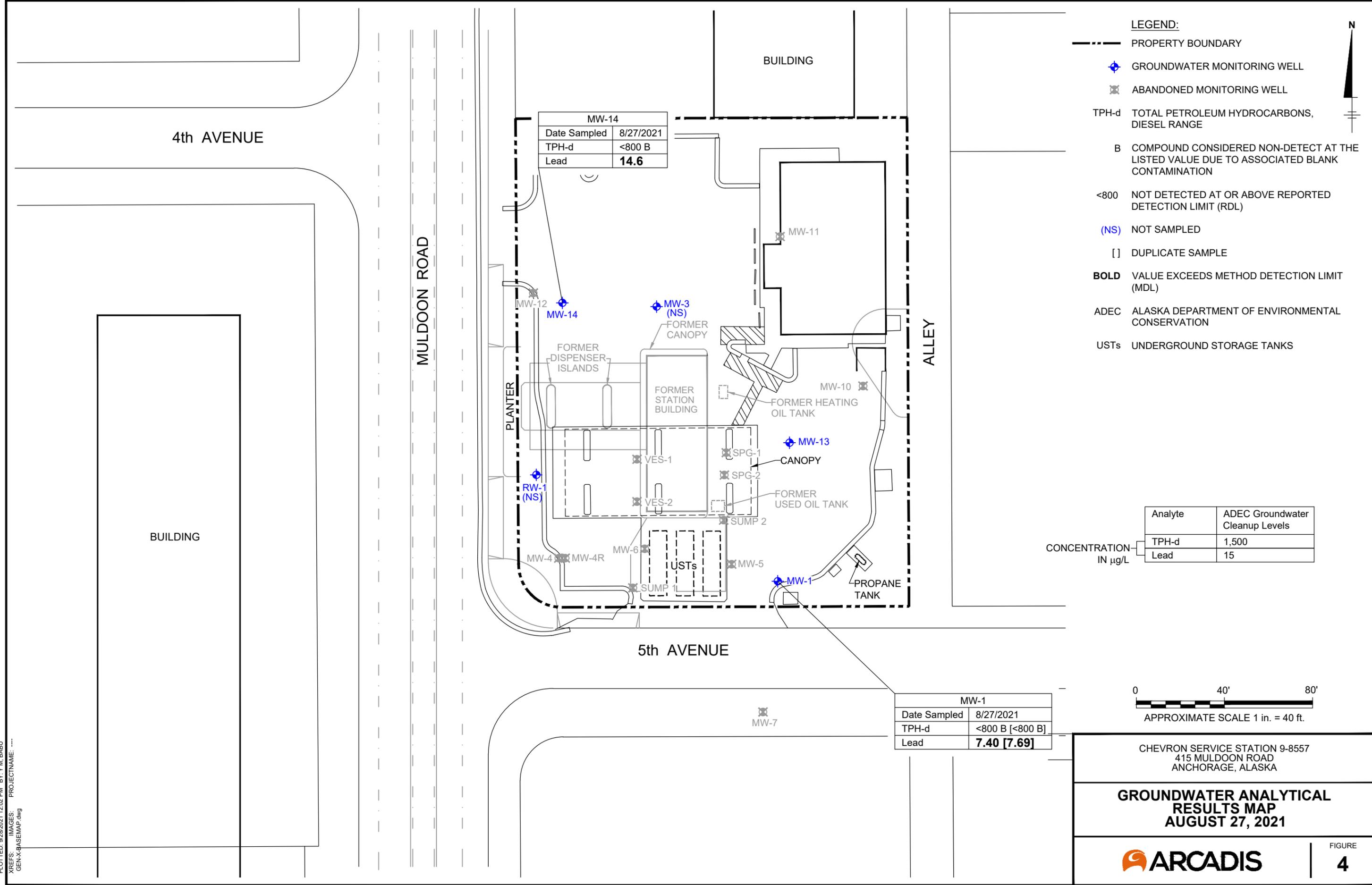


CHEVRON SERVICE STATION 9-8557
415 MULDOON ROAD
ANCHORAGE, ALASKA

**GROUNDWATER ELEVATION
CONTOUR MAP
AUGUST 27, 2021**

FIGURE
3

C:\Users\ymb2640\ACCDocs\Arcadis\ALUS-CHEVRON-ANCHORAGE-Alaska\Project Files\2021\10\1-in Progress\01-DWG\GMM-2SA2021-F04-GROUNDWATER ANALYTICAL MAP.dwg LAYOUT: 4. SAVED: 9/28/2021 12:02 PM ACADVER: 24.05 (LMS TECH) PAGES: 4. PLOTSETUP: ---- PLOTSTYLETABLE: ----
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 XREFS: IMAGES: PROJECTNAME: GEN-X-BASEMAP.dwg



APPENDIX A

Site Background and History



**Chevron Environmental
Management Company**

Appendix A:

Site History and Background

Chevron-Branded Service Station 98557

415 Muldoon Road
Anchorage, Alaska
ADEC File No: 2100.26.006
HAZARD ID No: 23831

December 31, 2019

Appendix A: 98557 Site Description and Background

1 98557 SITE BACKGROUND AND HISTORY

1.1 Site Description and Vicinity

The Chevron-Branded Service Station 98557 (the site) is located at 415 Muldoon Road in Anchorage, Alaska. The Site is an active service station with four underground storage tanks (USTs) and six dispenser islands with product piping, and a station building. The surrounding land use is commercial and residential; the site is bordered by business to the north, south, and west and by residences to the east.

1.2 Site History

The Site was formerly operated as a small bulk fuel storage facility until 1965, when it was converted to a service station. In 1991, four USTs were excavated and replaced at the southern edge of the property. During the excavation, approximately 2,100 cubic yards (cy) of impacted soil was removed and thermally treated. In 2006, the existing USTs and station building were removed and replaced with the current facilities. Approximately 3,390 cy of impacted soil was removed and thermally treated or transported off site for disposal.

2 SITE CHARACTERIZATION

There are currently five groundwater monitoring wells located onsite (MW-1, MW-3, MW-13, MW-14, and RW-1).

3 CURRENT SITE MONITORING ACTIVITIES

Three monitoring wells (MW-1, MW-13, and MW-14) are monitored and sampled semiannually. Monitoring wells MW-3 and RW-1 are monitored for depth-to-water only during these sampling events.

In recent historic sampling, concentrations of diesel-range organics (DRO) have exceeded ADEC Groundwater Cleanup Levels in wells MW-1 and MW-13. Concentrations of lead have exceeded ADEC Cleanup Levels in MW-1, MW-13, and MW-14.

4 GEOLOGY AND HYDROGEOLOGY

4.1 Site Hydrogeology

The Site is in south central Alaska, between the Knik Arm of Cook Inlet to the north and the Turnagain Arm to the south. Static groundwater depths have historically ranged between 9.26 and 21.46 feet below top of casing (ft btoc). Historic groundwater flow is to the northwest.

5 REFERENCES

Alaska Department of Environmental Conservation. 2019. Site Report: Chevron #8557. Available online at: <https://dec.alaska.gov/Applications/SPAR/PublicMVC/CSP/SiteReport/23831>. Retrieved December 27, 2019.

GHD Inc. 2018. Second Semiannual 2018 Groundwater Monitoring Report: Chevron-Branded Service Station 98557, 415 Muldoon Rd, Anchorage, AK. November 12

APPENDIX B

Field Data Sheets



Daily Log

Project Name : 98557 **Weather(°F) :** Snow
Project Number : 30063668 **Prepared By:** Evan Wujcik
Purpose : Gw sampling
PPE : Level D
Equipment: Water Quality Meter (i.e. YSI), Water Level Meter (WLM), Bladder Pump, Photoionization Detector (PID)

Date	Time	Description of Activities
08/27/2021	08:00	Arrive on site Open permit to work Locate Wells
08/27/2021	09:00	Sample MW-1 Decon equipment Blind duplicate Samples collected at this location See chain of custody for analytes
08/27/2021	10:00	Sample MW-14 Decon equipment MS/MSD Samples collected at this location See chain of custody for analytes
08/27/2021	11:00	Could not gauge and sample MW13 due to continuous flooding. Oil sheen observed on surface water entering well area. Could not gauge MW3 due to continuous flooding.
08/27/2021	12:00	Load vehicle Close permit to work Mobilize offsite

Signature:



Waste Management:										
Drums On Site										
Date	Are there any waste drums on site?	Number of Drums upon Arrival	Size of Drums	Type of Drums	Condition of Drums	Waste Drummed Today?	Number of drums Created	Size of drums	Condition of Drums	General Waste Comments
08/27/2021	no					no				

Equipment and Calibration Information:

Supplier: Pine **Model:**
Rental Number: **Calibrated:**
Bump Checked: **Calibration Passed:**

Water Quality Meter SN:

Date	Time	Calibrated Fluid and Value	Lot #	Expiration Date	Initial Reading	Final Reading
------	------	----------------------------	-------	-----------------	-----------------	---------------

Daily Log

08/27/2021						
------------	--	--	--	--	--	--

Equipment and Calibration Information:

Supplier: Pine

Model:

Rental Number:

Calibrated:

**Bump
Checked:**

**Calibration
Passed:**

PIDSN:

Date	Time	Calibrated Fulid and Value	Lot #	Expiration Date	Initial Reading	Final Reading
08/27/2021	--					



Groundwater Gauging Log

Project Number	30063668						
Client:	Chevron						
Site ID:	98557						
Site Location:	Anchorage, Alaska						
Measuring Point:	Top of Casing						
Date(s):	08/27/2021						
Sampler(s):	Evan Wujcik						
Gauging Equipment:	Water Level Meter						
Well ID	Date	Gauging Time	Static Water Level (ft bmp)	Depth to Product (ft bmp)	Total Depth (ft bmp)	PID Reading (ppm)	Comments
MW-1	08/27/2021	08:52	17.62	ND	24.00	0	--
MW-3	08/27/2021	--	--	ND	--	--	Flooded. See photos
MW-13	08/27/2021	--	--	ND	--	--	Flooding with oil in surface water. See photos.
MW-14	08/27/2021	09:31	17.52	ND	27.10	0	--
RW-1	08/27/2021	09:27	18.24	ND	26.00	0	--

ft-bmp = feet below measuring point

ND = Not Detected

PID = Photoionization Detector Reading

ppm = parts per million

-- = Not Recorded

Project Number	30063668	Well ID	MW-1	Date	8/27/2021	
Site Location	Anchorage, Alaska	Site ID	98557	Weather (°F)	Clear	Sampled by Evan Wujcik
Measuring Point Description	Top of Casing	Screen Depth Interval (ft-bmp)	-- to --	Casing Diameter (in.)	4	Well Casing Material PVC
Static Water Level (ft-bmp)	17.62	Total Depth (ft-bmp)	24	Water Column (ft)	6.38	Gallons in Well 4.15
Water Quality Meter Make/Model	Horiba U-52	Purge Method	Low-Flow	Sample Method	Grab	
Sample Time	09:00	Well Volumes Purged	0.15	Sample ID	MW-1-W-20210827	Evacuation Equipment Bladder
Purge Start	08:30	Gallons Purged	0.63	Duplicate ID	BD-1-W-20210827	
Purge End	08:50	Total Purge Time (h:m)	0:20			

Time	Rate (ml/min)	Depth to Water (ft)	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
									Color	Odor
08:33	200	17.62	6.85	0.148	216	11.33	14.14	164	--	--
08:36	200	17.62	6.90	0.144	215	11.03	13.66	164	--	--
08:39	200	17.62	6.93	0.139	216	10.88	13.32	165	--	--
08:42	200	17.62	6.96	0.128	214	10.81	13.04	167	--	--

Comments: None

Well Casing Volume Conversion

Well diameter (in.) = 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Sample Information

Sample ID: MW-1-W-20210827 Sample Time: 09:00 Sample Depth (ft-bmp): 18
Analytes and Methods: See Chain-of-Custody.

ft-bmp = feet below measuring point
in. = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
PVC = Polyvinyl Chloride

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius
-- = Not Recorded

Project Number	30063668	Well ID	MW-14	Date	8/27/2021	
Site Location	Anchorage, Alaska	Site ID	98557	Weather (°F)	Clear	Sampled by Evan Wujcik
Measuring Point Description	Top of Casing	Screen Depth Interval (ft-bmp)	-- to --	Casing Diameter (in.)	2	Well Casing Material PVC
Static Water Level (ft-bmp)	17.52	Total Depth (ft-bmp)	27.1	Water Column (ft)	9.58	Gallons in Well 1.56
Water Quality Meter Make/Model	Horiba U-52	Purge Method	Low-Flow	Sample Method	Grab	
Sample Time	10:00	Well Volumes Purged	0.41	Sample ID	MW-14-W-20210827	Evacuation Equipment Bladder
Purge Start	09:30	Gallons Purged	0.63	Duplicate ID	MS/MSD	
Purge End	09:50	Total Purge Time (h:m)	0:20			

Time	Rate (ml/min)	Depth to Water (ft)	pH (standard units)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temperature (°C)	Redox (mV)	Appearance	
									Color	Odor
09:33	200	17.54	6.78	0.232	151	12.22	10.03	254	--	--
09:36	200	17.54	6.81	0.235	158	12.13	9.78	256	--	--
09:39	200	17.54	6.83	0.236	166	12.34	9.27	259	--	--
09:42	200	17.54	6.84	0.238	168	12.37	9.03	260	--	--

Comments: None

Well Casing Volume Conversion

Well diameter (in.) = 1 = 0.04 1.5 = 0.09 2.5 = 0.26 3.5 = 0.50 6 = 1.47
gallons per foot 1.25 = 0.06 2 = 0.16 3 = 0.37 4 = 0.65

Sample Information

Sample ID: MW-14-W-20210827 Sample Time: 10:00 Sample Depth (ft-bmp): 18
Analytes and Methods: See Chain-of-Custody.

