



May 28, 2019

Ms. Laura Jacobs
Environmental Program Specialist
Alaska Department of Environmental Conservation
610 University Ave
Fairbanks, AK 99709

Re: 2018 Kenworth Alaska, Fairbanks, Groundwater Monitoring Report

Dear Ms. Jacobs:

Please find attached an electronic copy of the above referenced report for your review.

If you have any questions, please feel free to contact me at (619) 838-1657.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Zack Kirk", written over a light blue horizontal line.

Zack Kirk
Senior Environmental Scientist
Rescon Alaska, LLC

cc:

2018 GROUNDWATER MONITORING REPORT

**2262 VAN HORN ROAD
FAIRBANKS, ALASKA**

May 2019

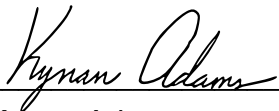
Prepared for:

Cymbaluk Investments, LLC

Prepared by:



1120 Huffman Road, Suite 24-431
Anchorage, AK 99515




Kynan Adams
Environmental Scientist
Rescon Alaska, LLC

May 28, 2019

Date

Reviewed by:



Zack Kirk
Senior Environmental Scientist
Rescon Alaska, LLC

May 28, 2019

Date

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ACRONYMS AND ABBREVIATIONS

AAC	Alaska Administrative Code
ADEC.....	Alaska Department of Environmental Conservation
AST.....	aboveground storage tank
bgs.....	below ground surface
DRO.....	diesel range organics
IDW.....	investigation-derived waste
mg/kg.....	milligrams per kilogram
mg/l.....	milligrams per liter
PID.....	photo-ionization detector
ppm.....	parts per million
Rescon.....	Rescon Alaska, LLC
RRO.....	residual range organics
SCL.....	soil cleanup level
SGS	SGS North America, Inc
TPECI	Travis Peterson Environmental Consulting, Inc.
UST	underground storage tank
YSI.....	YSI 556 meter

1. INTRODUCTION

Rescon Alaska, LLC (Rescon) has prepared this groundwater monitoring report to detail environmental services performed at 2262 Van Horn Road located in Fairbanks, Alaska on behalf of Cymbaluk Investments, LLC. Rescon has performed remedial environmental activities at the property since 2014 to address an area of diesel-contaminated soil along the eastern portion of the property. This report presents the field activities, observations, and analytical results from the monitoring effort performed at the site in September 2018. A site location map of the property is presented in Figure 1. The Alaska Department of Environmental Conservation (ADEC) maintains a record of the property in the Contaminated Sites database under File Number 102.38.178.

1.1. Site Description

The legal description for the subject property is UMB01, Block 1 of the Van Horn Industrial Park. The property is located at the northeast corner of the Van Horn Road, Peger Road intersection, as shown on Figure 2. The subject parcel is a mostly rectangular shaped lot with a portion of the southwest corner cut off by a municipal drainage ditch bordering the Van Horn/Peger Road intersection. The property is tenanted by a Kenworth Alaska franchise, a sales and service shop for diesel engine vehicles. One two story tall rectangular structure housing office space, a sales floor and warehouse and service garages is situated at the center of the property. The remainder of the lot is completed with paved asphalt, as shown on Figure 2.

The elevation of the property is approximately 445 feet above mean sea level with little observable topographic relief across the site. The water table at the site is approximately 6 to 10 feet below ground surface (bgs), with water table fluctuations on the order of 2 to 5 feet seasonally as influenced by changes in water levels of the Tanana and Chena Rivers. A 2014 groundwater elevation assessment performed on the wells on the subject site and the adjacent property at 2250 Van Horn Road concluded that groundwater flow in the area was generally to the east.

1.2. Site History

A subsurface soil investigation was conducted at the property in June 2003 by Travis Peterson Environmental Consulting, Inc., (TPECI) to support the sale of the property. At that time, a single rectangular structure was present along the eastern portion of the property. The field effort was conducted to investigate the potential for petroleum contamination in the soil from two underground storage tanks (USTs) and one aboveground storage tank (AST) located to the west of the building on the property.

Two environmental soil borings were advanced near the three storage tanks. A third boring was placed at the northeast corner of the lot. The borings were advanced to ten feet bgs. TPECI collected soil from each of the borings at the ground surface, at 5 feet bgs, and at 10 feet bgs to screen for petroleum contamination. The soil was screened for the presence of hydrocarbon concentrations using a photoionization detector (PID).

The PID device measures the presence of volatile concentrations in parts per million (ppm). TPECI assigned a screening level benchmark of 20 ppm to determine if the contaminant concentrations exceeded ADEC regulatory cleanup criteria for petroleum hydrocarbons. The PID screenings exceeded the 20-ppm benchmark, (evidencing the likely presence of soil contamination) in the surface samples of the two borings adjacent to the fuel tanks. TPECI concluded that the impacted soil was likely from a surface spill and not the result of a release (or releases) from one of the two USTs or AST onsite and therefore did not submit the samples for laboratory analysis. No further investigation or delineation of the detected contamination was performed at that time.

In 2012, Rescon performed an excavation on the adjacent property to the east at 2250 Van Horn Road (herein, "the 2250 property") to remove diesel-range organics (DRO) contamination in the vadose zone soil from 2 to 8 feet bgs. The DRO contaminated soil, which was impacting the groundwater, was located at the northwest corner of the 2250 property and extended west to the property boundary with the subject site.

The 2012 excavation effort on the 2250 property removed approximately 190 cubic yards of diesel-impacted soils. The excavation extended up to the property line with the subject site. The approximate extents of the excavation are shown on Figure 2. Soil samples collected from the sidewall of the excavation along the property boundary indicated that the impacted soil was also present at similar depths on the subject site (Rescon, 2014).

Rescon conducted a groundwater monitoring effort on the 2250 property in the fall of 2013, one year after the excavation effort. The results of the monitoring effort found that the groundwater was still impacted with DRO and that the groundwater flow direction was to the northeast. The northeasterly groundwater flow direction indicated that the source of the groundwater contamination was likely on the subject property (Rescon, 2014).

In 2014, Rescon continued excavation of DRO contaminated soil in the vadose zone along the eastern portion of the subject property. Approximately 300 cubic yards of contaminated soil were removed from the excavation and placed in a designated landfarm treatment area northeast of the site. The excavation efforts were ceased along the northern edge due to uncertainty of the extent of contamination in that direction. Confirmation samples were collected from the sidewalls and floor of the excavation. DRO was detected at concentrations exceeding the ADEC soil cleanup level (SCL) in the southeast corner of the excavation and along the north excavation wall. The excavation was backfilled with clean fill and resurfaced with asphalt (Rescon, 2016).

To define the vertical and lateral extent of remaining contamination, Rescon installed eight soil borings to 10 feet bgs. Contamination was found to extend approximately 50 feet north of the 2014 excavation extent and to range vertically from 3 to 8 feet bgs.

Three monitoring wells (MW-13, MW-14, and MW-15) were installed on the 2262 Van Horn property to augment the existing well network. Groundwater monitoring was conducted in October 2014 to assess contaminant concentrations and the groundwater gradient. DRO concentrations exceeded the ADEC groundwater cleanup level in 2 wells (MW-11 on the 2250 property and MW-15 on the subject property). The measured

groundwater elevations confirmed that the gradient flowed to the east at the site (Rescon, 2016).

In 2015, Rescon continued the DRO-contaminated-soil excavation north from the limit of the 2014 excavation and excavating an area approximately 50 feet by 60 feet to reach the lateral extent of the impacted soil. The excavation was extended vertically from the surface until contamination was no longer observed. Confirmation soil samples were collected from the excavation floor and sidewalls at the completion of the excavation effort. DRO concentrations were below the 250 mg/kg ADEC SCL in all samples (Rescon, 2016).