ft-bmp = feet below measuring point
in. = inches
ft = feet
mL/min = milliliters per minute

mS/cm = milliSiemens per centimeter
NTU = Nephelometric Turbidity Unit
mg/L = milligrams per liter
PVC = Polyvinyl Chloride

mV = millivolts
°F = degrees Fahrenheit
°C = degrees Celsius
-- = Not Recorded

APPENDIX D

ADEC Data Review Checklist





Arcadis - Chevron - AK

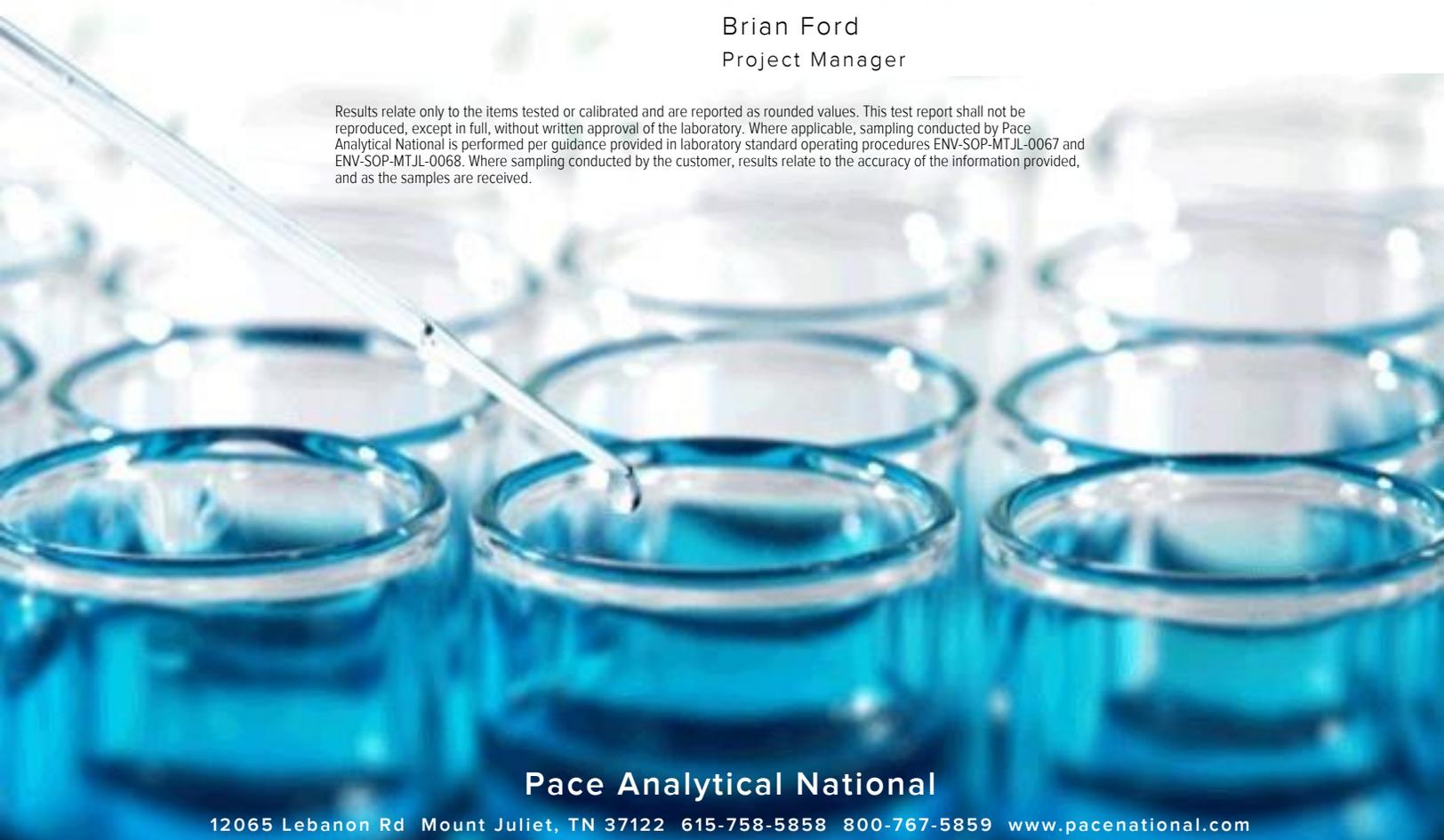
Sample Delivery Group: L1397157
Samples Received: 08/31/2021
Project Number: 30063668 19.21
Description: 98557
Site: 5210 OLD SEWARD HWY ANCHORAGE
Report To: Sydney Clark
880 H St.
Anchorage, AK 99501

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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SAMPLE SUMMARY

MW-1-W-20210827 L1397157-01 GW

Collected by: E. Wujcik
 Collected date/time: 08/27/21 09:00
 Received date/time: 08/31/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1733697	1	09/04/21 11:54	09/07/21 12:51	EL	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1735778	1	09/08/21 07:43	09/10/21 01:31	JAS	Mt. Juliet, TN



MW-14-W-20210827 L1397157-02 GW

Collected by: E. Wujcik
 Collected date/time: 08/27/21 10:00
 Received date/time: 08/31/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1733697	1	09/04/21 11:54	09/07/21 12:38	EL	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1735778	1	09/08/21 07:43	09/10/21 01:52	JAS	Mt. Juliet, TN

BD-1-W-20210827 L1397157-03 GW

Collected by: E. Wujcik
 Collected date/time: 08/27/21 00:00
 Received date/time: 08/31/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1733697	1	09/04/21 11:54	09/07/21 12:54	EL	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1735778	1	09/08/21 07:43	09/10/21 02:52	JAS	Mt. Juliet, TN

EQB-1-W-20210827 L1397157-04 GW

Collected by: E. Wujcik
 Collected date/time: 08/27/21 11:00
 Received date/time: 08/31/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1733697	1	09/04/21 11:54	09/07/21 12:56	EL	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method AK102	WG1735778	1	09/08/21 07:43	09/10/21 03:12	JAS	Mt. Juliet, TN

TRIP BLANK-W-20210827 L1397157-05 NONE

Collected by: E. Wujcik
 Collected date/time: 08/27/21 00:00
 Received date/time: 08/31/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location

CASE NARRATIVE

Unless qualified or notated within the narrative below, all sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

Semi-Volatile Organic Compounds (GC) by Method AK102

The same analyte is found in the associated blank.

Batch	Analyte	Lab Sample ID
WG1735778	AK102 DRO C10-C25	L1397157-01, 02, 03, 04

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead	7.40		2.99	6.00	1	09/07/2021 12:51	WG1733697

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	1550	<u>B</u>	229	800	1	09/10/2021 01:31	WG1735778
(S) o-Terphenyl	108			50.0-150		09/10/2021 01:31	WG1735778

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead	14.6		2.99	6.00	1	09/07/2021 12:38	WG1733697

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	712	B J	229	800	1	09/10/2021 01:52	WG1735778
(S) o-Terphenyl	101			50.0-150		09/10/2021 01:52	WG1735778

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead	7.69		2.99	6.00	1	09/07/2021 12:54	WG1733697

1 Cp

2 Tc

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	1380	<u>B</u>	229	800	1	09/10/2021 02:52	WG1735778
(S) o-Terphenyl	101			50.0-150		09/10/2021 02:52	WG1735778

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Lead	U		2.99	6.00	1	09/07/2021 12:56	WG1733697

Semi-Volatile Organic Compounds (GC) by Method AK102

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
AK102 DRO C10-C25	695	B J	229	800	1	09/10/2021 03:12	WG1735778
(S) o-Terphenyl	116			50.0-150		09/10/2021 03:12	WG1735778

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3701317-1 09/07/21 12:33

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Lead	U		2.99	6.00

1 Cp

2 Tc

3 Ss

Laboratory Control Sample (LCS)

(LCS) R3701317-2 09/07/21 12:35

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lead	1000	963	96.3	80.0-120	

4 Cn

5 Sr

L1397157-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1397157-02 09/07/21 12:38 • (MS) R3701317-4 09/07/21 12:43 • (MSD) R3701317-5 09/07/21 12:45

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lead	1000	14.6	974	991	95.9	97.6	1	75.0-125			1.69	20

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3702767-1 09/09/21 22:31

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
AK102 DRO C10-C25	581	⌵	229	800
(S) o-Terphenyl	93.9			60.0-120

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3702767-2 09/09/21 22:51 • (LCSD) R3702767-3 09/09/21 23:11

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
AK102 DRO C10-C25	6000	6570	6870	110	115	75.0-125			4.46	20
(S) o-Terphenyl				64.4	83.4	60.0-120				

L1397157-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1397157-02 09/10/21 01:52 • (MS) R3702767-4 09/10/21 02:12 • (MSD) R3702767-5 09/10/21 02:32

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
AK102 DRO C10-C25	6000	712	6510	6770	96.6	101	1	75.0-125			3.92	20
(S) o-Terphenyl					77.2	67.0		50.0-150				

L1397640-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1397640-03 09/10/21 03:32 • (MS) R3702767-6 09/10/21 03:52 • (MSD) R3702767-7 09/10/21 04:12

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
AK102 DRO C10-C25	6000	1170	7410	7460	104	105	1	75.0-125			0.672	20
(S) o-Terphenyl					73.0	75.3		50.0-150				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

GLOSSARY OF TERMS

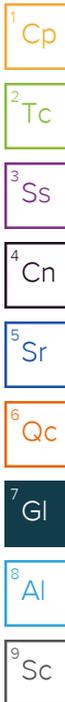
Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

880 H St.
Anchorage, AK 99501

630 Plaza Dr Ste 600
Highlands Ranch, CO 80129

Pres
Chk



12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubs/pas-standard-terms.pdf>

Report to: **Sydney Clark**

Email To: **Sydney.Clark@arcadis.com; Maxwell.Elias@arca**

Project Description: **98557**

City/State Collected: **Anchorage, AK**

Please Circle: **PT MT CT ET**

Phone: **907-276-8095**

Client Project # **30063668 19.21**

Lab Project # **CHEVARCAK-98557**

Collected by (print): **E. Wujcik**

Site/Facility ID # **5210 OLD SEWARD HWY**

P.O. #

Collected by (signature): *[Signature]*
Immediately
Packed on Ice N Y X

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day Standard

Quote #
Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
-----------	-----------	----------	-------	------	------	--------------

MW-1-W-20210827	Grab	GW	-	8.27.21	0900	3
MW-14-W-20210827	Grab	GW	-	8.27.21	1000	9
BD-1-W-20210827	Grab	GW	-	8.27.21	-	3
EQB-1-W-20210827	Grab	GW	-	8.27.21	1100	3
Trip Blank	-	GW	-	8.27.21	-	3
		GW				
		GW				
		GW				

AK102 100ml Amb HCl

Total Pb 6010 250ml HDPE-HNO3

SDG # **1397157**
J005

Acctnum: **CHEVARCAK**
Template: **T194076**
Prelogin: **P868890**
PM: **110 - Brian Ford**
PB:

Shipped Via:
Remarks | Sample # (lab only)

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:
pH _____ Temp _____
Flow _____ Other _____
Samples returned via:
 UPS FedEx Courier
Tracking # **5217 3307 2890**

Sample Receipt Checklist		
COC Seal Present/Intact:	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
COC Signed/Accurate:	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
Bottles arrive intact:	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
Correct bottles used:	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
Sufficient volume sent:	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
If Applicable		
VOA Zero HeadSpace:	<input type="checkbox"/> Y	<input type="checkbox"/> N
Preservation Correct/Checked:	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N
RAD Screen <0.5 mR/hr:	<input checked="" type="checkbox"/> Y	<input type="checkbox"/> N

Relinquished by: (Signature) *[Signature]*

Date: **8.30.21**

Time: **0800**

Received by: (Signature)

Trip Blank Received: Yes / No
HCL / MeOH
TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: **21.1 = 2.0 18**
Bottles Received:

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature) **T. Robertson**

Date: **8/31/21** Time: **1000**

Hold: Condition: **NCF / OK**

APPENDIX C

Laboratory Analytical Report



Laboratory Data Review Checklist

Completed By:

Bhagyashree A Fulzele

Title:

Project Chemist

Date:

September 21, 2021

Consultant Firm:

ARCADIS U.S., Inc

Laboratory Name:

Pace Analytical

Laboratory Report Number:

L1397157

Laboratory Report Date:

09/13/2021

CS Site Name:

Second Semi Annual 2021 Groundwater Monitoring Report

ADEC File Number:

2100.26.001

Hazard Identification Number:

23595

Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

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

Yes No N/A 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 N/A Comments:

No.

2. Chain of Custody (CoC)

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

Yes No N/A Comments:

Yes.

b. Correct analyses requested?

Yes No N/A Comments:

Yes.

3. Laboratory Sample Receipt Documentation

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

Yes No N/A Comments:

Yes.

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

Yes No N/A Comments:

Yes.

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

Yes No N/A Comments:

No.

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 N/A Comments:

No.

e. Data quality or usability affected?

Comments:

Data quality/usability was not affected.

4. Case Narrative

a. Present and understandable?

Yes No N/A Comments:

Yes.

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

Yes No N/A Comments:

Yes.

c. Were all corrective actions documented?

Yes No N/A Comments:

Yes.

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

Comments:

Data quality/usability was not affected.

5. Samples Results

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

Yes No N/A Comments:

Yes.

b. All applicable holding times met?

Yes No N/A Comments:

Yes.

c. All soils reported on a dry weight basis?

Yes No N/A Comments:

Not applicable.

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

Yes No N/A Comments:

Yes.

e. Data quality or usability affected?

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 N/A Comments:

Yes.

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes No N/A Comments:

No.

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

Method AK102: Compound AK102 DRO C10-C25 (581 J ug/L) was detected below the reporting limit in method blank batch WG1735778. A blank action level was established at five times of the reported blank concentration. Compound result in sample ID MW-14-W-20210827 was qualified as non-detect (UB) at the reporting limit and in sample IDs MW-1-W-20210827 and BD-1-W-20210827 was qualified as non-detect (UB) at sample detection.

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

Yes No N/A Comments:

Yes.

v. Data quality or usability affected?

Comments:

The method blank contamination considered as minor and would result in the non-detect of associated data. The reported data should still consider 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 N/A Comments:

Yes.

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

Yes No N/A Comments:

Yes.

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

Yes No N/A Comments:

Yes.

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

Yes No N/A Comments:

Yes.

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

Comments:

None of the samples were affected.

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

Yes No N/A Comments:

Not applicable.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality or usability was not affected.

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

Note: Leave blank if not required for project

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

Yes No N/A Comments:

The MS/MSD analysis was performed on sample ID MW-14-W-20210827 for Method 6010 and AK102.

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

The MS/MSD analysis was performed on sample MW-14-W-20210827.

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

Yes No N/A Comments:

Yes.

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

Yes No N/A Comments:

Yes.

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

Comments:

None of the samples were affected.

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

Yes No N/A Comments:

Not applicable.

- vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality or usability was not affected.

- d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

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

Yes No N/A Comments:

Yes.

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

Yes No N/A Comments:

Yes.

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

Yes No N/A Comments:

Not applicable.

- iv. Data quality or usability affected?

Comments:

Data quality or usability was not affected.

e. Trip Blanks

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

Yes No N/A Comments:

Trip blank sample was not collected from this SDG.

- ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC?
(If not, a comment explaining why must be entered below)

Yes No N/A Comments:

Not applicable.

- iii. All results less than LOQ and project specified objectives?

Yes No N/A Comments:

Not applicable.

- iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

None of the samples were affected.

- v. Data quality or usability affected?

Comments:

Data quality or usability was not affected.

f. Field Duplicate

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

Yes No N/A Comments:

Yes.

- ii. Submitted blind to lab?

Yes No N/A Comments:

Field duplicate BD-1-W-20210827 was collected from sample MW-1-W-20210827.

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

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

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

Yes No N/A Comments:

Yes.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

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 N/A Comments:

Equipment blank sample was collected as EQB-1-W-20210827.

i. All results less than LOQ and project specified objectives?

Yes No N/A Comments:

Yes.

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

Method AK102: Compound AK102 DRO C10-C25 (695 J ug/L) was detected below the reporting limit in EQB-1-W-20210827. A blank action level was established at five times of the reported blank concentration. Compound result in sample IDs MW-1-W-20210827 and BD-1-W-20210827 were qualified as non-detect (UB) at the sample detection limit and sample ID MW-14-W-20210827 was qualified as non-detect (UB) at reporting limit.

iii. Data quality or usability affected?

Comments:

Equipment blank contamination is considered minor and would result in the non-detect of the associated data. The reported data should still consider as usable.

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

a. Defined and appropriate?

Yes No N/A Comments:

Yes.

APPENDIX E

Additional Historical Groundwater Gauging and Analytical Data



Appendix E.1. Current Groundwater Analytical Results - PAHs
 Chevron Service Station 9-8557
 415 Muldoon Road,
 Anchorage, Alaska

Well ID	Sample Date	1-Methylnaphthalene	2-Methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)Fluoranthene	Benzo(g,h,i)perylene	Benzo(k)Fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Comments
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
ADEC Groundwater Cleanup Levels		6.2	6.1	2,200	2,200	11,000	1.2	0.2	1.2	1,100	12	120	0.12	1,500	1,500	1.2	730	11,000	1,100	
MW-1	4/3/2020	<0.500	<0.500	<0.0500	<0.0500	<0.0500	0.0309 J	<0.0500	<0.0500	0.0251 J	<0.250	<0.0500	<0.0500	0.0286 J	<0.0500	<0.0500	<0.500	0.0457 J	0.0351 J	
MW-1	9/30/2020	0.0226 J [-0.500]	<0.500 [-0.500]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	0.0185 J [-0.0500]	<0.250 [-0.250]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	1.000500 [-0.000500]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	<0.0500 [-0.0500 B]
MW-13	4/3/2020	1.12	0.0544 J	0.0609	<0.0500	0.0358 J	0.0576	0.0182 J	0.0185 J	0.0664	<0.250	0.0382 J	<0.0500	0.0601	0.0825	<0.0500	0.379 J	0.165	0.177	
MW-13	10/1/2020	0.472 J [0.524]	<0.500 [-0.500]	0.0276 J [0.0296 J]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	0.0289 J [0.0362 J]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	<0.250 [-0.250]	0.0265 J [0.0278 J]	<0.0500 [-0.0500]	0.0355 J [0.0458 J]	0.0310 J [0.0354 J]	<0.0500 [-0.0500]	<0.500 [-0.500]	0.0593 [0.0736]	0.0756 [0.0863]	
MW-14	4/3/2020	<0.500 [-0.500]	<0.500 [-0.500]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	<0.250 [-0.250]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	<0.500 [-0.500]	<0.0500 [-0.0500]	<0.0500 [-0.0500]	
MW-14	9/30/2020	<0.500	<0.500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.250	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.000500	<0.0500 B	<0.0500 B	
QA (EQB)	4/3/2020	<0.500	<0.500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.250	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.500	<0.0500	<0.0500	
QA (EQB)	9/30/2020	<0.500	0.0298 J	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.0222 J	<0.0500	<0.250	<0.0500	<0.0500	0.068	<0.0500	<0.0500	<0.000500	0.0363 J	0.0000668	
Trip Blank	9/30/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

Notes:
 ADEC GCL = Alaska Department of Environmental Conservation groundwater cleanup level
 (µg/L) = micrograms per liter
 LNAPL = Light Non-aqueous Phase Liquids
 <0.500 = Not detected at or above the reported detection limit (RDL)
Bold = Detections above the MDL
Bold and italicized : Constituent considered non-detect, however Laboratory RDL is greater than the ADEC Groundwater Cleanup Level
 J = The compound was positively identified; however, the associated numerical value is an estimated concentration only.
 B = Compound considered non-detect at the listed value due to associated blank contamination.
 Constituents analyzed by United States Environmental Protection Agency Method EPA 8270E-SIM
 [] = Duplicate Result

Appendix E.2a. Historical Groundwater Analytical Results - Additional VOCs
First Quarter 2020 to Current
Chevron Service Station 9-8557
415 Muldoon Road,
Anchorage, Alaska

Well ID	Sample Date	Acetone (µg/L)	1,2,4-Trimethylbenzene (µg/L)	1,2-Dichlorobenzene (o-Dichlorobenzene) (µg/L)	1,4-Dichlorobenzene (µg/L)	cis-1,2-Dichloroethene (µg/L)	Isopropylbenzene (µg/L)	1,1,2,2-Tetrachloroethane (µg/L)	1,1,2-Trichloroethane (µg/L)	Chloroform (µg/L)	Vinyl chloride (Chloroethene) (µg/L)	4-Methyl-2-pentanone (µg/L)	1,1,1-Trichloroethane (µg/L)	Comments
ADEC Groundwater Cleanup Levels		14,000	56	300	4.8	36	--	0.76	0.41	2.2	0.19	6,300	8,000	
MW-1	4/3/2020	14.1 J	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<10.0	<1.00	
MW-1	9/30/2020	<50.0 [<i><50.0</i>]	<1.00 [<i><1.00</i>]	<1.00 [<i><1.00</i>]	<1.00 [<i><1.00</i>]	<1.00 [<i><1.00</i>]	<1.00 [<i><1.00</i>]	<1.00 [<i><1.00</i>]	<1.00 [<i><1.00</i>]	<5.00 [<i><5.00</i>]	<1.00 [<i><1.00</i>]	0.603 J [0.606 J]	<1.00 [<i><1.00</i>]	
MW-13	4/3/2020	<50.0	7.77	0.482 J	0.340 J	0.326 J	1.15	<1.00	<1.00	<5.00	<1.00	<10.0	<1.00	
MW-13	10/1/2020	<50.0 [<i><50.0</i>]	1.03 [0.971 J]	0.275 J [0.267 J]	<1.00 [<i><1.00</i>]	0.164 J [0.164 J]	0.806 J [0.705 J]	<1.00 [<i><1.00</i>]	<1.00 [<i><1.00</i>]	<5.00 [<i><5.00</i>]	<1.00 [<i><1.00</i>]	<10.0 [<i><10.0</i>]	<1.00 [<i><1.00</i>]	
MW-14	4/3/2020	<50.0 [<i><50.0</i>]	<1.00 [<i><1.00</i>]	<1.00 [<i><1.00</i>]	<1.00 [<i><1.00</i>]	<1.00 [<i><1.00</i>]	<1.00 [<i><1.00</i>]	<1.00 [<i><1.00</i>]	<1.00 [<i><1.00</i>]	<5.00 B [<i><5.00 B</i>]	<1.00 [<i><1.00</i>]	<10.0 [<i><10.0</i>]	<1.00 [<i><1.00</i>]	
MW-14	9/30/2020	<50.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	0.772 J	<1.00	<0.0100	<1.00	
QA (EQB)	4/3/2020	<50.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	0.428 J	<1.00	<10.0	<1.00	
QA (EQB)	9/30/2020	<50.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<0.0100	<1.00	
TRIP BLANK	4/3/2020	<50.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<10.0	<1.00	
TRIP BLANK	9/30/2020	<50.0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<0.0100	<1.00	

Notes:
ID = Identification
MW = Groundwater monitoring well
µg/L = Milligrams per liter
<1.00 = Not detected at or above the Reported Detection Limit
Bold = Detected above laboratory method detection limit (MDL)
Bold and *italicized* : Constituent considered non-detect, however Laboratory RDL is greater than the ADEC Groundwater Cleanup Level
J = The compound was positively identified; however, the associated numerical value is an estimated concentration only.
[] = Blind Duplicate Sample Result
ADEC = Alaska Department of Environmental Conservation
Constituents analyzed by United States Environmental Protection Agency Method 8260D

Appendix E.2b. Historical Groundwater Analytical Results - Additional VOCs

First Quarter 2020 to Current

Chevron Service Station 9-8557

415 Muldoon Road,

Anchorage, Alaska

Well ID	Sample Date	1,1,2-Trichlorotrifluoroethane (Freon 113) µg/L	1,1-Dichloroethane µg/L	1,1 Dichloroethene µg/L	1,2,3-Trichlorobenzene µg/L	1,2,4-Trichlorobenzene µg/L	1,2-Dibromoethane µg/L	1,2-Dichloroethane µg/L	1,2-Dichloropropane µg/L	1,3-Dichlorobenzene µg/L	2-Butanone (Methyl ethyl ketone) µg/L	Bromochloromethane µg/L	Bromodichloromethane µg/L	Comments
ADEC Groundwater Cleanup Levels		10,000	28	280	7.0	4.0	0.075	1.7	8	4.7	--	--	1.3	
MW-1	4/3/2020	<1.00	<1.00	<1.00	<1.00 J	<1.00	<0.00500	<1.00	<1.00	<1.00	<10.0	<5.00	<1.00	
MW-1	9/30/2020	<1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><0.005 [<lt;0.005]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.00 [<lt;10.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;1.00]<></td></lt;10.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;0.005]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<>	<1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><0.005 [<lt;0.005]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.00 [<lt;10.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;1.00]<></td></lt;10.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;0.005]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<>	<1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><0.005 [<lt;0.005]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.00 [<lt;10.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;1.00]<></td></lt;10.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;0.005]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<>	<1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><0.005 [<lt;0.005]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.00 [<lt;10.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;1.00]<></td></lt;10.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;0.005]<></td></lt;1.00]<></td></lt;1.00]<>	<1.00 [<lt;1.00]< td=""> <td><0.005 [<lt;0.005]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.00 [<lt;10.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;1.00]<></td></lt;10.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;0.005]<></td></lt;1.00]<>	<0.005 [<lt;0.005]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.00 [<lt;10.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;1.00]<></td></lt;10.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;0.005]<>	<1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.00 [<lt;10.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;1.00]<></td></lt;10.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<>	<1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.00 [<lt;10.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;1.00]<></td></lt;10.00]<></td></lt;1.00]<></td></lt;1.00]<>	<1.00 [<lt;1.00]< td=""> <td><10.00 [<lt;10.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;1.00]<></td></lt;10.00]<></td></lt;1.00]<>	<10.00 [<lt;10.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;1.00]<></td></lt;10.00]<>	<1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;1.00]<>	<1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<>	
MW-13	4/3/2020	<1.00	<1.00	<1.00	<1.00	<1.00	<0.00500	<1.00	<1.00	<1.00	<10.0	<5.00	<1.00	
MW-13	10/1/2020	<1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><0.0500 [<lt;0.00500]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.0 [<lt;10.0]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;1.00]<></td></lt;10.0]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;0.00500]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<>	<1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><0.0500 [<lt;0.00500]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.0 [<lt;10.0]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;1.00]<></td></lt;10.0]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;0.00500]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<>	<1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><0.0500 [<lt;0.00500]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.0 [<lt;10.0]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;1.00]<></td></lt;10.0]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;0.00500]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<>	<1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><0.0500 [<lt;0.00500]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.0 [<lt;10.0]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;1.00]<></td></lt;10.0]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;0.00500]<></td></lt;1.00]<></td></lt;1.00]<>	<1.00 [<lt;1.00]< td=""> <td><0.0500 [<lt;0.00500]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.0 [<lt;10.0]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;1.00]<></td></lt;10.0]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;0.00500]<></td></lt;1.00]<>	<0.0500 [<lt;0.00500]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.0 [<lt;10.0]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;1.00]<></td></lt;10.0]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;0.00500]<>	<1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.0 [<lt;10.0]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;1.00]<></td></lt;10.0]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<>	<1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.0 [<lt;10.0]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;1.00]<></td></lt;10.0]<></td></lt;1.00]<></td></lt;1.00]<>	<1.00 [<lt;1.00]< td=""> <td><10.0 [<lt;10.0]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;1.00]<></td></lt;10.0]<></td></lt;1.00]<>	<10.0 [<lt;10.0]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;1.00]<></td></lt;10.0]<>	<1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;1.00]<>	<1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<>	
MW-14	4/3/2020	<1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><0.00500 [<lt;0.00500]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.0 [<lt;10.0]< td=""> <td><5.00 [<lt;5.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;5.00]<></td></lt;10.0]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;0.00500]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<>	<1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><0.00500 [<lt;0.00500]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.0 [<lt;10.0]< td=""> <td><5.00 [<lt;5.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;5.00]<></td></lt;10.0]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;0.00500]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<>	<1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><0.00500 [<lt;0.00500]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.0 [<lt;10.0]< td=""> <td><5.00 [<lt;5.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;5.00]<></td></lt;10.0]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;0.00500]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<>	<1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><0.00500 [<lt;0.00500]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.0 [<lt;10.0]< td=""> <td><5.00 [<lt;5.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;5.00]<></td></lt;10.0]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;0.00500]<></td></lt;1.00]<></td></lt;1.00]<>	<1.00 [<lt;1.00]< td=""> <td><0.00500 [<lt;0.00500]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.0 [<lt;10.0]< td=""> <td><5.00 [<lt;5.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;5.00]<></td></lt;10.0]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;0.00500]<></td></lt;1.00]<>	<0.00500 [<lt;0.00500]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.0 [<lt;10.0]< td=""> <td><5.00 [<lt;5.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;5.00]<></td></lt;10.0]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;0.00500]<>	<1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.0 [<lt;10.0]< td=""> <td><5.00 [<lt;5.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;5.00]<></td></lt;10.0]<></td></lt;1.00]<></td></lt;1.00]<></td></lt;1.00]<>	<1.00 [<lt;1.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td><10.0 [<lt;10.0]< td=""> <td><5.00 [<lt;5.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;5.00]<></td></lt;10.0]<></td></lt;1.00]<></td></lt;1.00]<>	<1.00 [<lt;1.00]< td=""> <td><10.0 [<lt;10.0]< td=""> <td><5.00 [<lt;5.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;5.00]<></td></lt;10.0]<></td></lt;1.00]<>	<10.0 [<lt;10.0]< td=""> <td><5.00 [<lt;5.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;5.00]<></td></lt;10.0]<>	<5.00 [<lt;5.00]< td=""> <td><1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<></td></lt;5.00]<>	<1.00 [<lt;1.00]< td=""> <td></td> </lt;1.00]<>	
MW-14	9/30/2020	<1.00	<1.00	<1.00	<1.00	<1.00	<0.005	<1.00	<1.00	<1.00	<10.00	<1.00	<1.00	
QA (EQB)	4/3/2020	<1.00	<1.00	<1.00	<1.00	<1.00	<0.00500	<1.00	<1.00	<1.00	<10.0	<5.00	<1.00	
QA (EQB)	9/30/2020	<1.00	<1.00	<1.00	<1.00	<1.00	<0.005	<1.00	<1.00	<1.00	<10.00	<1.00	<1.00	
TRIP BLANK	4/3/2020	<1.00	<1.00	<1.00	<1.00	<1.00	<0.00500	<1.00	<1.00	<1.00	<10.0	<5.00	<1.00	
TRIP BLANK	9/30/2020	<1.00	<1.00	<1.00	<1.00	<1.00	<0.005	<1.00	<1.00	<1.00	<10.00	<1.00	<1.00	