Approximately 350 cubic yards of contaminated soil were removed during the 2015 excavation and placed in a designated landfarm treatment area on the nearby Bloom Enterprises, Inc. (Bloom) property at 2443 Arvilla Street, southwest of the site. The approximate extents of the excavation are shown on Figure 3.

In October 2015, Rescon installed one monitoring well (MW-16) on the adjacent property to the east to evaluate potential down-gradient impact and to augment the existing groundwater well network. Following completion and development of the new well, groundwater samples were collected from each of the seven groundwater-monitoring wells for analysis of DRO. Concentrations of DRO were detected below ADEC cleanup levels in all seven monitoring wells (Rescon, 2016).

Groundwater monitoring activities were performed again in 2016, and the analytical results indicated an increase in DRO concentrations at each of the wells at the site. DRO was detected in each of the seven monitoring wells and exceeded the ADEC cleanup level at monitoring wells MW-11 and MW-15. The concentration of DRO in these two monitoring wells increased by approximately five times the levels reported in 2015 (Rescon, 2017).

Rescon sampled all seven monitoring wells in 2017. The results of the monitoring effort found that persistent DRO contaminated groundwater remained in two of the site wells MW-15 (onsite) and MW-11 (on the adjacent property). MW-11 is located to the east and down-gradient of MW-15 as shown on Figure 3. The analytical samples from the remaining wells at the site continued to show DRO concentrations below the ADEC cleanup level. Based on the consistent results of the surrounding wells (including MW-10, MW-13, MW-14 and MW-16) below ADEC cleanup levels, Rescon recommended the removal of those wells from the annual monitoring requirement. Although, MW-12 had also consecutively reported DRO concentrations below the cleanup level, as the down-gradient well, the continued monitoring at that location was necessary to track the migration of the contaminant plume.

Landfarm treatment area samples were collected in October 2017 using the multi-incremental sampling approach. Results from this sampling effort indicated that the tilled soil was below the site cleanup level of 250 mg/kg. This soil was approved for use as grading and backfilling material at the 2448 Arvilla Street Property (Rescon, 2018).

1.3. Contaminants of Potential Concern

The subsurface contamination at the site and the adjacent property is the result of a diesel fuel release. Soil and groundwater samples have been collected from both the subject site

and the 2250 property for analysis of DRO, residual range organics, gasoline range organics, benzene, toluene, ethylbenzene, and xylenes and polycyclic aromatic hydrocarbons. DRO is the only contaminant compound to be detected in either media above the respective ADEC cleanup criteria. As a result, DRO is the contaminant of potential concern for the site.

1.4. Project Objective

The objective of this cleanup effort was to continue to monitor the groundwater at the site and the adjacent 2250 property for evidence of DRO impact. Analytical results from the 2018 monitoring effort were used to identify potential trends in the contaminant concentrations at the site.

1.5. Regulatory Framework

The regulatory framework to guide the execution of this project was developed under consideration of the following regulations and guidance documents:

- 18 Alaska Administrative Code (AAC) 75, ADEC Oil and Other Hazardous Substances Pollution Control, as amended through October 2018 (ADEC, 2018a)
- 18 AAC 78, ADEC Underground Storage Tank Regulations, as amended through September 2018 (ADEC, 2018b)

The soil cleanup criteria for this project were determined using ADEC's Method 2 for soil (under 40-inch zone, migration to groundwater) as outlined in ADEC regulations (18 AAC 75.341, Tables B1 and B2). The groundwater samples were evaluated using the ADEC groundwater cleanup levels listed in Table C of 18 AAC 75.345.

2. FIELD ACTIVITIES

Rescon performed groundwater monitoring activities at the site in September 2018 in accordance with 2015 Cleanup Plan (Rescon, 2015). The fieldwork was performed by Zack Kirk, a Qualified Environmental Professional as defined in 18 AAC 75.333 (ADEC, 2018). A photo log depicting site conditions and the sampling activity can be found in Appendix A. Copies of the project field notes and groundwater-monitoring forms are included in Appendix B.

2.1. Groundwater Monitoring

The groundwater-monitoring program consisted of the collection of analytical samples for DRO analysis from three monitoring wells on site:

- 2250 Van Horn Rd: MW-11 and MW-12
- 2262 Van Horn Rd: MW-15

Purging of each well was performed in accordance with low-flow sampling techniques as outlined in the ADEC Field Sampling Guidance (ADEC, 2017). The groundwater was pumped to the surface using a variable speed submersible centrifugal pump and dedicated tubing. At the surface, the tubing was connected to a flow-through cell for measurement of water quality parameters using a YSI 556 meter (YSI). Groundwater quality parameters were monitored continuously with the YSI during purging. The pump speed was set to maintain a minimum water level drawdown of less than one tenth of a meter (< 0.1 m or < 0.33 feet). In accordance with low-flow sampling requirements, the monitoring wells were purged until three consecutive readings of water quality parameters, collected 3-5 minutes apart, met the following stability criteria:

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

All groundwater quality measurements and field observations were documented on the groundwater monitoring data sheets provided in Appendix B.

2.1.1. Groundwater Sampling

Rescon collected the groundwater samples for laboratory analysis following stabilization of the water quality parameters. Groundwater samples were collected for analysis of DRO concentrations. Samples were collected into laboratory-provided clean one-liter amber jars containing hydrochloric acid preservative. Once the containers were appropriately filled, the containers were capped, labeled and immediately placed into a cooler with sufficient ice to maintain the sample temperatures at $4^{\circ} \pm 2^{\circ}\text{C}$ until delivery to the analytical laboratory.

One field duplicate sample was collected from well MW-15 for monitoring field quality control purposes. The groundwater samples were submitted to SGS North America, Inc. (SGS), an ADEC-approved laboratory, under proper chain of custody procedures.

2.2. Investigation Derived Waste

The investigation derived waste (IDW) generated during the 2018 field events consisted of purge and decontamination water, disposable sampling equipment and personal protective equipment. The purge and decontamination water generated during the groundwater-sampling event was placed into a 55-gallon open-topped steel drum, appropriately labeled as non-hazardous waste, and staged onsite.

The remaining IDW, including disposable sample gloves, spent Ziploc bags, sample tubing, and miscellaneous paper waste was bagged and taped shut and placed into waste receptacles for disposal at the Fairbanks Municipal Landfill.

3. RESULTS

The groundwater analytical results are presented in Table 1 and Figure 3. The laboratory report for the analytical samples collected during the September 2018 field event is included in Appendix C.

Copies of the groundwater monitoring forms are provided in Appendix B. The field scientist did not encounter any difficulty attaining a stabilization of groundwater quality parameters during purging. Each well, exhibited minor water level drawdown during purging within the acceptable limits of less than 0.1 meter. Due to an elevated water table at the time of the sampling effort, the groundwater was approximately 1.2 feet higher at each of the well locations.

The laboratory analysis detected concentrations of DRO in the samples from each of the three well locations. As shown on Figure 3, the 2018 analytical results were higher at each of the locations from the levels reported in 2017, with the concentrations at MW-11 (4.21 milligrams per liter [mg/l]) and MW-15 (2.63 mg/l) exceeding the ADEC cleanup level of 1.5 mg/l. The DRO concentration at MW-12 remained below the respective ADEC cleanup level at 1.12 mg/l.

4. QUALITY ASSURANCE REVIEW

Rescon evaluated the precision, accuracy, sensitivity, representativeness, comparability, and completeness of the data by reviewing laboratory-supplied quality control (QC) information as well as conducting quality assurance checks on the data. Sample results were reported by SGS North America, Inc. in Anchorage, AK in work order 1189795. Rescon completed the ADEC data review checklist for the laboratory report. A copy of the ADEC Laboratory Data Review Checklist is provided in Appendix C. The following provides a brief summary of data quality for this project; QC anomalies not affecting data quality are discussed in the checklist, and are not described here.