Notes:

ID = Identification

MW = Groundwater monitoring well

µg/L = Milligrams per liter

<1.00 = Not detected at or above the Reported Detection Limit

Bold = Detected above laboratory method detection limit (MDL)

[] = Blind Duplicate Sample Result

ADEC = Alaska Department of Environmental Conservation

Constituents analyzed by United States Environmental Protection Agency Method 8260D

Appendix E.2c. Historical Groundwater Analytical Results - Additional VOCs

First Quarter 2020 to Current

Chevron Service Station 9-8557

415 Muldoon Road,

Anchorage, Alaska

Well ID	Sample Date	Bromoform µg/L	Bromomethane (Methyl bromide) µg/L	Carbon disulfide µg/L	Carbon Tetrachloride µg/L	Chlorobenzene µg/L	Chloroethane µg/L	Chloromethane (Methyl chloride) µg/L	cis-1,3-Dichloropropene µg/L	Dibromochloromethane µg/L	Dichlorodifluoromethane (Freon 12) µg/L	Methylene chloride (Dichloromethane) µg/L	Styrene µg/L	Comments
ADEC Groundwater Cleanup Levels		33	7.5	810	4.6	78	--	190	4.7	8.7	200	100	1,200	
MW-1	4/3/2020	<1.00	<5.00	<1.00	<1.00	<1.00	<5.00	<2.50	<1.00	<1.00	<5.00	<5.00	<1.00	
MW-1	9/30/2020	<1.00 [<1.00]	<5.00 [<5.00]	<1.00 [<1.00]	<1.00 [<1.00]	<1.00 [<1.00]	<5.00 [<5.00]	<2.50 [<2.50]	<1.00 [<1.00]	<1.00 [<1.00]	<5.00 [<5.00]	<5.00 [<5.00]	<1.00 [<1.00]	
MW-13	4/3/2020	<1.00	<5.00	<1.00	<1.00	<1.00	<5.00	<2.50	<1.00	<1.00	<5.00	<5.00	<1.00	
MW-13	10/1/2020	<1.00 [<1.00]	<5.00 [<5.00]	<1.00 [<1.00]	<1.00 [<1.00]	<1.00 [<1.00]	<5.00 [<5.00]	<2.50 [<2.50]	<1.00 [<1.00]	<1.00 [<1.00]	<5.00 [<5.00]	<5.00 [<5.00]	<1.00 [<1.00]	
MW-14	4/3/2020	<1.00 [<1.00]	<5.00 [<5.00]	<1.00 [<1.00]	<1.00 [<1.00]	<1.00 [<1.00]	<5.00 [<5.00]	<2.50 [<2.50]	<1.00 [<1.00]	<1.00 [<1.00]	<5.00 [<5.00]	<5.00 [<5.00]	<1.00 [<1.00]	
MW-14	9/30/2020	<1.00	<5.00	<1.00	<1.00	<1.00	<5.00	<2.50	<1.00	<1.00	<5.00	<5.00	<1.00	
QA (EQB)	4/3/2020	<1.00	<5.00	<1.00	<1.00	<1.00	<5.00	<2.50	<1.00	<1.00	<5.00	<5.00	<1.00	
QA (EQB)	9/30/2020	<1.00	<5.00	<1.00	<1.00	<1.00	<5.00	<2.50	<1.00	<1.00	<5.00	<5.00	<1.00	
TRIP BLANK	4/3/2020	<1.00	<5.00	<1.00	<1.00	<1.00	<5.00	<2.50	<1.00	<1.00	<5.00	<5.00	<1.00	
TRIP BLANK	9/30/2020	<1.00	<5.00	<1.00	<1.00	<1.00	<5.00	<2.50	<1.00	<1.00	<5.00	<5.00	<1.00	

Notes:

ID = Identification

MW = Groundwater monitoring well

µg/L = Milligrams per liter

<1.00 = Not detected at or above the Reported Detection Limit

Bold = Detected above laboratory method detection limit (MDL)

[] = Blind Duplicate Sample Result

ADEC = Alaska Department of Environmental Conservation

Constituents analyzed by United States Environmental Protection Agency Method 8260D

Appendix E.2d. Historical Groundwater Analytical Results - Additional VOCs

First Quarter 2020 to Current

Chevron Service Station 9-8557
415 Muldoon Road,
Anchorage, Alaska

Well ID	Sample Date	Tetrachloroethene µg/L	trans-1,2-Dichloroethene µg/L	trans-1,3-Dichloropropene µg/L	Trichloroethene (Trichloroethylene) µg/L	Trichlorofluoromethane (Freon 11) µg/L	Comments
ADEC Groundwater Cleanup Levels		41	360	4.7	2.8	5,200	
MW-1	4/3/2020	<1.00	<1.00	<1.00	<1.00	<5.00	
MW-1	9/30/2020	<1.00 [<1.00]	<1.00 [<1.00]	<1.00 [<1.00]	<1.00 [<1.00]	<5.00 [<5.00]	
MW-13	4/3/2020	<1.00	<1.00	<1.00	<1.00	<5.00	
MW-13	10/1/2020	<1.00 [<1.00]	<1.00 [<1.00]	<1.00 [<1.00]	<1.00 [<1.00]	<5.00 [<5.00]	
MW-14	4/3/2020	<1.00 [<1.00]	<1.00 [<1.00]	<1.00 [<1.00]	<1.00 [<1.00]	<5.00 [<5.00]	
MW-14	9/30/2020	<1.00	<1.00	<1.00	<1.00	<5.00	
QA (EQB)	4/3/2020	<1.00	<1.00	<1.00	<1.00	<5.00	
QA (EQB)	9/30/2020	<1.00	<1.00	<1.00	<1.00	<5.00	
TRIP BLANK	4/3/2020	<1.00	<1.00	<1.00	<1.00	<5.00	
TRIP BLANK	9/30/2020	<1.00	<1.00	<1.00	<1.00	<5.00	

Notes:

ID = Identification

MW = Groundwater monitoring well

µg/L = Milligrams per liter

<1.00 = Not detected at or above the Reported Detection Limit

Bold = Detected above laboratory method detection limit (MDL)

[] = Blind Duplicate Sample Result

ADEC = Alaska Department of Environmental Conservation

Constituents analyzed by United States Environmental Protection Agency Method 8260D

Table 2
Historical Groundwater Analytical Results
Chevron-Branded Service Station 98557
415 Muldoon Road
Anchorage, Alaska

Location	Date	TOC	DTW	GWE	HYDROCARBONS			PRIMARY VOCS				ADDITIONAL VOCS		Metals	
					TPH	DRO	GRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	HVOC	SVOC	Lead
	Units	ft msl	ft btoc	ft msl	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ADEC Groundwater Cleanup Levels					1.1	1.5	2.2	0.0046	1.1	0.015	0.19	0.14			0.015
MW-1	02/01/1991**	98.73	9.26	89.47	14	ND	-	0.001	ND	ND	0.003	-	-	-	-
MW-1	06/01/1991**	98.73	18.86	79.87	15	7.5	0.12	ND	ND	ND	ND	-	0.002	-	-
MW-1	07/01/1991**	98.73	19.00	79.73	-	-	-	-	-	-	-	-	-	-	-
MW-1	09/01/1991**	98.73	18.65	80.08	14	26	0.6	0.005	0.001	ND	0.024	-	-	-	-
MW-1	11/01/1991**	98.73	18.39	80.34	-	-	-	-	-	-	-	-	-	-	-
MW-1	12/01/1991**	98.73	19.13	79.60	9.6	4.7	0.18	ND	ND	ND	0.005	-	-	-	-
MW-1	01/01/1992**	98.73	18.52	80.21	-	-	-	-	-	-	-	-	-	-	-
MW-1	03/01/1992**	98.73	19.65	79.08	2.9	6.8	0.18	0.006	0.01	ND	0.022	-	-	-	-
MW-1	04/01/1992**	98.73	18.12	80.61	-	-	-	-	-	-	-	-	-	-	-
MW-1	05/01/1992**	98.73	18.58	80.15	-	-	-	-	-	-	-	-	-	-	-
MW-1	06/01/1992**	98.73	18.82	79.91	8.6	5	ND	ND	0.005	ND	ND	-	-	-	-
MW-1	07/01/1992**	98.73	18.32	80.41	-	-	-	-	-	-	-	-	-	-	-
MW-1	08/01/1992**	98.73	18.21	80.52	-	-	-	-	-	-	-	-	-	-	-
MW-1	09/01/1992**	98.73	18.19	80.54	-	ND	ND	ND	ND	ND	0.001	-	-	-	-
MW-1	10/01/1992**	98.73	18.50	80.23	-	-	-	-	-	-	-	-	-	-	-
MW-1	11/01/1992**	98.73	18.44	80.29	-	-	-	-	-	-	-	-	-	-	-
MW-1	12/01/1992**	98.73	18.31	80.42	3.4	8.7	ND	ND	ND	ND	0.004	-	-	-	-
MW-1	05/01/1993**	98.73	18.90	79.83	ND	ND	0.11	ND	ND	ND	0.001	-	-	-	-
MW-1	08/01/1993**	98.73	18.47	80.26	ND	0.16	0.095	ND	ND	ND	ND	-	-	-	-
MW-1	11/01/1993**	98.73	18.57	80.16	-	0.4	0.065	ND	ND	ND	0.002	-	0.004	-	-
MW-1	03/01/1994**	98.73	19.04	79.69	-	0.24	0.07	-	-	-	-	-	ND	-	-
MW-1	06/01/1994**	98.73	18.78	79.95	-	0.4	0.13	-	-	-	-	-	ND	-	-
MW-1	08/18/1994	98.73	18.52	80.21	-	0.38	0.11	-	-	-	-	-	0.0007	-	-
MW-1	12/13/1994	98.73	19.16	79.57	ND	ND	ND	ND	ND	ND	ND	-	ND	-	-
MW-1	03/24/1995	98.73	19.74	78.99	-	1.1	ND	ND	ND	ND	ND	-	ND	-	-
MW-1	04/24/1995	98.73	-	-	-	-	0.099	ND	ND	ND	0.0012	-	-	-	-
MW-1	06/19/1995	98.73	18.21	80.52	-	1.5	0.11	-	-	-	-	-	ND	-	-
MW-1	09/06/1995	98.73	18.09	80.64	-	2	0.084	ND	ND	ND	ND	-	0.0026	-	-
MW-1	11/14/1995	98.73	18.43	80.30	-	4.5	0.1	-	-	-	-	-	ND	-	-
MW-1	02/14/1996	98.73	19.18	79.55	-	1.5	0.11	-	-	-	-	-	ND	-	-
MW-1	06/01/1996	98.73	20.68	78.05	-	8.09	-	-	-	-	-	-	<0.0005 / <0.005	-	-
MW-1	08/23/1996	98.73	20.96	77.77	-	0.59 / 0.96	-	-	-	-	-	-	<0.0005 / <0.001 / <0.0005 / <0.001	-	-
MW-1	10/21/1996	98.73	20.97	77.76	-	1.79 / 2.61	-	-	-	-	-	-	<0.0005 / <0.005 / <0.0005 / <0.005	-	-
MW-1	04/27/1997	98.73	21.25	77.48	-	0.73 / 2.88	-	-	-	-	-	-	<0.001 / <0.005 / <0.001 / <0.005	-	-
MW-1	09/08/1997	98.73	19.45	79.28	-	1.74	-	-	-	-	-	-	<0.001 / <0.005	-	-
MW-1	04/22/1998	98.73	19.25	79.48	-	0.496	-	-	-	-	-	-	<0.001 / <0.01	-	-
MW-1	09/17/1998	98.73	19.00	79.73	-	0.139	-	-	-	-	-	-	<0.001 / <0.005	-	-
MW-1	04/26/1999	98.73	19.11	79.62	-	0.45	-	-	-	-	-	-	<0.0005 / <0.002	-	-
MW-1	10/13/1999	98.73	19.28	79.45	-	<0.1	-	-	-	-	-	-	<0.001 / <0.01	-	-
MW-1	05/17/2000	98.73	19.16	79.57	-	0.157	-	-	-	-	-	-	<0.0005 / <0.005	-	-
MW-1	09/22/2000	98.73	18.64	80.09	-	<0.1	-	-	-	-	-	-	<0.001 / <0.005	-	-
MW-1	05/01/2001	98.73	19.48	79.25	-	0.149	-	-	-	-	-	-	<0.001 / <0.005	-	-
MW-1	09/25/2001	98.73	18.99	79.74	-	0.339	-	-	-	-	-	-	<0.001 / <0.005	-	-
MW-1	05/02/2002	98.73	19.40	79.33	-	-	-	-	-	-	-	-	<0.001 / <0.005	-	-
MW-1	09/27/2002	98.73	18.60	80.13	-	0.42	-	-	-	-	-	-	<0.001 / <0.005	-	-
MW-1	05/23/2003	98.73	19.00	79.73	-	0.55	-	-	-	-	-	-	<0.0005 / <0.002	-	-
MW-1	10/08/2003	98.73	19.38	79.35	-	0.28	-	-	-	-	-	-	<0.0005 / <0.002	-	-
MW-1	06/04/2004	98.73	19.61	79.12	-	1.9	-	-	-	-	-	-	<0.0005 / <0.002	-	-
MW-1	09/28/2004	98.73	19.50	79.23	-	0.74 / 0.67	-	-	-	-	-	-	<0.0005 / <0.002 / <0.0005 / <0.002	-	-

Table 2

**Historical Groundwater Analytical Results
Chevron-Branded Service Station 98557
415 Muldoon Road
Anchorage, Alaska**

Location	Date	TOC	DTW	GWE	HYDROCARBONS			PRIMARY VOCS				ADDITIONAL VOCS		Metals	
					TPH	DRO	GRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	HVOC	SVOC	Lead
					mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
ADEC Groundwater Cleanup Levels					1.1	1.5	2.2	0.0046	1.1	0.015	0.19	0.14			0.015
MW-1	05/13/2005	98.73	18.54	80.19	-	0.83	-	-	-	-	-	-	<0.0005 / <0.002	-	-
MW-1	09/26/2005	98.73	18.67	80.06	-	<0.024	-	-	-	-	-	-	<0.0005 / <0.002	-	-
MW-1	05/17/2006	98.73	19.54	79.19	-	0.14	-	-	-	-	-	-	<0.0008 / <0.002	-	-
MW-1	09/25/2006	98.73	18.76	79.97	-	8.5	-	-	-	-	-	-	<0.0008 / <0.002	-	-
MW-1	05/15/2007	98.73	18.91	79.82	-	0.5	-	-	-	-	-	-	<0.0008 / <0.002	<0.001 / <0.021	-
MW-1	09/24/2007	98.73	18.40	80.33	-	3.5	-	-	-	-	-	-	<0.0008 / <0.002	<0.001 / <0.019	-
MW-1	05/14/2008	98.73	18.37	80.36	-	0.35	-	-	-	-	-	-	<0.0008 / <0.002	<0.001 / <0.019	-
MW-1	09/16/2008	98.73	18.02	80.71	-	1.6	-	-	-	-	-	-	<0.0001 / <0.0003	<0.001 / <0.0002	-
MW-1	06/18/2009	98.73	18.53	80.20	-	0.27	-	-	-	-	-	-	ND	ND	-
MW-1	09/07/2009	98.73	18.76	79.97	-	2.5	-	-	-	-	-	-	ND	0.012	-
MW-1	04/21/2010	98.73	19.46	79.27	-	1.5	-	<0.0005	<0.0005	<0.0005	<0.0005	-	ND	0.21	-
MW-1	07/22/2010	98.73	19.08	79.65	-	1.4	-	-	-	-	-	-	ND	ND	-
MW-1	04/19/2011	98.73	19.35	79.38	-	1.6	-	-	-	-	-	-	ND	0.040 J	-
MW-1	08/22/2011	252.78	19.09	233.69	-	0.17 J	-	-	-	-	-	-	ND	ND	<0.0047 UJ
MW-1	05/22/2012	252.78	18.22	234.56	-	0.20 J	-	-	-	-	-	-	ND	ND	<0.0022
MW-1	07/30/2012	252.78	17.55	235.23	-	0.10 J	-	-	-	-	-	-	ND	ND	0.0071 J
MW-1	05/14/2013	252.78	17.90	234.88	-	0.62	-	-	-	-	-	-	-	-	<0.0019
MW-1 ^{HS}	05/14/2013	252.78	17.90	234.88	-	1.6	-	-	-	-	-	-	-	-	<0.0019
MW-1	09/17/2013	252.78	17.57	235.21	-	-	-	-	-	-	-	-	-	-	-
MW-1	09/18/2013	-	-	-	-	0.38 J	-	-	-	-	-	-	-	-	0.0096 J
MW-1	05/02/2014	252.78	19.95	232.83	-	0.13 J	-	-	-	-	-	-	-	-	0.0010
MW-1	11/08/2014	252.78	18.48	234.10	-	0.26 J	-	-	-	-	-	-	-	-	0.0077 J
MW-1	05/06/2015	252.78	19.12	233.66	-	0.37 J	-	-	-	-	-	-	-	-	<0.0047
MW-1	10/21/2015	252.78	18.68	234.10	-	0.35	-	-	-	-	-	-	-	-	0.0260
MW-1	06/03/2016	252.78	18.69	234.09	-	3.7	-	-	-	-	-	-	-	-	0.0293 J
MW-1	10/14/2016	252.78	18.57	234.21	-	2.4	-	-	-	-	-	-	-	-	0.0137 J
MW-1	05/23/2017	252.78	18.29	234.49	-	3.5	-	-	-	-	-	-	-	-	0.0983
MW-1	09/01/2017	252.78	18.85	233.93	-	0.80 J / 0.52 J	-	-	-	-	-	-	-	-	0.0103 J / 0.0151 J
MW-1	05/21/2018	252.78	19.10	233.68	-	1.9 J / 1.5 J	-	-	-	-	-	-	-	-	0.0484
MW-1	09/25/2018	252.58*	19.02	233.76	-	1.0	-	-	-	-	-	-	-	-	0.0241
MW-3	02/01/1991**	98.52	19.21	79.31	7.9	ND	-	ND	ND	ND	ND	-	-	-	-
MW-3	06/01/1991**	98.52	19.10	79.42	ND	ND	ND	ND	ND	ND	ND	-	-	-	-
MW-3	07/01/1991**	98.52	19.19	79.33	-	-	-	-	-	-	-	-	-	-	-
MW-3	09/01/1991**	98.52	18.82	79.70	ND	ND	0.1	ND	ND	ND	ND	-	-	-	-
MW-3	11/01/1991**	98.52	18.83	79.69	-	-	-	-	-	-	-	-	-	-	-
MW-3	12/01/1991**	98.52	19.26	79.26	ND	0.1	ND	ND	ND	ND	ND	-	-	-	-
MW-3	01/01/1992**	98.52	18.63	79.89	-	-	-	-	-	-	-	-	-	-	-
MW-3	03/01/1992**	98.52	19.62	78.90	ND	1.8	ND	ND	0.011	ND	ND	-	-	-	-
MW-3	04/01/1992**	98.52	18.30	80.22	-	-	-	-	-	-	-	-	-	-	-
MW-3	05/01/1992**	98.52	19.24	79.28	-	-	-	-	-	-	-	-	-	-	-
MW-3	06/01/1992**	98.52	19.00	79.52	1.2	ND	ND	ND	ND	ND	0.006	-	-	-	-
MW-3	07/01/1992**	98.52	18.50	80.02	-	-	-	-	-	-	-	-	-	-	-
MW-3	08/01/1992**	98.52	18.37	80.15	-	-	-	-	-	-	-	-	-	-	-
MW-3	09/01/1992**	98.52	18.35	80.17	-	ND	ND	ND	ND	ND	ND	-	-	-	-
MW-3	10/01/1992**	98.52	18.66	79.86	-	-	-	-	-	-	-	-	-	-	-
MW-3	11/01/1992**	98.52	18.59	79.93	-	-	-	-	-	-	-	-	-	-	-
MW-3	12/01/1992**	98.52	18.46	80.06	6.3	ND	ND	ND	ND	ND	ND	-	-	-	-
MW-3	05/01/1993**	98.52	19.06	79.46	-	ND	ND	ND	ND	ND	ND	-	ND	-	-

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Historical Groundwater Analytical Results
Chevron-Branded Service Station 98557
415 Muldoon Road
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Location	Date	TOC	DTW	GWE	HYDROCARBONS			PRIMARY VOCS					ADDITIONAL VOCS		Metals
					TPH	DRO	GRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	HVOC	SVOC	Lead
					mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ADEC Groundwater Cleanup Levels					1.1	1.5	2.2	0.0046	1.1	0.015	0.19	0.14			0.015
MW-3	08/01/1993**	98.52	18.63	79.89	-	ND	ND	ND	ND	ND	ND	-	0.001	-	-
MW-3	11/01/1993**	98.52	18.63	79.89	-	ND	ND	ND	ND	ND	0.006	-	0.004	-	-
MW-3	03/01/1994**	98.52	19.18	79.34	-	ND	-	-	-	-	-	-	ND	-	-
MW-3	06/01/1994**	98.52	18.93	79.59	-	ND	-	-	-	-	-	-	ND	-	-
MW-3	08/18/1994	98.52	18.67	79.85	-	ND	-	-	-	-	-	-	ND	-	-
MW-3	03/24/1995	98.52	20.02	78.50	-	-	-	-	-	-	-	-	ND	-	-
MW-3	03/31/1995	98.52	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-3	09/06/1995	98.52	18.36	80.16	-	0.53	-	-	-	-	-	-	0.0036	-	-
MW-3	02/14/1996	98.52	19.45	79.07	-	0.17	-	-	-	-	-	-	ND	-	-
MW-3	06/01/1996	98.52	21.01	77.51	-	-	-	-	-	-	-	-	-	-	-
MW-3	08/23/1996	98.52	21.17	77.35	-	0.193	-	-	-	-	-	-	<0.0005 / <0.001	-	-
MW-3	10/21/1996	98.52	21.25	77.27	-	-	-	-	-	-	-	-	-	-	-
MW-3	04/27/1997	98.52	21.46	77.06	-	0.229	-	-	-	-	-	-	<0.001 / <0.005	-	-
MW-3	09/08/1997	98.52	19.68	78.84	-	0.221	-	-	-	-	-	-	<0.001 / <0.005	-	-
MW-3	04/22/1998	98.52	19.25	79.27	-	0.125 / 0.125	-	-	-	-	-	-	<0.001 / <0.01 / <0.001 / <0.01	-	-
MW-3	09/17/1998	98.52	18.88	79.64	-	0.144 / 0.106	-	-	-	-	-	-	<0.001 / <0.005 / <0.001 / <0.005	-	-
MW-3	04/26/1999	98.52	19.31	79.21	-	<0.1	-	-	-	-	-	-	<0.0005 / <0.002	-	-
MW-3	10/13/1999	98.52	19.47	79.05	-	-	-	-	-	-	-	-	<0.001 / <0.01	-	-
MW-3	05/17/2000	98.52	19.33	79.19	-	<0.1	-	-	-	-	-	-	<0.0005 / <0.005	-	-
MW-3	09/22/2000	98.52	18.80	79.72	-	<0.1	-	-	-	-	-	-	<0.001 / <0.005	-	-
MW-3	05/01/2001	98.52	19.61	78.91	-	0.126	-	-	-	-	-	-	<0.001 / <0.005	-	-
MW-3	09/25/2001	98.52	19.15	79.37	-	0.102	- / <0.05	- / <0.0002	- / <0.0005	- / <0.0005	- / <0.001	- / <0.001	<0.001 / <0.005 / -	-	-
MW-3	05/02/2002	98.52	19.48	79.04	-	-	-	-	-	-	-	-	<0.001 / <0.005 / <0.001 / <0.005	-	-
MW-3	09/27/2002	98.52	18.79	79.73	-	<0.1	-	-	-	-	-	-	<0.001 / <0.005	-	-
MW-3	05/23/2003	98.52	19.19	79.33	-	<0.024	-	-	-	-	-	-	<0.0005 / <0.002	-	-
MW-3	10/08/2003	98.52	19.55	78.97	-	0.043 / 0.045	-	-	-	-	-	-	<0.0005 / <0.002 / <0.0005 / <0.002	-	-
MW-3	06/04/2004	98.52	19.78	78.74	-	0.062	-	-	-	-	-	-	<0.0005 / <0.002	-	-
MW-3	09/28/2004	98.52	19.88	78.64	-	<0.02	-	-	-	-	-	-	<0.0005 / <0.002	-	-
MW-3	05/13/2005	98.52	18.86	79.66	-	0.084 / 0.067	-	-	-	-	-	-	<0.0005 / <0.002 / <0.0005 / <0.002	-	-
MW-3	09/26/2005	98.52	18.52	80.00	-	<0.024 / <0.024	-	-	-	-	-	-	<0.0005 / <0.002 / <0.0005 / <0.002	-	-
MW-3	05/17/2006	98.52	19.63	78.89	-	<0.025	-	-	-	-	-	-	<0.0008 / <0.002	-	-
MW-3	09/25/2006	98.52	18.73	79.79	-	0.22	-	-	-	-	-	-	<0.0008 / <0.002	-	-
MW-3	05/15/2007	98.52	18.78	79.74	-	0.13	-	-	-	-	-	-	<0.0008 / <0.002	<0.001 / <0.021	-
MW-3	09/24/2007	98.52	18.43	80.09	-	1.6	-	-	-	-	-	-	<0.0005 / <0.002	<0.001 / <0.020	-
MW-3	05/14/2008	98.52	18.42	80.10	-	0.084 / 0.087	<0.01	<0.0005	<0.0007	<0.0008	<0.0016	<0.002	<0.0008 / <0.002 / <0.0008 / <0.002	<0.001 / <0.021 / <0.001 / <0.021	-
MW-3	09/16/2008	98.52	18.06	80.46	-	<0.05 / <0.053	0.01	<0.0005	0.003	<0.0005	0.0008	<0.002	<0.0001 / <0.0003 / <0.0001 / <0.0003	<0.001 / <0.020 / <0.001 / <0.020	-
MW-3	06/18/2009	98.52	18.65	79.87	-	<0.050	-	-	-	-	-	-	ND	ND	-
MW-3	09/07/2009	98.52	18.88	79.64	-	<0.048	-	-	-	-	-	-	ND	ND	-
MW-3	04/21/2010	98.52	19.60	78.92	-	<0.053 UJ	-	<0.0005	<0.0005	<0.0005	<0.0005	-	ND	ND	-
MW-3	07/22/2010	98.52	19.18	79.34	-	0.055 J	-	-	-	-	-	-	ND	ND	-
MW-3	04/19/2011	98.52	19.47	79.05	-	0.084 J	-	-	-	-	-	-	ND	ND	-
MW-3	08/22/2011	253.02	19.17	233.85	-	0.12 J	-	-	-	-	-	-	ND	ND	<0.0022
MW-3	05/22/2012	253.02	18.34	234.68	-	<0.048	-	-	-	-	-	-	ND	ND	<0.0022
MW-3	07/30/2012	253.02	17.69	235.33	-	0.096 J	-	-	-	-	-	-	ND	ND	<0.0051
MW-3	05/14/2013	253.02	18.04	234.98	-	-	-	-	-	-	-	-	-	-	-
MW-3	09/17/2013	253.02	17.69	235.33	-	-	-	-	-	-	-	-	-	-	-
MW-3	05/02/2014	253.02	18.06	234.96	-	-	-	-	-	-	-	-	-	-	-
MW-3	11/08/2014	253.02	18.60	234.42	-	-	-	-	-	-	-	-	-	-	-
MW-3	05/06/2015	253.02	19.24	233.78	-	-	-	-	-	-	-	-	-	-	-

Table 2
Historical Groundwater Analytical Results
Chevron-Branded Service Station 98557
415 Muldoon Road
Anchorage, Alaska