Samples were received in good condition with cooler temperatures between 0 and 6 °C. There were no sample-handling discrepancies that affected data quality. Sample-custody paperwork was complete with the appropriate sample analysis documentation and handling signatures. The samples were all analyzed within the requisite holding times.

Overall laboratory QC information indicated sufficient analytical accuracy and precision and the data is considered complete (100%), with no results rejected in the course of the review.

5. CONCLUSIONS AND RECOMMENDATIONS

Rescon conducted the groundwater sampling effort in September 2018 to monitor the condition of the DRO-contaminated groundwater plume associated with the subject property. A summary of the findings and recommendations for the site is provided below.

The analytical results from the samples reported that concentrations of DRO were higher than the levels reported in 2017 at each well, and exceeded the ADEC cleanup level in monitoring wells MW-11 and MW-15. The justification for the elevated DRO concentrations in 2018 is unclear and further monitoring is recommended to assess the contaminant trends with adequate confidence. However, the elevated results may have been the result of an abnormally high groundwater table at the time of the sampling effort. The groundwater level was over 1 foot higher than the levels measured in 2017 at each well. As a result, it is possible that the heightened water table during the summer of 2018 saturated areas of remnant DRO-impacted soil dissolving the contaminants into the groundwater and increasing the soluble contaminant levels in the groundwater.

Despite the increase in DRO levels in 2018, the concentration at MW-12, the down-gradient well, remained below ADEC cleanup levels. The monitoring results from that well over the last five years continue to evidence that contaminated groundwater is not migrating down-gradient of the impacted wells. However, it is recommended that groundwater monitoring continue until the contamination attenuates to concentrations below the ADEC cleanup level on the adjacent down-gradient property (i.e. the point of compliance for the site).

6. REFERENCES

- ADEC, 2017. *Field Sampling Guidance*. August.
- ADEC, 2018a. Alaska Administrative Code (AAC) Chapter 75 – *Oil and hazardous Substances Pollution Control*. November.
- ADEC, 2018b. 18 AAC 78, *ADEC Underground Storage Tank Regulations*. June.
- Rescon Alaska, LLC. (Rescon), 2017. *2016 Landfarm and Groundwater Monitoring Report*, 2262 Van Horn Road, Fairbanks, Alaska. February.
- Rescon, 2016. *2015 Remedial Excavation and Groundwater Monitoring Report*, 2262 Van Horn Road, Fairbanks, Alaska. January 26.
- Rescon, 2015. *2015 Cleanup Plan, Final*, 2262 Van Horn Road, Fairbanks, Alaska. May, 29.
- Rescon, 2014. *Excavation and Investigation Report, Final*, 2262 Van Horn Road, Fairbanks, Alaska. December 16.

TABLES

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Table 1
 2018 Groundwater Sample Analytical Results
 Cymbaluk Investments, LLC
 Fairbanks, Alaska

Sample ID:			MW-11-2018	MW-12-2018	MW-15-2018	FD-1-2018 (Duplicate of MW15)
Date:			9/24/18	9/24/18	9/24/18	9/24/18
Analyte	Analytical Method	ADEC Groundwater Cleanup Level ¹				
Diesel Range Organics	AK102	1.5	<u>4.21</u>	1.12	<u>2.63</u>	<u>2.8</u>
Residual Range Organics	AK103	1.1	<u>1.68</u>	<u>1.39</u>	0.983	0.649

¹ 18 AAC 75, Table C, ADEC Groundwater Cleanup Levels (January 2016).

Bolded values are reported detected results.

Bolded red and underlined values are detected results that exceed ADEC cleanup levels.

ADEC = Alaska Department of Environmental Conservation

mg/l = milligrams per liter

J = estimated value, detected below the reporting limit

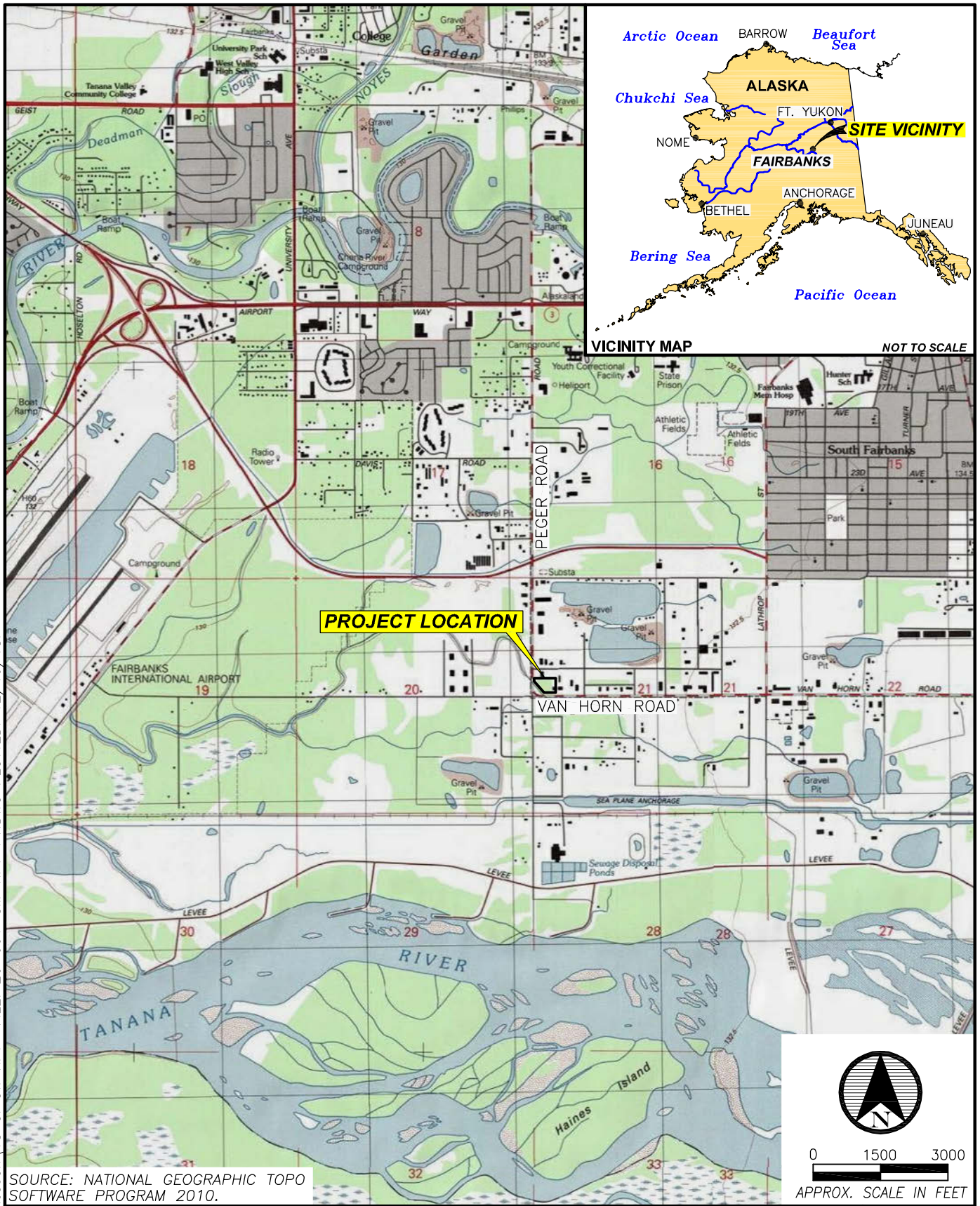
U = Non-detect



FIGURES

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PATH 18 Dwg\18 Rescon\18 CI GW RPT FILE: 20-001-GM-RPT-F1.DWG PLOTTED: 12/19/18



SOURCE: NATIONAL GEOGRAPHIC TOPO SOFTWARE PROGRAM 2010.