Location	Date	TOC	DTW	GWE	HYDROCARBONS			PRIMARY VOCS					ADDITIONAL VOCS		Metals
					TPH	DRO	GRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	HVOC	SVOC	Lead
		ft msl	ft btoc	ft msl	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ADEC Groundwater Cleanup Levels					1.1	1.5	2.2	0.0046	1.1	0.015	0.19	0.14			0.015
MW-3	10/21/2015	253.02	18.79	234.23	-	-	-	-	-	-	-	-	-	-	-
MW-3	06/03/2016	253.02	18.81	234.21	-	-	-	-	-	-	-	-	-	-	-
MW-3	10/14/2016	253.02	18.69	234.33	-	-	-	-	-	-	-	-	-	-	-
MW-3	05/23/2017	253.02	18.35	234.67	-	-	-	-	-	-	-	-	-	-	-
MW-3	09/01/2017	253.02	18.84	234.18	-	-	-	-	-	-	-	-	-	-	-
MW-3	05/21/2018	253.02	19.11	233.91	-	-	-	-	-	-	-	-	-	-	-
MW-3	09/25/2018	252.92*	19.12	233.90	-	-	-	-	-	-	-	-	-	-	-
MW-3-FB	05/14/2008	-	-	-	-	<0.024	<0.01	<0.0005	<0.0007	<0.0008	<0.0016	<0.002	<0.0008 / <0.002	<0.001 / <0.020	-
MW-3-FB	09/16/2008	-	-	-	-	<0.050	0.01	<0.0005	0.003	<0.0005	0.0008	<0.002	<0.0001 / <0.0003	<0.001 / <0.00021	-
MW-4R	05/01/1993**	-	-	-	-	-	2.9	0.003	0.02	0.016	0.048	-	ND	-	-
MW-4R	08/01/1993**	-	-	-	-	0.44	1.2	0.005	ND	0.006	0.019	-	0.0008	-	-
MW-4R	11/01/1993**	-	-	-	-	0.36	0.52	0.001	0.016	0.003	0.008	-	0.003	-	-
MW-4R	03/01/1994**	-	-	-	-	0.07	0.3	0.0015	0.015	0.0068	0.015	-	ND	-	-
MW-4R	06/01/1994**	-	-	-	-	0.7	2	0.0014	0.014	0.0031	0.019	-	ND	-	-
MW-4R	08/18/1994	-	17.71	-	-	0.3	0.53	0.002	ND	0.0024	0.0055	-	ND	-	-
MW-4R	03/24/1995	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-4R	04/24/1995	-	17.90	-	-	-	0.51	ND	0.0005	0.001	0.0037	-	-	-	-
MW-4R	09/06/1995	-	17.37	-	3.3	1.1	1.2	ND	0.0014	0.0024	0.0028	-	0.0023	-	-
MW-4R	02/14/1996	-	18.44	-	-	0.57	3.2	0.00063	0.0039	0.0066	0.012	-	ND	-	-
MW-4R	06/01/1996	-	20.05	-	-	-	-	-	-	-	-	-	-	-	-
MW-4R	08/23/1996	-	20.19	-	-	1.57	0.586	<0.0025	0.0147	0.0041	0.0254	-	<0.0005 / <0.001	-	-
MW-4R	10/21/1996	-	20.22	-	-	-	-	-	-	-	-	-	-	-	-
MW-4R	04/27/1997	-	20.45	-	-	2.57	0.199	<0.0005	<0.0005	<0.0005	0.00228	-	<0.001 / <0.005	-	-
MW-4R	09/08/1997	-	18.67	-	-	2.24 / 2.33	0.227 / 0.267	0.000577 / 0.000665	0.00146 / 0.00166	<0.0005 / <0.0005	0.00293 / 0.00324	-	<0.001 / <0.005 / <0.001 / <0.005	-	-
MW-4R	04/22/1998	-	18.50	-	-	0.326	0.324	<0.0006	<0.0012	<0.0005	<0.0012	-	<0.001 / <0.01	-	-
MW-4R	09/17/1998	-	18.22	-	-	0.23	0.17	<0.0005	<0.0085	<0.0005	<0.001	-	<0.001 / <0.005	-	-
MW-4R	04/26/1999	-	18.28	-	-	0.11	<0.05	<0.0005	0.00062	<0.0005	<0.0005	<0.005	<0.0005 / <0.002	-	-
MW-4R	10/13/1999	-	18.45	-	-	0.21	0.119 / <0.05	0.0163	<0.0005	<0.0005	<0.0005	<0.005	<0.001 / <0.01	-	-
MW-4R	05/17/2000	-	18.30	-	-	0.155	<0.08	0.000718	<0.0005	<0.0005	<0.001	<0.002	<0.0005 / <0.005	-	-
MW-4R	09/22/2000	-	17.79	-	-	0.18	0.0622	<0.00093	<0.0005	<0.0005	<0.001	<0.001	<0.001 / <0.005	-	-
MW-4R	05/01/2001	-	18.60	-	-	0.208	<0.05	0.000392	<0.0005	<0.0005	<0.001	<0.001	<0.001 / <0.005	-	-
MW-4R	09/25/2001	-	18.11	-	-	-	0.17	0.00433	0.000978	<0.0005	0.00113	0.00172	<0.001 / <0.005	-	-
MW-4R	05/02/2002	-	18.45	-	-	-	0.0547	0.000266	<0.0005	<0.0005	<0.001	<0.001	<0.001 / <0.005	-	-
MW-4R	09/27/2002	-	17.80	-	-	-	<0.08	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.001 / <0.005	-	-
MW-4R	05/23/2003	-	18.17	-	-	-	0.22 / 0.2	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.001 / <0.001	<0.0005 / <0.0005	<0.0005 / <0.002 / <0.0005 / <0.002	-	-
MW-4R	10/08/2003	-	18.55	-	-	-	0.12	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.0005 / <0.002	-	-
MW-4R	06/04/2004	-	18.76	-	-	-	0.03	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.0005 / <0.002	-	-
MW-4R	09/28/2004	-	18.65	-	-	-	<0.01	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.0005 / <0.002	-	-
MW-4R	05/13/2005	-	17.69	-	-	-	0.03	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.0005 / <0.002	-	-
MW-4R	09/26/2005	-	17.50	-	-	-	<0.01	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.0005 / <0.002	-	-
MW-4R	05/17/2006	-	18.61	-	-	-	<0.01	<0.0005	<0.0007	<0.0008	<0.0016	<0.002	<0.0008 / <0.002	-	-
MW-4R	09/25/2006	-	17.85	-	-	-	0.34	<0.0005	<0.0007	<0.0008	<0.0016	<0.002	<0.0008 / <0.002	-	-
MW-4R	05/15/2007	-	-	-	-	-	-	-	UNABLE TO LOCATE	-	-	-	-	-	-
MW-4R	09/24/2007	-	-	-	-	-	-	-	UNABLE TO LOCATE	-	-	-	-	-	-
MW-4R	05/14/2008	-	-	-	-	-	-	-	UNABLE TO LOCATE	-	-	-	-	-	-
MW-4R	09/16/2008	-	-	-	-	-	-	-	UNABLE TO LOCATE	-	-	-	-	-	-

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Chevron-Branded Service Station 98557
415 Muldoon Road
Anchorage, Alaska**

Location	Date	TOC	DTW	GWE	HYDROCARBONS			PRIMARY VOCS				ADDITIONAL VOCS		Metals	
					TPH	DRO	GRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	HVOC	SVOC	Lead
	Units	ft msl	ft btoc	ft msl	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ADEC Groundwater Cleanup Levels					1.1	1.5	2.2	0.0046	1.1	0.015	0.19	0.14			0.015
MW-7	02/01/1991**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-7	06/01/1991**	98.98	19.18	79.80	2	ND	ND	ND	ND	ND	ND	-	-	-	-
MW-7	07/01/1991**	98.98	19.25	79.73	-	-	-	-	-	-	-	-	-	-	-
MW-7	09/01/1991**	98.98	18.80	80.18	ND	1.1	0.1	0.004	ND	ND	0.012	-	-	-	-
MW-7	11/01/1991**	98.98	18.90	80.08	-	-	-	-	-	-	-	-	-	-	-
MW-7	12/01/1991**	98.98	19.32	79.66	ND	1.2	ND	ND	ND	ND	ND	-	-	-	-
MW-7	01/01/1992**	98.98	18.72	80.26	-	-	-	-	-	-	-	-	-	-	-
MW-7	03/01/1992**	98.98	19.65	79.33	ND	1.1	ND	ND	0.01	0.009	ND	-	-	-	-
MW-7	04/01/1992**	98.98	18.34	80.64	-	-	-	-	-	-	-	-	-	-	-
MW-7	05/01/1992**	98.98	18.77	80.21	-	-	-	-	-	-	-	-	-	-	-
MW-7	06/01/1992**	98.98	19.01	79.97	ND	0.32	ND	0.006	0.004	ND	ND	-	-	-	-
MW-7	07/01/1992**	98.98	18.53	80.45	-	-	-	-	-	-	-	-	-	-	-
MW-7	08/01/1992**	98.98	18.41	80.57	-	-	-	-	-	-	-	-	-	-	-
MW-7	09/01/1992**	98.98	18.41	80.57	-	ND	ND	ND	ND	ND	ND	-	-	-	-
MW-7	10/01/1992**	98.98	18.72	80.26	-	-	-	-	-	-	-	-	-	-	-
MW-7	11/01/1992**	98.98	18.63	80.35	-	-	-	-	-	-	-	-	-	-	-
MW-7	12/01/1992**	98.98	18.50	80.48	3.8	ND	ND	ND	ND	ND	ND	-	-	-	-
MW-7	05/01/1993**	98.98	19.11	79.87	-	ND	ND	ND	ND	ND	ND	-	ND	-	-
MW-7	08/01/1993**	98.98	18.68	80.30	-	ND	ND	ND	ND	ND	ND	-	ND	-	-
MW-7	11/01/1993**	98.98	18.68	80.30	-	0.09	ND	ND	ND	ND	ND	-	0.0005	-	-
MW-7	06/01/1994**	98.98	18.94	80.04	-	ND	-	-	-	-	-	-	ND	-	-
MW-7	08/18/1994	98.98	18.78	80.20	-	ND	-	-	-	-	-	-	ND	-	-
MW-11	02/01/1991**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-11	06/01/1991**	98.14	18.70	79.44	1.2	ND	ND	ND	ND	ND	ND	-	-	-	-
MW-11	09/01/1991**	98.14	18.04	80.10	1.7	0.67	0.6	0.004	ND	ND	0.022	-	-	-	-
MW-11	12/01/1991**	98.14	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-11	06/01/1992**	98.14	18.31	79.83	2.9	0.92	ND	ND	0.008	ND	0.008	-	-	-	-
MW-11	09/01/1992**	98.14	17.63	80.51	-	ND	ND	ND	ND	ND	ND	-	-	-	-
MW-11	12/01/1992**	98.14	17.78	80.36	2.1	ND	ND	ND	ND	ND	ND	-	-	-	-
MW-11	05/01/1993**	98.14	18.39	79.75	-	0.094	ND	ND	ND	ND	ND	-	ND	-	-
MW-11	08/01/1993**	98.14	17.96	80.18	-	ND	ND	ND	ND	ND	ND	-	ND	-	-
MW-11	11/01/1993**	98.14	17.95	80.19	-	0.06	ND	ND	ND	ND	ND	-	ND	-	-
MW-11	03/01/1994**	98.14	18.52	79.62	-	ND	-	-	-	-	-	-	ND	-	-
MW-11	06/01/1994**	98.14	18.25	79.89	-	ND	-	-	-	-	-	-	ND	-	-
MW-11	08/18/1994	98.14	18.00	80.14	-	ND	-	-	-	-	-	-	ND	-	-
MW-11	03/24/1995	98.14	19.38	78.76	-	-	-	-	-	-	-	-	-	-	-
MW-11	06/19/1995	98.14	17.88	80.26	-	-	-	-	-	-	-	-	-	-	-
MW-11	09/06/1995	97.76	17.73	80.03	-	-	-	-	-	-	-	-	-	-	-
MW-11	11/14/1995	97.76	17.59	80.17	-	-	-	-	-	-	-	-	-	-	-
MW-11	02/14/1996	97.76	15.48	82.28	-	-	-	-	-	-	-	-	-	-	-
MW-11	06/01/1996	97.76	19.94	77.82	-	-	-	-	-	-	-	-	-	-	-
MW-11	08/23/1996	97.76	20.08	77.68	-	-	-	-	-	-	-	-	-	-	-
MW-11	10/21/1996	97.76	20.17	77.59	-	-	-	-	-	-	-	-	-	-	-
MW-11	04/27/1997	97.76	20.31	77.45	-	-	-	-	-	-	-	-	-	-	-
MW-11	09/08/1997	97.76	18.62	79.14	-	-	-	-	-	-	-	-	-	-	-
MW-11	04/22/1998	97.76	18.40	79.36	-	-	-	-	-	-	-	-	-	-	-
MW-11	09/17/1998	97.76	18.00	79.76	-	-	-	-	-	-	-	-	-	-	-
MW-11	04/26/1999	97.76													