DATE: DEC. 2018
 REV.: -
 CHKD: K.A.
 DRAWN: C.E.H.
 PROJ. No.: 20-001

RESCON
alaska
1120 HUFFMAN ROAD
SUITE 24-431
ANCHORAGE ALASKA 99515
907-317-2473

SITE LOCATION MAP

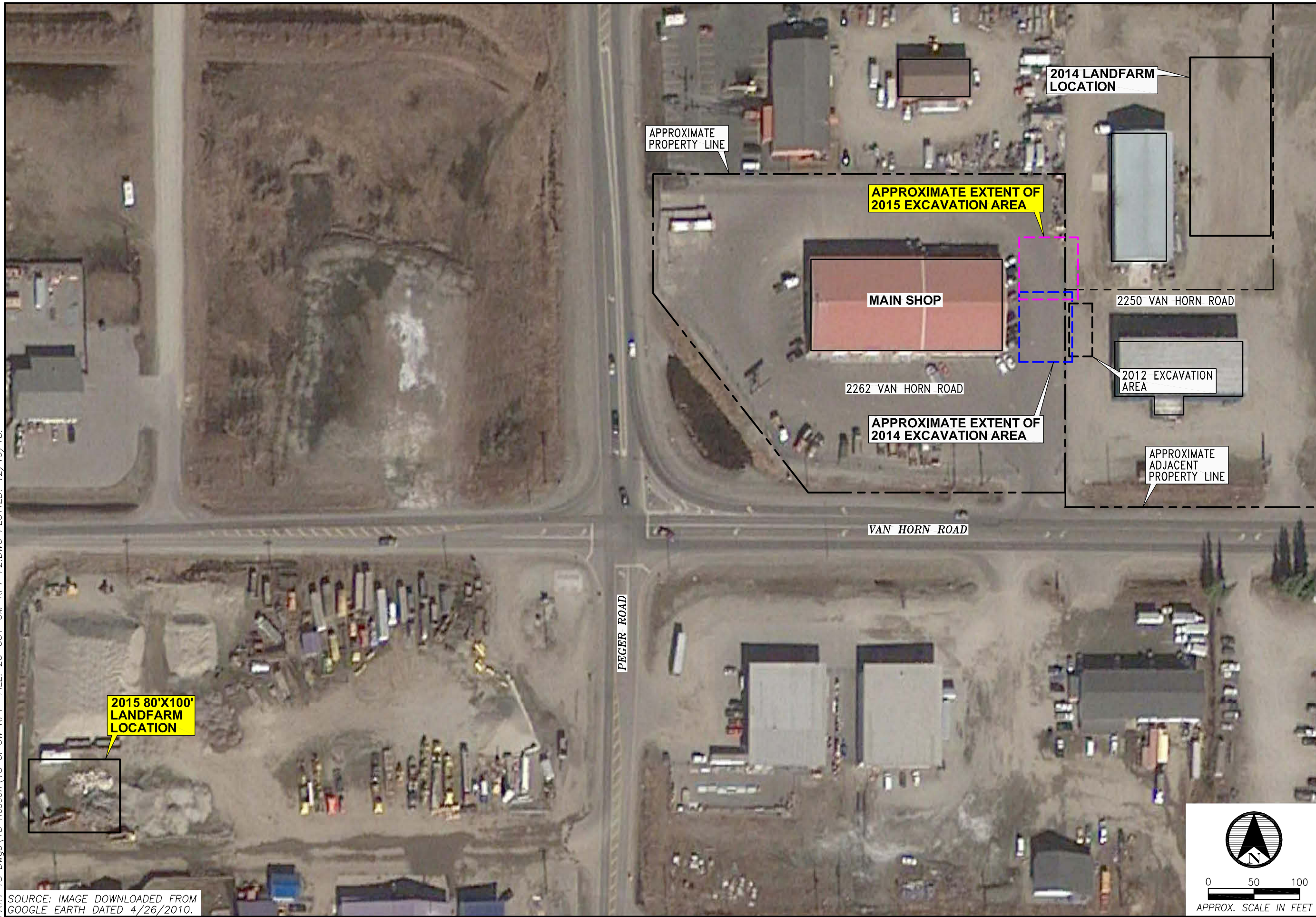
2018 GROUNDWATER MONITORING REPORT
 CYMBALUK INVESTMENTS, LLC
 2262 VAN HORN ROAD
 Fairbanks, Alaska

FIGURE

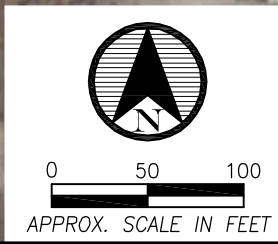
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PATH: 18_Dwgs\18_Rescon\18_CI_GW_RPT_FILE: 20-001-GM-RPT-F2.DWG PLOTTED: 12/19/18.

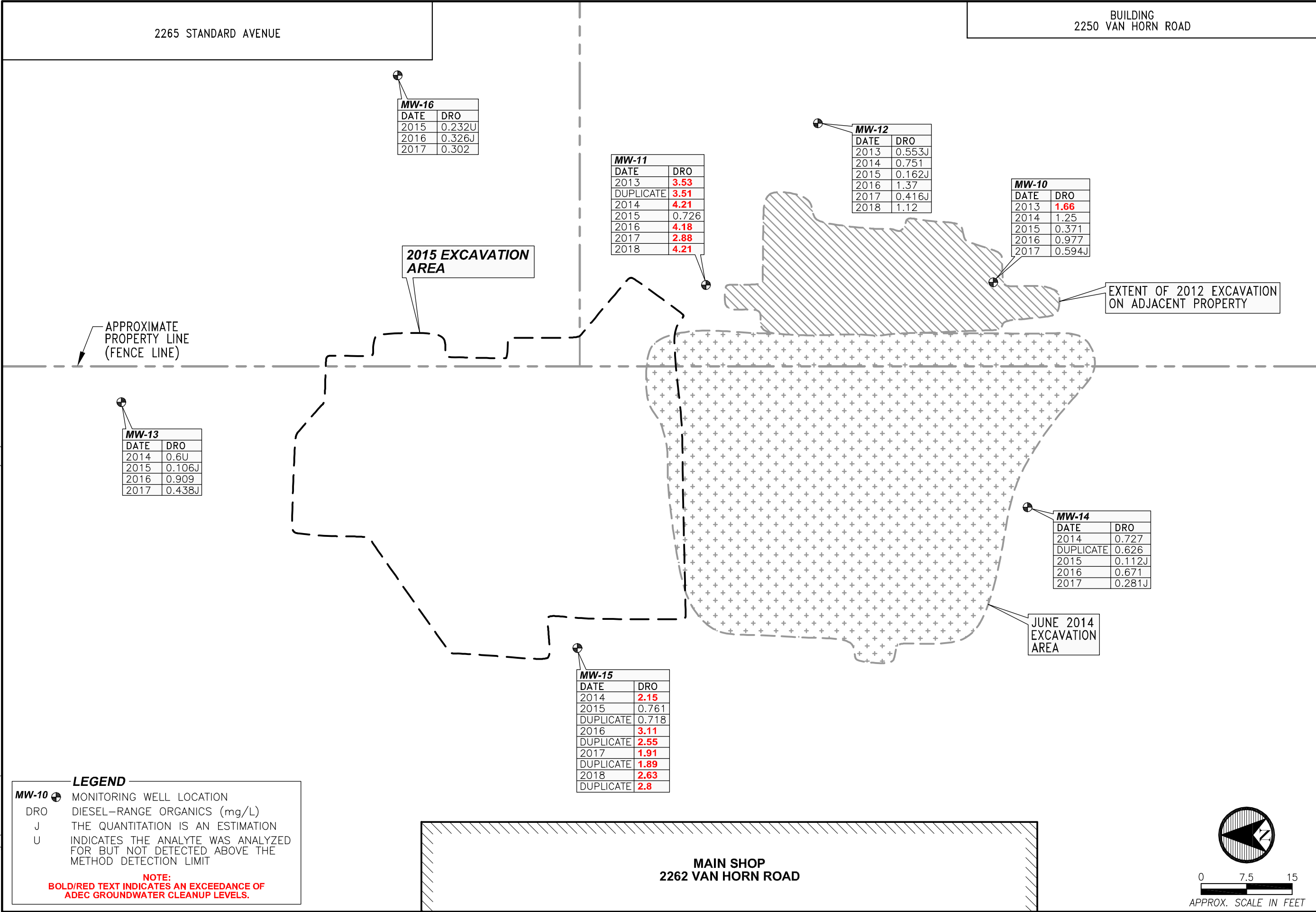
SOURCE: IMAGE DOWNLOADED FROM GOOGLE EARTH DATED 4/26/2010.