UNABLE TO LOCATE

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415 Muldoon Road
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Location	Date	TOC	DTW	GWE	HYDROCARBONS			PRIMARY VOCS					ADDITIONAL VOCS		Metals
					TPH	DRO	GRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	HVOC	SVOC	Lead
					mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ADEC Groundwater Cleanup Levels					1.1	1.5	2.2	0.0046	1.1	0.015	0.19	0.14			0.015
MW-11	10/13/1999	97.76	18.42	79.34	-	-	-	-	-	-	-	-	-	-	-
MW-11	05/17/2000	97.76	18.28	79.48	-	-	-	-	-	-	-	-	-	-	-
MW-11	09/22/2000	97.76	17.75	80.01	-	-	-	-	-	-	-	-	-	-	-
MW-11	05/01/2001	97.76	18.56	79.20	-	-	-	-	-	-	-	-	-	-	-
MW-11	09/25/2001	97.76	18.09	79.67	-	-	-	-	-	-	-	-	-	-	-
MW-11	05/02/2002	97.76	18.52	79.24	-	-	-	-	-	-	-	-	-	-	-
MW-11	09/27/2002	97.76													
MW-11	05/23/2003	97.76	18.14	79.62	-	-	-	-	-	-	-	-	-	-	-
MW-11	10/08/2003	97.76	18.53	79.23	-	-	-	-	-	-	-	-	-	-	-
MW-11	06/04/2004	97.76	18.76	79.00	-	-	-	-	-	-	-	-	-	-	-
MW-11	09/28/2004	97.76													
MW-11	05/13/2005	97.76	17.65	80.11	-	-	-	-	-	-	-	-	-	-	-
MW-11	09/26/2005	97.76													
MW-11	05/17/2006	97.76													
MW-12	05/01/1993**	-	-	-	-	3.1	0.62	ND	0.0005	ND	0.002	-	ND	-	-
MW-12	08/01/1993**	98.52	-	-	-	0.38	0.42	ND	ND	ND	ND	-	ND	-	-
MW-12	11/01/1993**	98.52	-	-	-	0.06	0.18	ND	0.011	0.001	0.001	-	0.0038	-	-
MW-12	03/01/1994**	98.52	-	-	-	0.076	0.18	ND	0.0045	0.001	0.0016	-	ND	-	-
MW-12	06/01/1994**	98.52	-	-	-	0.45	ND	ND	ND	ND	ND	-	ND	-	-
MW-12	08/18/1994	98.52	18.26	80.26	-	ND	0.12	ND	ND	ND	ND	-	0.0007	-	-
MW-12	03/31/1995	98.52	19.53	78.99	0.014	7	0.14	0.0012	0.0011	ND	0.0011	-	ND	-	-
MW-12	06/19/1995	98.52	18.08	80.44	-	-	-	-	-	-	-	-	-	-	-
MW-12	09/06/1995	98.52	17.94	80.58	9.2	8.4	0.23	ND	0.00052	ND	ND	-	0.0017	-	-
MW-12	11/14/1995	98.52	18.25	80.27	-	-	-	-	-	-	-	-	-	-	-
MW-12	02/14/1996	98.52	19.01	79.51	-	5.6	3.5	ND	0.0045	ND	0.0025	-	ND	-	-
MW-12	06/01/1996	98.52	20.58	77.94											
MW-12	08/23/1996	98.52	20.69	77.83	-	7.72	0.657	<0.0005	0.00109	<0.0005	0.00252	-	<0.00051 / <0.001	-	-
MW-12	10/21/1996	98.52	20.76	77.76	-	-	-	-	-	-	-	-	-	-	-
MW-12	04/27/1997	98.52	20.99	77.53	-	5.6	0.365	<0.0005	<0.0005	<0.0005	0.00371	-	<0.001 / <0.005	-	-
MW-12	09/08/1997	98.52	19.22	79.30	-	1.48	0.0598	<0.0005	<0.0005	<0.0005	<0.001	-	<0.001 / <0.005	-	-
MW-12	04/22/1998	98.52	19.00	79.52	-	0.559	<0.05	<0.0005	<0.0005	<0.0005	<0.001	-	<0.001 / <0.01	-	-
MW-12	09/17/1998	98.52	19.00	79.52	-	0.239	<0.05	<0.0005	<0.0005	<0.0005	<0.001	-	<0.001 / <0.005	-	-
MW-12	04/26/1999	98.52	18.81	79.71	-	0.14	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.005	<0.0005 / <0.002	-	-
MW-12	10/13/1999	98.52	18.98	79.54	-	0.2	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.005	<0.001 / <0.01	-	-
MW-12	05/17/2000	98.52	18.86	79.66	-	0.103	<0.08	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.0005 / <0.005	-	-
MW-12	09/22/2000	98.52	18.34	80.18	-	0.106 / <0.1	<0.05 / <0.05	<0.0002 / <0.0002	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.001 / <0.001	<0.001 / <0.001	<0.001 / <0.005 / <0.001 / <0.005	-	-
MW-12	05/01/2001	98.52	19.14	79.38	-	0.113	<0.05	0.000213	<0.0005	<0.0005	<0.001	<0.001	<0.001 / <0.005	-	-
MW-12	09/25/2001	98.52	18.67	79.85	-	-	<0.05	<0.0002	<0.0005	<0.0005	<0.001	<0.001	<0.001 / <0.005	-	-
MW-12	05/02/2002	98.52	18.98	79.54	-	-	<0.05	<0.0002	<0.0005	<0.0005	<0.001	<0.001	<0.001 / <0.005	-	-
MW-12	09/27/2002	98.52	18.31	80.21	-	-	<0.08	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.001 / <0.005	-	-
MW-12	05/23/2003	98.52	18.71	79.81	-	-	<0.01	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005 / <0.002	-	-
MW-12	10/08/2003	98.52	19.06	79.46	-	-	<0.01	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.0005 / <0.002	-	-
MW-12	06/04/2004	98.52	19.28	79.24	-	-	<0.01 / <0.01	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.001 / <0.001	<0.002 / <0.002	<0.0005 / <0.002 / <0.0005 / <0.002	-	-
MW-12	09/28/2004	98.52	19.23	79.29	-	-	<0.01	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.0005 / <0.002	-	-
MW-12	05/13/2005	98.52	18.27	80.25	-	-	<0.01	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.0005 / <0.002	-	-
MW-12	09/26/2005	98.52													
MW-12	05/17/2006	98.52	19.23	79.29	-	-	<0.01 / <0.01	<0.0005 / <0.0005	<0.0007 / <0.0007	<0.0008 / <0.0008	<0.0016 / <0.0016	<0.002 / <0.002	<0.0008 / <0.002 / <0.0008 / <0.002	-	-

Table 2
Historical Groundwater Analytical Results
Chevron-Branded Service Station 98557
415 Muldoon Road
Anchorage, Alaska

Location	Date	TOC	DTW	GWE	HYDROCARBONS			PRIMARY VOCS					ADDITIONAL VOCS		Metals
					TPH	DRO	GRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	HVOC	SVOC	Lead
ADEC Groundwater Cleanup Levels					1.1	1.5	2.2	0.0046	1.1	0.015	0.19	0.14			0.015
	Units	ft msl	ft btoc	ft msl	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW-13	07/30/2012	252.83	17.86	234.97	-	6.6 J / 17 J	1.7 / 1.5	0.0098 / 0.010	0.012 / 0.012	0.036 / 0.037	0.19 / 0.19	-	0.004 / 0.004	0.126 J / 0.176 J	0.490 / 0.443
MW-13	05/14/2013	252.83	18.15	234.68	-	1.0 / 0.73	0.38 / 0.37	0.0012 / 0.0012	0.00087 J / 0.00088 J	0.0098 / 0.010	0.028 / 0.030	-	ND / ND	-	0.74 / 0.57
MW-13 ^{HS}	05/14/2013	252.83	18.15	234.68	-	3.5 J / 1.6 J	0.27 / 0.31	0.0012 / 0.0012	0.00093 J / 0.00097 J	0.0087 / 0.0085	0.026 / 0.026	-	-	-	1.4 / 0.97
MW-13	09/17/2013	252.83	17.82	235.01	-	-	-	-	-	-	-	-	-	-	-
MW-13	09/18/2013	252.83	-	-	-	0.71 / 0.77	0.17 / 0.18	0.00098 J / 0.00097 J	0.00059 J / 0.00063 J	0.0057 / 0.0057	0.015 / 0.015	-	-	-	0.21 J / 1.2 J
MW-13	05/02/2014	252.83	18.20	234.63	-	0.62 / 0.54	0.16 / 0.14	0.00090 J / 0.00077 J	0.00041 J / <0.00036	0.0049 / 0.0041	0.0034 / 0.0028 J	-	-	-	0.025 / 0.018
MW-13	11/08/2014	252.83	18.70	234.13	-	0.55 J / 0.50 J	0.089 J / 0.087 J	0.00054 J / 0.00046 J	<0.00019 J / <0.00018 J	0.0018 / 0.0018	0.0011 J / 0.0012 J	-	-	-	0.033 / 0.020
MW-13	05/06/2015	252.83	19.38	233.45	-	0.39 J / 0.35 J	-	-	-	-	-	-	-	-	0.673 / 0.875
MW-13	10/21/2015	252.83	18.93	233.90	-	11 / 4.1 J	-	-	-	-	-	-	-	-	0.0748 / 0.0539
MW-13	06/03/2016	252.83	18.94	233.89	-	0.53 J / 5.2 J	-	-	-	-	-	-	-	-	0.223 / 0.219
MW-13	10/14/2016	252.83	18.83	234.00	-	0.71 / 0.65	-	-	-	-	-	-	-	-	0.0747 / 0.0696
MW-13	05/23/2017	252.83	18.53	234.30	-	0.36 J / 1.9 J	-	-	-	-	-	-	-	-	0.0298 J / 0.226 J
MW-13	09/01/2017	252.83	19.11	233.72	-	0.59 J	-	-	-	-	-	-	-	-	0.137
MW-13	05/21/2018	252.83	19.23	233.60	-	5.1 J	-	-	-	-	-	-	-	-	1.24 / 0.910
MW-13	09/25/2018	252.83	19.27	233.56	-	9.1 / 7.4	-	-	-	-	-	-	-	-	0.193 / 0.265
MW-14	08/22/2011	251.41	17.99	233.42	-	<0.049	0.043 J	<0.0005	<0.0005	<0.0005	<0.0015	-	ND	ND	<0.0026 UJ
MW-14	05/22/2012	251.41	17.11	234.30	-	<0.049 UJ	<0.010	<0.0005	<0.0005	<0.0005	<0.0015	-	ND	0.0003	<0.0022
MW-14	07/30/2012	251.41	16.51	234.90	-	<0.048	<0.010	<0.0005	<0.0005	<0.0005	<0.0015	-	ND	ND	<0.0051
MW-14	05/14/2013	251.41	16.81	234.60	-	<0.063 J	<0.050	<0.00024	<0.00023	<0.00024	<0.00072	-	-	-	0.020
MW-14 ^{HS}	05/14/2013	251.41	16.81	234.60	-	<0.12 J	<0.050	<0.00024	<0.00023	<0.00024	<0.00072	-	-	-	0.10
MW-14	09/17/2013	251.41	16.45	234.96	-	-	-	-	-	-	-	-	-	-	-
MW-14	09/18/2013	-	-	-	-	<0.23	<0.050	<0.00024	<0.00023	<0.00024	<0.00072	-	-	-	0.018
MW-14	05/02/2014	251.41	16.88	234.53	-	<0.068	<0.050	<0.00015	<0.00011	<0.00016	<0.00040	-	-	-	0.00018
MW-14	11/08/2014	251.41	17.37	234.04	-	0.091 J	<0.050 J	<0.00015	<0.00011	<0.00016	<0.00040	-	-	-	0.0018 J
MW-14	05/06/2015	251.41	18.01	233.40	-	<0.051 J	-	-	-	-	-	-	-	-	0.0053 J
MW-14	10/21/2015	251.87	18.04	233.83	-	<0.051 J	-	-	-	-	-	-	-	-	0.0561 J
MW-14	06/03/2016	251.41	18.07	233.34	-	<0.051	-	-	-	-	-	-	-	-	<0.0051
MW-14	10/14/2016	251.41	17.98	233.43	-	1.2	-	-	-	-	-	-	-	-	<0.0062
MW-14	05/23/2017	251.41	17.65	233.76	-	<0.053	-	-	-	-	-	-	-	-	<0.0062
MW-14	09/01/2017	251.41	18.23	233.18	-	<0.050 J	-	-	-	-	-	-	-	-	0.0125 J
MW-14	05/21/2018	251.41	19.36	232.05	-	<0.050 J	-	-	-	-	-	-	-	-	0.0300
MW-14	09/25/2018	251.41	18.41	233.00	-	<0.051	-	-	-	-	-	-	-	-	<0.0071
RW-1	05/01/1993**	-	-	-	-	ND	3.3	0.003	0.019	0.021	0.15	-	ND	-	-
RW-1	08/01/1993**	-	-	-	-	2.3	3.2	0.01	0.009	0.018	0.11	-	ND	-	-
RW-1	11/01/1993**	-	-	-	-	2.7	1.5	0.001	0.012	0.009	0.049	-	ND	-	-
RW-1	03/01/1994**	-	-	-	-	0.31	3.9	0.0017	0.017	0.015	0.099	-	ND	-	-
RW-1	06/01/1994**	-	-	-	-	2.5	3.6	0.0017	0.013	0.011	0.073	-	ND	-	-
RW-1	08/18/1994	-	18.25	-	-	1.4	1.7	0.0047	0.0052	0.0071	0.033	-	ND	-	-
RW-1	12/13/1994	-	18.86	-	ND	2.1	3.8	0.012	0.013	0.016	0.071	-	ND	-	-
RW-1	03/24/1995	-	19.59	-	12	2.3	0.99	0.0023	0.0027	0.003	0.0096	-	ND	-	-
RW-1	04/24/1995	-	-	-	-	-	1.3	0.0018	0.0019	0.0024	0.039	-	-	-	-
RW-1	06/19/1995	-	18.08	-	5.7	2.9	0.41	0.0007	0.00062	0.00072	0.016	-	ND	-	-
RW-1	09/06/1995	-	18.01	-	2.2	1.1	0.095	0.0006	0.00098	0.0016	0.012	-	0.003	-	-
RW-1	11/14/1995	-	18.25	-	7.2	3.4	2.3 / 3.3	0.0016 / 0.0013	0.0025 / 0.004	0.0039 / 0.0067	0.013 / 0.02	-	ND	-	-
RW-1	02/14/1996	-	19.02	-	-	0.9	2.7	0.0026	0.0033	0.0049	0.026	-	ND	-	-
RW-1	06/01/1996	-	20.59	-	-	1.38 / 1.54	1.06 / 1.14	0.000847 / 0.000909	0.00201 / 0.00203	0.00219 / 0.00243	0.00666 / 0.00745	-	<0.0005 / <0.005 / <0.0005 / <0.005	-	-
RW-1	08/23/1996	-	20.69	-	-	1.2	0.082	0.000742	0.00204	0.00263	0.00666	-	<0.0005 / <0.001	-	-

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Location	Date	TOC	DTW	GWE	HYDROCARBONS			PRIMARY VOCS					ADDITIONAL VOCS		Metals
					TPH	DRO	GRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	HVOC	SVOC	Lead
		ft msl	ft btoc	ft msl	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ADEC Groundwater Cleanup Levels					1.1	1.5	2.2	0.0046	1.1	0.015	0.19	0.14			0.015
RW-1	10/21/1996	-	20.76	-	-	0.842	0.586	0.000828	0.00172	0.00187	0.00352	-	<0.0005 / <0.005	-	-
RW-1	04/27/1997	-	21.02	-	-	0.864	0.459	0.000617	0.000904	0.000862	0.00212	-	<0.001 / <0.005	-	-
RW-1	09/08/1997	-	19.22	-	-	4.77	0.791	0.00404	0.00271	0.00207	0.00622	-	<0.001 / <0.005	-	-
RW-1	04/22/1998	-	19.22	-	-	0.651	0.484	<0.0016	<0.0017	<0.0016	<0.0021	-	<0.001 / <0.01	-	-
RW-1	09/17/1998	-	18.96	-	-	0.232	0.352	<0.0005	<0.0165	<0.0015	<0.001	-	<0.001 / <0.005	-	-
RW-1	04/26/1999	-	18.81	-	-	1.53	0.167 / 0.168	0.0009 / 0.00093	0.00093 / 0.00106	0.00202 / 0.00237	0.00081 / 0.00159	<0.005 / <0.005	<0.0005 / <0.002 / <0.0005 / <0.002	-	-
RW-1	10/13/1999	-	19.00	-	-	0.39	0.209	<0.0005	<0.0005	<0.0005	<0.0005	<0.005	<0.001 / <0.01	-	-
RW-1	05/17/2000	-	18.85	-	-	0.164 / 0.225	<0.08 / <0.08	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.001 / <0.001	<0.002 / <0.002	<0.0005 / <0.005 / <0.0005 / <0.005	-	-
RW-1	09/22/2000	-	18.33	-	-	0.333	0.0675	<0.0002	<0.0005	<0.0005	<0.00113	<0.001	<0.001 / <0.005	-	-
RW-1	05/01/2001	-	19.16	-	-	0.299	0.167	0.000487	<0.0005	<0.0005	0.0013	<0.001	<0.001 / <0.005	-	-
RW-1	09/25/2001	-	18.68	-	-	-	0.172	0.000351	<0.0005	<0.0005	0.00143	<0.001	<0.001 / <0.005	-	-
RW-1	05/02/2002	-	17.96	-	-	-	0.0876	<0.0002	<0.0005	<0.0005	<0.001	<0.001	<0.001 / <0.005	-	-
RW-1	09/27/2002	-	18.32	-	-	-	<0.08	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.001 / <0.005	-	-
RW-1	05/23/2003	-	18.71	-	-	-	0.056	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005 / <0.002	-	-
RW-1	10/08/2003	-	19.09	-	-	-	0.019	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.0005 / <0.002	-	-
RW-1	06/04/2004	-	19.30	-	-	-	0.034	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.0005 / <0.002	-	-
RW-1	09/28/2004	-	19.27	-	-	-	<0.01	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.0005 / <0.002	-	-
RW-1	05/13/2005	-	18.20	-	-	-	0.023	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.0005 / <0.002	-	-
RW-1	09/26/2005	-	18.04	-	-	-	0.014	<0.0005	<0.0005	<0.0005	<0.001	<0.002	<0.0005 / <0.002	-	-
RW-1	09/25/2006	-	18.04	-	-	-	0.057	<0.0005	<0.0007	<0.0008	<0.0016	<0.002	<0.0008 / <0.002	-	-
RW-1	05/15/2007	-	18.56	-	-	<0.12 / <0.12	<0.01 / <0.01	<0.0005 / <0.0005	<0.0007 / <0.0007	<0.0008 / <0.0008	<0.0016 / <0.0016	<0.002 / <0.002	<0.0008 / <0.002 / <0.0008 / <0.002	<0.001 / <0.021 / <0.001 / <0.021	-
RW-1	09/24/2007	-	18.57	-	-	0.083 / 0.098	0.02 / 0.02	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.001 / <0.001	<0.002 / <0.002	<0.0005 / <0.002 / <0.0005 / <0.002	<0.001 / <0.019 / <0.001 / <0.020	-
RW-1	05/14/2008	-	18.52	-	-	0.083	0.02	<0.0005	<0.0007	<0.0008	<0.0016	<0.002	<0.0008 / <0.002	<0.001 / <0.021	-
RW-1	09/16/2008	-	18.19	-	-	0.061	0.06	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0001 / <0.0003	<0.001 / <0.00020	-
RW-1	06/18/2009	-	18.54	-	-	0.20 J / 0.13 J	0.039 J / 0.034 J	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.0015 / <0.0015	-	ND / ND	ND / ND	-
RW-1	09/07/2009	-	18.77	-	-	0.18 J / 0.14 J	0.053 J / 0.054 J	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.0015 / <0.0015	-	ND / ND	ND / ND	-
RW-1	04/21/2010	-	19.49	-	-	0.052 J / <0.051	-	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.0005	-	ND	ND	-
RW-1	07/22/2010	-	19.11	-	-	<0.051 / <0.051	0.010 J / <0.010	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.0015 / <0.0015	-	ND	ND	-
RW-1	04/19/2011	-	19.41	-	-	0.099 J / 0.089 J	0.019 J / <0.010	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.0015 / <0.0015	-	ND / ND	ND / ND	-
RW-1	08/22/2011	252.85	19.09	233.76	-	<0.048 / <0.049	0.019 J / 0.011 J	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.0015 / <0.0015	-	ND / ND	ND / ND	<0.0026 UJ / <0.0022
RW-1	05/22/2012	252.85	18.23	234.62	-	0.051 J / 0.056 J	<0.010 / <0.010	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.0005 / <0.0005	<0.0015 / <0.0015	-	ND / ND	ND / ND	<0.0022 / <0.0022
RW-1	07/30/2012	252.85	17.63	235.22	-	<0.051	<0.010	<0.0005	<0.0005	<0.0005	<0.0015	-	ND	ND	<0.0051
RW-1	05/14/2013	252.85	17.95	234.90	-	-	-	-	-	-	-	-	-	-	-
RW-1	09/17/2013	252.85	17.58	235.27	-	-	-	-	-	-	-	-	-	-	-
RW-1	05/02/2014	252.85	18.00	234.85	-	-	-	-	-	-	-	-	-	-	-
RW-1	11/08/2014	252.85	18.47	234.38	-	-	-	-	-	-	-	-	-	-	-
RW-1	05/06/2015	252.85	20.13	232.72	-	-	-	-	-	-	-	-	-	-	-
RW-1	10/21/2015	252.85	18.87	233.98	-	-	-	-	-	-	-	-	-	-	-
RW-1	06/03/2016	252.85	18.71	234.14	-	-	-	-	-	-	-	-	-	-	-
RW-1	10/14/2016	252.85	18.61	234.24	-	-	-	-	-	-	-	-	-	-	-
RW-1	05/23/2017	252.85	18.28	234.57	-	-	-	-	-	-	-	-	-	-	-
RW-1	09/01/2017	252.85	18.87	233.98	-	-	-	-	-	-	-	-	-	-	-
RW-1	05/21/2018	252.85	18.48	234.37	-	-	-	-	-	-	-	-	-	-	-
RW-1	09/25/2018	252.85	19.03	233.82	-	-	-	-	-	-	-	-	-	-	-
SUMP-1	06/01/1991**	-	-	79.82	52	19	1.1	ND	ND	ND	0.001	-	0.01	-	-
SUMP-1	07/01/1991**	-	-	79.70	-	-	-	-	-	-	-	-	-	-	-
SUMP-1	09/01/1991**	-	-	80.04	47	43	0.7	0.007	ND	ND	0.033	-	-	-	-
SUMP-1	11/01/1991**	-	-	80.13	-	-	-	-	-	-	-	-	-	-	-

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Location	Date	TOC	DTW	GWE	HYDROCARBONS			PRIMARY VOCS					ADDITIONAL VOCS		Metals
					TPH	DRO	GRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	HVOC	SVOC	Lead
		ft msl	ft btoc	ft msl	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ADEC Groundwater Cleanup Levels					1.1	1.5	2.2	0.0046	1.1	0.015	0.19	0.14			0.015
SUMP-1	12/01/1991**	-	-	79.64	18	8.2	0.27	0.005	0.001	0.004	0.007	-	-	-	-
SUMP-1	01/01/1992**	-	-	80.11	-	-	-	-	-	-	-	-	-	-	-
SUMP-1	03/01/1992**	-	-	79.29	10	45	0.39	0.007	0.011	0.009	0.024	-	-	-	-
SUMP-1	04/01/1992**	-	-	80.59	-	-	-	-	-	-	-	-	-	-	-
SUMP-1	05/01/1992**	-	-	80.16	-	-	-	-	-	-	-	-	-	-	-
SUMP-1	06/01/1992**	-	-	79.92	7.4	5.1	ND	0.009	0.007	ND	0.011	-	-	-	-
SUMP-1	07/01/1992**	-	-	80.42	-	-	-	-	-	-	-	-	-	-	-
SUMP-1	08/01/1992**	-	-	80.53	-	-	-	-	-	-	-	-	-	-	-
SUMP-1	09/01/1992**	-	-	80.56	-	ND	ND	ND	ND	ND	0.002	-	-	-	-
SUMP-1	11/01/1992**	-	-	80.34	-	-	-	-	-	-	-	-	-	-	-
SUMP-1	12/01/1992**	-	-	80.45	6.2	2.3	ND	0.003	0.001	0.002	0.007	-	-	-	-
SUMP-1	05/01/1993**	-	-	79.84	-	ND	0.12	0.005	0.001	0.002	0.005	-	ND	-	-
SUMP-1	08/01/1993**	-	-	80.24	-	0.38	0.16	0.004	0.001	0.002	0.004	-	ND	-	-
SUMP-1	11/01/1993**	-	-	80.20	-	1.3	0.093	0.002	0.002	0.002	0.004	-	ND	-	-
Trip Blank	02/14/1996	-	-	-	-	-	ND	ND	ND	ND	ND	-	-	-	-
Trip Blank	06/01/1996	-	-	-	-	-	<0.05	<0.0005	<0.0005	<0.0005	<0.001	-	-	-	-
Trip Blank	08/23/1996	-	-	-	-	-	<0.05	<0.0005	0.000513	<0.0005	<0.001	-	-	-	-
Trip Blank	10/21/1996	-	-	-	-	-	<0.05	<0.0005	<0.0005	<0.0005	<0.001	-	-	-	-
Trip Blank	04/27/1997	-	-	-	-	-	<0.05	<0.0005	<0.0005	<0.0005	<0.001	-	-	-	-
Trip Blank	09/08/1997	-	-	-	-	-	<0.05	<0.0005	<0.0005	<0.0005	<0.001	-	-	-	-
Trip Blank	04/22/1998	-	-	-	-	-	<0.05	<0.0005	<0.0005	<0.0005	<0.001	-	-	-	-
Trip Blank	09/17/1998	-	-	-	-	-	<0.05	<0.0005	<0.0005	<0.0005	<0.001	-	-	-	-
Trip Blank	04/26/1999	-	-	-	-	-	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-
Trip Blank	10/13/1999	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
Trip Blank	05/17/2000	-	-	-	-	-	<0.08	<0.0005	<0.0005	<0.0005	<0.001	<0.002	-	-	-
Trip Blank	09/22/2000	-	-	-	-	-	<0.05	<0.0002	<0.0005	<0.0005	<0.001	<0.001	-	-	-
Trip Blank	05/01/2001	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-
Trip Blank	09/25/2001	-	-	-	-	-	<0.05	<0.0002	<0.0005	<0.0005	<0.001	<0.001	-	-	-
Trip Blank	05/02/2002	-	-	-	-	-	<0.05	<0.0002	<0.0005	<0.0005	<0.001	<0.001	-	-	-
Trip Blank	09/27/2002	-	-	-	-	-	<0.08	<0.0005	<0.0005	<0.0005	<0.001	<0.002	-	-	-
Trip Blank	05/23/2003	-	-	-	-	-	<0.01	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-
Trip Blank	10/08/2003	-	-	-	-	-	<0.01	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	-	-	-
Trip Blank	06/04/2004	-	-	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	-	-	-
Trip Blank	09/28/2004	-	-	-	-	-	<0.01	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	-	-	-
Trip Blank	05/13/2005	-	-	-	-	-	<0.01	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	-	-	-
Trip Blank	09/26/2005	-	-	-	-	-	<0.01	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	-	-	-
Trip Blank	05/15/2007	-	-	-	-	-	<0.01	<0.0005	<0.0007	<0.0008	<0.0016	<0.002	<0.0008 / <0.002	-	-
Trip Blank	09/24/2007	-	-	-	-	-	<0.01	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	-	-	-
Trip Blank	05/14/2008	-	-	-	-	-	<0.01	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	-	-	-
Trip Blank	09/16/2008	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	-
Trip Blank	06/10/2009	-	-	-	-	-	<0.010	<0.0005	<0.0005	<0.0005	<0.0015	-	ND	-	-
Trip Blank	09/07/2009	-	-	-	-	-	<0.010	<0.0005	<0.0005	<0.0005	<0.0015	-	ND	-	-
Trip Blank	04/21/2010	-	-	-	-	-	-	<0.0005	<0.0005	<0.0005	<0.0005	-	ND	-	-
Trip Blank	07/22/2010	-	-	-	-	-	<0.010	<0.0005	<0.0005	<0.0005	<0.0015	-	ND	-	-
Trip Blank	04/19/2011	-	-	-	-	-	-	-	-	-	-	-	ND	-	-
Trip Blank	08/22/2011	-	-	-	-	-	<0.010	<0.0005	<0.0005	<0.0005	<0.0015	-	ND	-	-
Trip Blank	05/22/2012	-	-	-	-	-	<0.010	<0.0005	<0.0005	<0.0005	<0.0015	-	ND	-	-
Trip Blank	07/30/2012	-	-	-	-	-	<0.010	<0.0005	<0.0005	<0.0005	<0.0015	-	ND	-	-

Table 2
Historical Groundwater Analytical Results
Chevron-Branded Service Station 98557
415 Muldoon Road
Anchorage, Alaska

Location	Date	TOC	DTW	GWE	HYDROCARBONS			PRIMARY VOCS				ADDITIONAL VOCS		Metals	
					TPH	DRO	GRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	HVOC	SVOC	Lead
	Units	ft msl	ft btoc	ft msl	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
ADEC Groundwater Cleanup Levels					1.1	1.5	2.2	0.0046	1.1	0.015	0.19	0.14			0.015
Trip Blank-1	05/14/2013	-	-	-	-	-	<0.050	<0.00024	<0.00023	<0.00024	<0.00072	-	ND	-	-
Trip Blank-2	05/14/2013	-	-	-	-	-	<0.050	<0.00024	<0.00023	<0.00024	<0.00072	-	ND	-	-
Trip Blank	09/18/2013	-	-	-	-	-	<0.050	<0.00024	<0.00023	<0.00024	<0.00072	-	-	-	-
Trip Blank	05/02/2014	-	-	-	-	-	<0.050	<0.00015	<0.00011	<0.00016	<0.00040	-	-	-	-
Trip Blank	11/08/2014	-	-	-	-	-	<0.050	<0.00015	0.00014 J	<0.00016	<0.00040	-	-	-	-

Notes and Abbreviations

VOCs = volatile organic compounds

TOC = top of casing

DTW = depth to water

GWE = groundwater elevation

TPH = total petroleum hydrocarbons

DRO = diesel range organics by Alaska Series Method AK 102 SV

GRO = gasoline range organics by Alaska Series Method AK101

Benzene, Toluene, Ethylbenzene, and Total Xylenes by Environmental Protection Agency (EPA) Method 8021B or 8260B

Total Xylenes = sum of m-, o-, and p-xylenes

MTBE = methyl tertiary-butyl ether

HVOC = halogenated volatile organic compounds by EPA Method 524.2

SVOC = semivolatile organic compounds by EPA Method TCL 8270

Lead by EPA Method SW-846 6010B

ft msl = feet above mean sea level

ft btoc = feet below top of casing

mg/L = milligrams per liter

ADEC = Alaska Department of Environmental Conservation

^a = Levels established in ADEC Table C Groundwater Cleanup Levels (18 AAC 75.345)

Groundwater data from 1991 through 2008 provided by Gettler-Ryan, Inc.

BOLD = Indicates concentration above the ADEC Table C Groundwater Cleanup Level

ND = Not detected above laboratory method detection limits

- = Not measured / not analyzed

x / y = Sample results / blind duplicate results

<x = Constituent not detected above x milligrams per liter

J = Estimated value

* TOC adjusted by 0.2 ft cut for MW-1 and 0.1 ft for MW-3 after 9/25/2018 gauging.

** = Sample date accurate to month and year only