SITE PLAN		FIGURE 2
2018 GROUNDWATER MONITORING REPORT CYMBALUK INVESTMENTS, LLC 2262 VAN HORN ROAD Fairbanks, Alaska		
RESCON alaska 1120 HUFFMAN ROAD SUITE 24431 ANCHORAGE ALASKA 99515 907-317-2473		DATE: DEC. 2018 REV.: - CHKD: K.A. DRAWN: C.E.H. PROJ. No.: 20-001



PATH: 18_Dwgs\18_Rescon\18_CI_GW_RPT_FILE: 20-001-GM-RPT-F3.DWG PLOTTED: 12/19/18.



MW-16

DATE	DRO
2015	0.232U
2016	0.326J
2017	0.302

MW-11

DATE	DRO
2013	3.53
2014	4.21
2015	0.726
2016	4.18
2017	2.88
2018	4.21

MW-12

DATE	DRO
2013	0.553J
2014	0.751
2015	0.162J
2016	1.37
2017	0.416J
2018	1.12

MW-10

DATE	DRO
2013	1.66
2014	1.25
2015	0.371
2016	0.977
2017	0.594J

MW-13

DATE	DRO
2014	0.6U
2015	0.106J
2016	0.909
2017	0.438J

MW-14

DATE	DRO
2014	0.727
DUPLICATE	0.626
2015	0.112J
2016	0.671
2017	0.281J

MW-15

DATE	DRO
2014	2.15
2015	0.761
DUPLICATE	0.718
2016	3.11
DUPLICATE	2.55
2017	1.91
DUPLICATE	1.89
2018	2.63
DUPLICATE	2.8

LEGEND

MW-10 ⊕ MONITORING WELL LOCATION
 DRO DIESEL-RANGE ORGANICS (mg/L)
 J THE QUANTITATION IS AN ESTIMATION
 U INDICATES THE ANALYTE WAS ANALYZED FOR BUT NOT DETECTED ABOVE THE METHOD DETECTION LIMIT

NOTE:
BOLD/RED TEXT INDICATES AN EXCEEDANCE OF ADEC GROUNDWATER CLEANUP LEVELS.

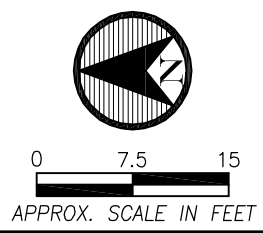
FIGURE
3

GROUNDWATER SAMPLING RESULTS

2018 GROUNDWATER MONITORING REPORT
 CYMBALUK INVESTMENTS, LLC
 2262 VAN HORN ROAD
 Fairbanks, Alaska

RESCON alaska
 1120 HUFFMAN ROAD
 SUITE 24-431
 ANCHORAGE ALASKA 99515
 907-317-2473

DATE: DEC. 2018
 REV.: -
 CHKD: K.A.
 DRAWN: C.E.H.
 PROJ. No.: 20-001



MAIN SHOP
 2262 VAN HORN ROAD

APPENDIX A

Photograph Log

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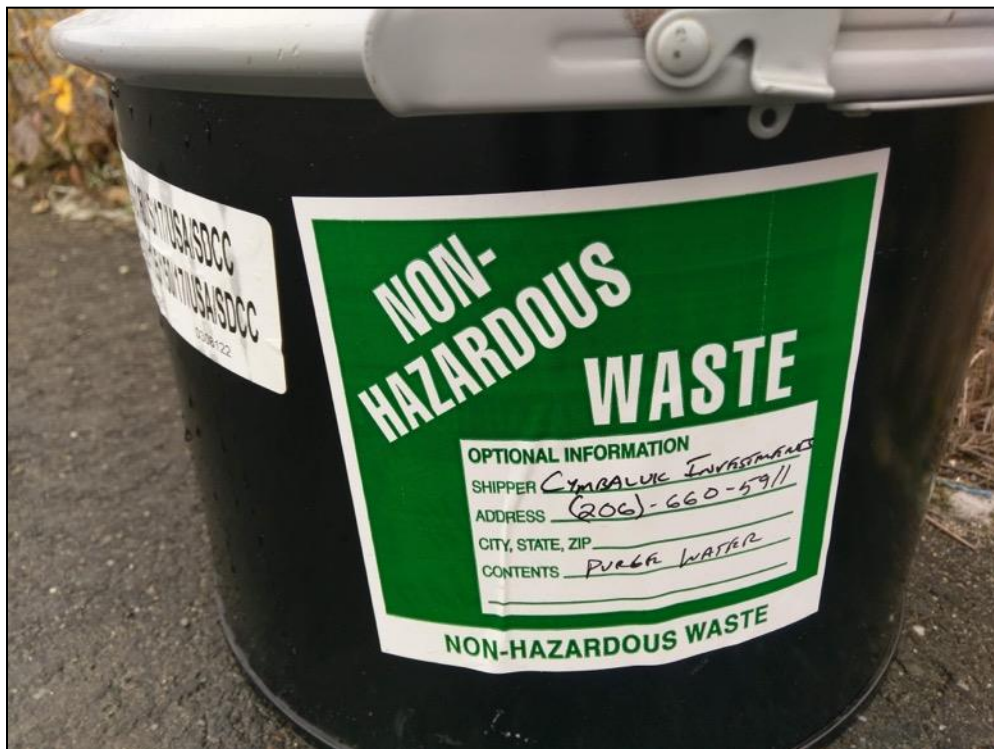
PHOTOGRAPH 1: GROUNDWATER SAMPLE LOCATION MW-11. 9/24/2018.



**PHOTOGRAPH 2: GROUNDWATER SAMPLE LOCATION MW-12; LOOKING WEST.
9/24/2018.**



PHOTOGRAPH 3: GROUNDWATER SAMPLE LOCATION MW-15. 9/24/2018.



PHOTOGRAPH 4: PURGE WATER DRUM WITH NON-HAZ LABEL. 9/24/2018.

APPENDIX B

Field Notes

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KINWORTH ALASKA

E/K

20-001

SEPTEMBER 24, 2018

~40% OVERCAST

1200 - ARRIVE ON SITE, NOTIFY

KINWORTH STAFF AND ADJACENT
PROPERTY OF ~~FEATURED~~^{PK} GROUNDWATER
SAMPLING ACTIVITY.

1230 - BEGIN LOCATING OFF-SITE WELLS
ON FAIRBANKS WELDING PROPERTY.

1300 - BEGIN GROUNDWATER MONITORING
EFFORT. SEE GROUNDWATER
MONITORING DATA SHEETS FOR
DETAILS.

1700 - COMPLETE SAMPLING EFFORT
CLEAN UP AND DEPART SITE.
- STAGE PURGE WATER ~~DRUM~~
ALONG FENCE AT NORTHEAST
EDGE OF PROPERTY.
- WILL SCHEDULE DRUM PICKUP
AND DISPOSAL UPON RECEIPT
OF ANALYTICAL REPORT.

1800 - SAMPLE MANAGEMENT.

1900 - END OF DAY

Scale: 1 square = _____

1/4 in scale

GROUNDWATER SAMPLE DATA SHEET

Project Number: 20-001 Sample Location (ie. MW1): MW-15
 Project Name: KIMBERLY ALASKA FBA Sample ID: MW-15-18
 Client: CYMBALIC INVESTMENTS Date Sample Collected: 9/24/18
 Sampler: Z. KERR Time sampled: 1550

Well Information

Groundwater: Yes Casing Diameter (in): 2" a) Well Depth (ft): 11.08
 b) Water Depth (ft): 7.00
 Other: _____ c) Water Column (ft): 3.88
 d) Pump Depth (ft): 8.00'

FIELD MEASUREMENTS

Time	Volume (gallons)	pH	Conductivity (mS)	Temperature (C)	Color	Turbidity	Redox	Dissolved O ₂	DTW
1525	0.2	6.46	1.014	7.86	↓	LOW	80.9	1.47	7.33
1527	0.4	6.54	1.014	8.19	↓	↓	61.3	1.03	7.33
1530	0.6	6.56	0.998	8.43	↓	↓	51.4	0.93	7.35
1534	0.9	6.51	0.997	8.59	↓	↓	55.2	0.75	7.33
1538	1.1	6.52	0.944	8.80	↓	↓	41.4	0.76	7.33
1544	1.4	6.52	0.941	8.86	↓	↓	32.8	0.76	7.33
1547	1.6	6.51	0.940	8.92	↓	↓	34.8	0.71	7.33

Total Volume Purged: 1.6 GALLONS Free Product (y/n): N/A
 Odor: _____ Sheen (y/n): N/A

Purge Method (disposable bailer, peristaltic pump, submersible pump, etc.)

Sample Method (disposable bailer, peristaltic pump, submersible pump, etc.)

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.)

GOOD CONDITION

Remarks (well recovery, unusual conditions/observations):

GOOD RECOVERY

Duplicate Sample ID: FD-1-18 @ 1800

Split Sample ID: _____

Signed: _____

Date: 9/24/18

Signed/reviewer: _____

Date: _____

GROUNDWATER SAMPLE DATA SHEET

Project Number: 20-001 Sample Location (ie. MW1): MW-12
 Project Name: KANNOOTIE ALASKA FBA Sample ID: MW-12-18
 Client: CAMBALUK INVESTMENTS Date Sample Collected: 9/24/18
 Sampler: Z. KERK Time sampled: 1415

Well Information

Groundwater: Yes Casing Diameter (in): 2" a) Well Depth (ft): 10.94
 b) Water Depth (ft): 6.93
 Other: _____ c) Water Column (ft): 4.01
 d) Pump Depth (ft): 7.50'

FIELD MEASUREMENTS

Time	Volume (gallons)	pH	Conductivity (mS)	Temperature (C)	Color	Turbidity	Redox	Dissolved O ₂	DTW
1355	0.2	6.27	0.604	7.34	↓	Low	176.5	7.00 ^{2.57}	6.95 7.00
1358	0.4	6.37	0.626	6.81	↓	↓	146.2	7.10.07	7.10
1402	0.6	6.75	0.656	6.04	↓	↓	48.6	7.10.09	7.10
1406	0.8	6.87	0.658	6.04	↓	↓	188.	7.10.09	7.10
1409	1.0	6.90	0.657	6.12	↓	↓	-2.3	7.10.09	7.10
1412	1.2	6.92	0.656	6.15	↓	↓	-8.7	7.10.09	7.10

Total Volume Purged: 1.025 gal Free Product (y/n):

Odor: _____ Sheen (y/n):

Purge Method (disposable bailer, peristaltic pump, submersible pump, etc.)

Sample Method (disposable bailer, peristaltic pump, submersible pump, etc.)

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.)

Good Condition

Remarks (well recovery, unusual conditions/observations):

Good Recovery

Duplicate Sample ID: _____

Split Sample ID: _____

Signed: [Signature]

Date: 9/24/18

Signed/reviewer: _____

Date: _____

GROUNDWATER SAMPLE DATA SHEET

Project Number: 20-001 Sample Location (ie. MW1): MW-11
 Project Name: Kennedy AK FBX Sample ID: MW-11-18
 Client: CAMBALVA Investments Date Sample Collected: 9/24/18
 Sampler: Z. KERIC Time sampled: 1450

Well Information

Groundwater: Yes Casing Diameter (in): 2" a) Well Depth (ft): 11.00
 b) Water Depth (ft): 6.78
 Other: _____ c) Water Column (ft): 4.22
 d) Pump Depth (ft): 7.25'

FIELD MEASUREMENTS

Time	Volume (gallons)	pH	Conductivity (mS)	Temperature (C)	Color	Turbidity	Redox	Dissolved O ₂	DTW
1430	0.2	6.30	0.595	6.06	↓	Low	105.5	1.87	6.88
1435	0.5	6.44	0.596	6.48	↓	↓	74.1	0.91	6.88
1438	0.7	6.48	0.595	6.66	↓	↓	62.9	0.82	6.92
1441	0.9	6.52	0.596	6.94	↓	↓	50.2	0.72	6.93
1444	1.1	6.55	0.595	7.23	↓	↓	40.7	0.73	6.94
1447	1.3	6.55	0.599	7.37	↓	↓	35.8	0.74	6.93

Total Volume Purged: 1.3 gallons Free Product (y/n): N
 Odor: _____ Sheen (y/n): N

Purge Method (disposable bailer, peristaltic pump, submersible pump, etc.)

Sample Method (disposable bailer, peristaltic pump, submersible pump, etc.)

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.)

Good Condition

Remarks (well recovery, unusual conditions/observations):

Good Recovery

Duplicate Sample ID: _____
 Split Sample ID: _____

Signed: _____ Date: _____
 Signed/reviewer: _____ Date: _____

APPENDIX C

Laboratory Reports and ADEC Laboratory Data Review Checklists

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Laboratory Report of Analysis

To: ResCon Alaska
1175 Oceanview Dr.
Anchorage, AK 99515
(360)761-4269

Report Number: **1189795**

Client Project: **Kienworth Alaska**

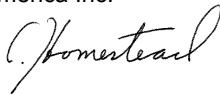
Dear Zack Kirk,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Chuck at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.



SGS North America
Environmental Services - Alaska Division
General Manager

Charles Homestead
2018.10.03 14:03:55 -08'00'

Chuck Homestead
Project Manager
Charles.Homestead@sgs.com

Date

Case Narrative

SGS Client: **ResCon Alaska**
SGS Project: **1189795**
Project Name/Site: **Kienworth Alaska**
Project Contact: **Zack Kirk**

Refer to sample receipt form for information on sample condition.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 10/03/2018 8:44:39AM

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8015C, 8021B, 8082A, 8260C, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Analytical Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
MW-12-18	1189795001	09/24/2018	09/25/2018	Water (Surface, Eff., Ground)
MW-11-18	1189795002	09/24/2018	09/25/2018	Water (Surface, Eff., Ground)
MW-15-18	1189795003	09/24/2018	09/25/2018	Water (Surface, Eff., Ground)
FD-1-18	1189795004	09/24/2018	09/25/2018	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
AK102	DRO/RRO Low Volume Water
AK103	DRO/RRO Low Volume Water

Print Date: 10/03/2018 8:44:42AM

Detectable Results Summary

Client Sample ID: **MW-12-18**

Lab Sample ID: 1189795001

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	1.12	mg/L
Residual Range Organics	1.39	mg/L

Client Sample ID: **MW-11-18**

Lab Sample ID: 1189795002

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	4.21	mg/L
Residual Range Organics	1.68	mg/L

Client Sample ID: **MW-15-18**

Lab Sample ID: 1189795003

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	2.63	mg/L
Residual Range Organics	0.983	mg/L

Client Sample ID: **FD-1-18**

Lab Sample ID: 1189795004

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	2.80	mg/L
Residual Range Organics	0.649	mg/L



Results of MW-12-18

Client Sample ID: MW-12-18
Client Project ID: Kienworth Alaska
Lab Sample ID: 1189795001
Lab Project ID: 1189795

Collection Date: 09/24/18 14:15
Received Date: 09/25/18 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC14670
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 10/02/18 14:07
Container ID: 1189795001-A

Prep Batch: XXX40623
Prep Method: SW3520C
Prep Date/Time: 10/01/18 08:00
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC14670
Analytical Method: AK103
Analyst: CMS
Analytical Date/Time: 10/02/18 14:07
Container ID: 1189795001-A

Prep Batch: XXX40623
Prep Method: SW3520C
Prep Date/Time: 10/01/18 08:00
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL



Results of MW-11-18

Client Sample ID: MW-11-18
Client Project ID: Kienworth Alaska
Lab Sample ID: 1189795002
Lab Project ID: 1189795

Collection Date: 09/24/18 14:50
Received Date: 09/25/18 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC14670
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 10/02/18 14:17
Container ID: 1189795002-A

Prep Batch: XXX40623
Prep Method: SW3520C
Prep Date/Time: 10/01/18 08:00
Prep Initial Wt./Vol.: 246 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC14670
Analytical Method: AK103
Analyst: CMS
Analytical Date/Time: 10/02/18 14:17
Container ID: 1189795002-A

Prep Batch: XXX40623
Prep Method: SW3520C
Prep Date/Time: 10/01/18 08:00
Prep Initial Wt./Vol.: 246 mL
Prep Extract Vol: 1 mL



Results of MW-15-18

Client Sample ID: MW-15-18
Client Project ID: Kienworth Alaska
Lab Sample ID: 1189795003
Lab Project ID: 1189795

Collection Date: 09/24/18 15:50
Received Date: 09/25/18 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC14670
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 10/02/18 14:27
Container ID: 1189795003-A

Prep Batch: XXX40623
Prep Method: SW3520C
Prep Date/Time: 10/01/18 08:00
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC14670
Analytical Method: AK103
Analyst: CMS
Analytical Date/Time: 10/02/18 14:27
Container ID: 1189795003-A

Prep Batch: XXX40623
Prep Method: SW3520C
Prep Date/Time: 10/01/18 08:00
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL



Results of **FD-1-18**

Client Sample ID: **FD-1-18**
Client Project ID: **Kienworth Alaska**
Lab Sample ID: 1189795004
Lab Project ID: 1189795

Collection Date: 09/24/18 18:00
Received Date: 09/25/18 08:57
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	2.80	0.600	0.180	mg/L	1		10/02/18 14:38
Surrogates							
5a Androstane (surr)	87.9	50-150		%	1		10/02/18 14:38

Batch Information

Analytical Batch: XFC14670
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 10/02/18 14:38
Container ID: 1189795004-A

Prep Batch: XXX40623
Prep Method: SW3520C
Prep Date/Time: 10/01/18 08:00
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	0.649	0.500	0.150	mg/L	1		10/02/18 14:38
Surrogates							
n-Triacontane-d62 (surr)	101	50-150		%	1		10/02/18 14:38

Batch Information

Analytical Batch: XFC14670
Analytical Method: AK103
Analyst: CMS
Analytical Date/Time: 10/02/18 14:38
Container ID: 1189795004-A

Prep Batch: XXX40623
Prep Method: SW3520C
Prep Date/Time: 10/01/18 08:00
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL



Method Blank

Blank ID: MB for HBN 1786987 [XXX/40623]
Blank Lab ID: 1479386

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1189795001, 1189795002, 1189795003, 1189795004

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	0.300U	0.600	0.180	mg/L
Surrogates				
5a Androstane (surr)	99.7	60-120		%

Batch Information

Analytical Batch: XFC14670
Analytical Method: AK102
Instrument: Agilent 7890B F
Analyst: CMS
Analytical Date/Time: 10/2/2018 10:18:00AM

Prep Batch: XXX40623
Prep Method: SW3520C
Prep Date/Time: 10/1/2018 8:00:41AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 10/03/2018 8:44:47AM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1189795 [XXX40623]
Blank Spike Lab ID: 1479387
Date Analyzed: 10/02/2018 10:28

Spike Duplicate ID: LCSD for HBN 1189795 [XXX40623]
Spike Duplicate Lab ID: 1479388
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1189795001, 1189795002, 1189795003, 1189795004

Results by AK102

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	20	19.4	97	20	20.2	101	(75-125)	4.20	(< 20)
Surrogates									
5a Androstane (surr)	0.4	103	103	0.4	110	110	(60-120)	6.80	

Batch Information

Analytical Batch: **XFC14670**
Analytical Method: **AK102**
Instrument: **Agilent 7890B F**
Analyst: **CMS**

Prep Batch: **XXX40623**
Prep Method: **SW3520C**
Prep Date/Time: **10/01/2018 08:00**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

Print Date: 10/03/2018 8:44:48AM



Method Blank

Blank ID: MB for HBN 1786987 [XXX/40623]
Blank Lab ID: 1479386

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1189795001, 1189795002, 1189795003, 1189795004

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	0.250U	0.500	0.150	mg/L
Surrogates				
n-Triacontane-d62 (surr)	112	60-120		%

Batch Information

Analytical Batch: XFC14670
Analytical Method: AK103
Instrument: Agilent 7890B F
Analyst: CMS
Analytical Date/Time: 10/2/2018 10:18:00AM

Prep Batch: XXX40623
Prep Method: SW3520C
Prep Date/Time: 10/1/2018 8:00:41AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 10/03/2018 8:44:49AM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1189795 [XXX40623]
Blank Spike Lab ID: 1479387
Date Analyzed: 10/02/2018 10:28

Spike Duplicate ID: LCSD for HBN 1189795 [XXX40623]
Spike Duplicate Lab ID: 1479388
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1189795001, 1189795002, 1189795003, 1189795004

Results by AK103

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Residual Range Organics	20	19.5	98	20	20.2	101	(60-120)	3.50	(< 20)

Surrogates

n-Triacontane-d62 (surr)	0.4	105	105	0.4	117	117	(60-120)	10.50	
--------------------------	-----	-----	-----	-----	-----	-----	------------	-------	--

Batch Information

Analytical Batch: **XFC14670**
Analytical Method: **AK103**
Instrument: **Agilent 7890B F**
Analyst: **CMS**

Prep Batch: **XXX40623**
Prep Method: **SW3520C**
Prep Date/Time: **10/01/2018 08:00**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

Print Date: 10/03/2018 8:44:50AM

1189795



Locations Nationwide
Alaska
Maryland
New Jersey
North Carolina
West Virginia

www.us.sgs.com

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REVIEWED ket

Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.

Page 1 of 1

CLIENT: Rescon Alaska

CONTACT: Zack Keck (619) 838-1657

PROJECT NAME: SEVENTH ALASKA PERMIT#: 20-001

REPORTS TO: Zack Keck ARKORD RESCON ALASKA, ceo

INVOICE TO: Zack Keck (Rescon) P.O. #: 20-001

PHONE NO: (619) 838-1657

PROJECT PWSID/PERMIT#: 20-001

E-MAIL:

QUOTE #:

RESERVED for lab use

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX CODE
1	MAW-12-18	9/24/18	1415	W
2	MW-11-18		1450	
3	MW-15-18		1530	
4	FD-1-18		1800	

Section 3

#	Type	CONTAINER	Preservative	REMARKS/LOC ID
1	C			
2	G			
3				
4				
5				

Section 4

Section 4 DOD Project? Yes No

Cooler ID: EDD

Requested Turnaround Time and/or Special Instructions: STAND BY TAT

Section 5

Relinquished By: (1) [Signature] Received By: [Signature] Date: 9/24/18 Time: 1030

Relinquished By: (2) [Signature] Received By: [Signature] Date: 9/24/18 Time: 1600

Relinquished By: (3) [Signature] Received By: [Signature] Date: 9/25/18 Time: 8:57

Relinquished By: (4) [Signature] Received By: [Signature] Date: 9/25/18 Time: 8:57

Temp Blank °C: Chilled or Ambient []

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Data Deliverable Requirements: EDD

(See attached Sample Receipt Form)

[] 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
[] 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

http://www.sgs.com/terms-and-conditions

TEMP: 2.7 DHS
ANCH: CS: IF LB

F083-Kit_Request_and_COC_Templates-Blank
Revised 2013-03-24



e-Sample Receipt Form

SGS Workorder #:

1189795



1 1 8 9 7 9 5

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		n/a Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	yes	1-front, 1-back
COC accompanied samples?	yes	
Temperature blank compliant* (i.e., 0-6 °C after CF)?	n/a	**Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required
	yes	Cooler ID: 1 @ 2.7 °C Therm. ID: D45
	n/a	Cooler ID: @ °C Therm. ID:
	n/a	Cooler ID: @ °C Therm. ID:
	n/a	Cooler ID: @ °C Therm. ID:
	n/a	Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	n/a	
If <0°C, were sample containers ice free?	n/a	
<p>If samples received <u>without</u> a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "COOLER TEMP" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled".</p> <p>Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.</p>		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	yes	
Do samples match COC** (i.e., sample IDs, dates/times collected)?	yes	
**Note: If times differ <1hr, record details & login per COC.		
Were analyses requested unambiguous? (i.e., method is specified for analyses with >1 option for analysis)	yes	
Were proper containers (type/mass/volume/preservative***) used?	yes	n/a ***Exemption permitted for metals (e.g. 200.8/6020A).
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	n/a	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	n/a	
Were all soil VOAs field extracted with MeOH+BFB?	n/a	
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.		
Additional notes (if applicable):		



Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1189795001-A	HCL to pH < 2	OK			
1189795001-B	HCL to pH < 2	OK			
1189795002-A	HCL to pH < 2	OK			
1189795002-B	HCL to pH < 2	OK			
1189795003-A	HCL to pH < 2	OK			
1189795003-B	HCL to pH < 2	OK			
1189795004-A	HCL to pH < 2	OK			
1189795004-B	HCL to pH < 2	OK			

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

Laboratory Data Review Checklist

Completed by:

Title: Date:

CS Report Name: Report Date:

Consultant Firm:

Laboratory Name: Laboratory Report Number:

ADEC File Number: ADEC RecKey Number:

1. Laboratory

- a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
 Yes No NA (Please explain.) Comments:

- 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 NA (Please explain.) Comments:

2. Chain of Custody (COC)

- a. COC information completed, signed, and dated (including released/received by)?
 Yes No NA (Please explain.) Comments:

- b. Correct analyses requested?
 Yes No NA (Please explain.) Comments:

3. Laboratory Sample Receipt Documentation

- a. Sample/cooler temperature documented and within range at receipt ($4^{\circ} \pm 2^{\circ} \text{C}$)?
 Yes No NA (Please explain.) Comments:

- b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?
 Yes No NA (Please explain.) Comments:

- c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?
 Yes No NA (Please explain.) Comments:

Samples were received in good condition.

- 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 NA (Please explain.) Comments:

There were no sample-receiving discrepancies.

- e. Data quality or usability affected? (Please explain.) Comments:

Data quality and usability were not affected.

4. Case Narrative

- a. Present and understandable?
 Yes No NA (Please explain.) Comments:

- b. Discrepancies, errors or QC failures identified by the lab?
 Yes No NA (Please explain.) Comments:

- c. Were all corrective actions documented?
 Yes No NA (Please explain.) Comments:

No additional corrective actions were identified in the case narrative.

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

There was no effect on data quality or usability

5. Samples Results

- a. Correct analyses performed/reported as requested on COC?
 Yes No NA (Please explain.) Comments:

- b. All applicable holding times met?
 Yes No NA (Please explain.) Comments:

c. All soils reported on a dry weight basis?
 Yes No NA (Please explain.)

Comments:

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?
 Yes No NA (Please explain.)

Comments:

e. Data quality or usability affected?

Comments:

There was no effect on data quality or usability.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?
 Yes No NA (Please explain.)

Comments:

ii. All method blank results less than LOQ?
 Yes No NA (Please explain.)

Comments:

iii. If above LOQ, what samples are affected?

Comments:

N/A

iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined?
 Yes No NA (Please explain.)

Comments:

v. Data quality or usability affected? (Please explain.)

Comments:

Data quality and usability were not affected.

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 NA (Please explain.)

Comments:

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

Yes No NA (Please explain.) Comments:

No metals/inorganic analyses were performed.

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

Yes No NA (Please explain.) Comments:

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

Yes No NA (Please explain.) Comments:

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

Comments:

All %R and RPDs were reported within laboratory limits.

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

Yes No NA (Please explain.) Comments:

See above.

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

Comments:

Data quality and usability were not affected.

c. Surrogates – Organics Only

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

Yes No NA (Please explain.) Comments:

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

Yes No NA (Please explain.) Comments:

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

Yes No NA (Please explain.) Comments:

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

Comments:

Data quality and usability were not affected.

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

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

Yes No NA (Please explain.) Comments:

No volatile samples were submitted or analyzed for this sample delivery group.

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 NA (Please explain.) Comments:

One cooler was used to transport all of the samples.

iii. All results less than LOQ?

Yes No NA (Please explain.) Comments:

iv. If above LOQ, what samples are affected?

Comments:

N/A

v. Data quality or usability affected? (Please explain.)

Comments:

Data quality and usability were unaffected.

e. Field Duplicate

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

Yes No NA (Please explain.) Comments:

ii. Submitted blind to lab?

X Yes No NA (Please explain.) Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs?
(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

X Yes No NA (Please explain.) Comments:

Field duplicate pair MW-15/FD-1-18 was analyzed for DRO by AK102. Calculated RPDs for both duplicate pairs were less than the recommended 30% for waters.

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

Data quality or usability was not affected.

Comments:

f. Decontamination or Equipment Blank (If not used explain why).

Yes No X NA (Please explain.) Comments:

Samples were collected using disposable sampling equipment; no equipment blanks were necessary.

i. All results less than PQL?

Yes No X NA (Please explain.) Comments:

ii. If above PQL, what samples are affected?

Comments:

Not applicable (see above)

iii. Data quality or usability affected? (Please explain.)

Comments:

Not applicable (see above)

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

a. Defined and appropriate?

Yes X No NA (Please explain.) Comments:

