



FINAL

03 FEBRUARY 2017

FORT LEWIS AGREED ORDER GROUNDWATER MONITORING REPORT – 2014

BUILDING 4131 FORMER UST SITE (AOC 8-2)

BUILDING A0111 FORMER UST SITE (AOC 8-4)

BUILDING A1033 FORMER UST SITE (AOC 9-2)

GRAY ARMY FUEL FACILITY (AOC 10-8)

Joint Base Lewis-McChord

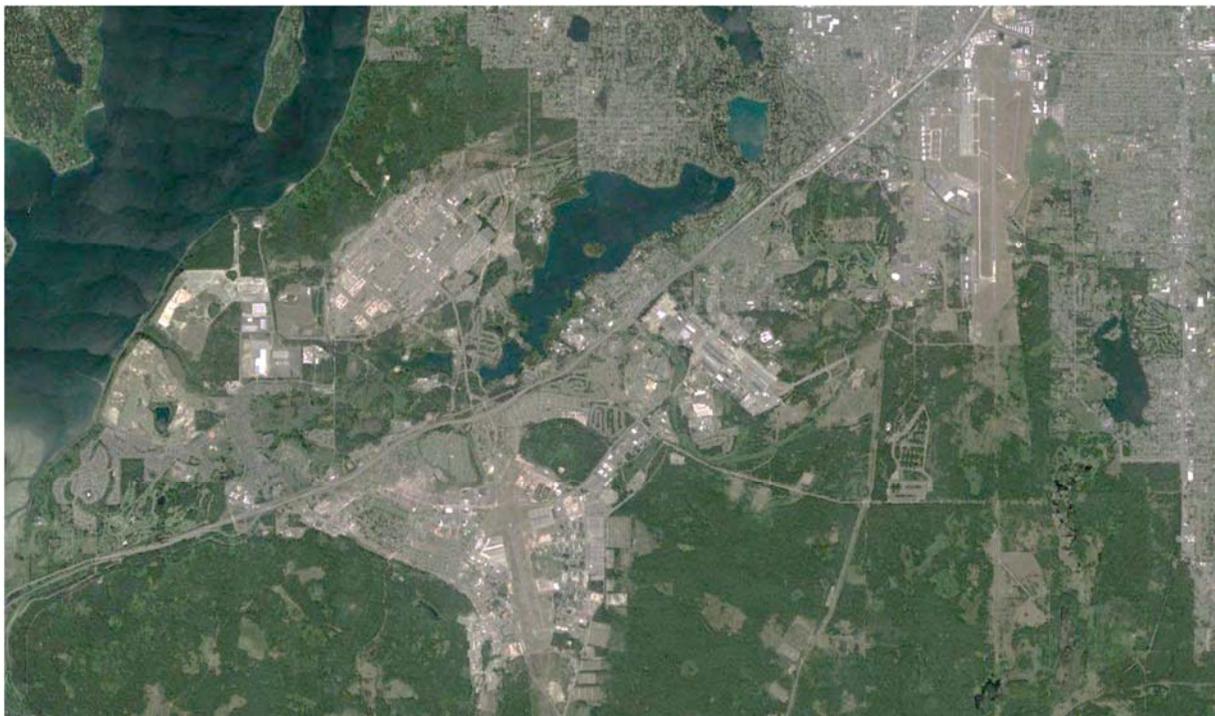
Pierce County, Washington

Joint Base Lewis-McChord Public Works – Environmental Division

IMLM-PWE

MS 17 Box 339500

Joint Base Lewis-McChord, Washington 98433





REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
HEADQUARTERS, JOINT BASE LEWIS-MCCHORD
1010 LIGGETT AVENUE, BOX 339500, MAIL STOP 14A
JOINT BASE LEWIS-MCCHORD, WA 98433-9500

February 3, 2017

Public Works

Mr. Charles Hoffman, PE
Department of Ecology
Southwest Regional Office
PO Box 47775
Olympia, Washington 98504-7775

Dear Mr. Hoffman:

Enclosed for your files is one paper copy with CD of the Final Fort Lewis Agreed Order Groundwater Monitoring Report – 2014; Building 4131 Former UST Site (AOC 8-2); Building A0111 Former UST Site (AOC 8-4); Building A1033 Former UST Site (AOC 9-2); Gray Army Fuel Facility (AOC 10-8), Joint Base Lewis-McChord. This final version incorporates revisions per your comments received on January 12, 2017.

If you have any questions or need clarification, please contact me at (253) 477-3742.

Sincerely,

GHEBRESLASSIE.MESERE
T.C.1015675159

Digitally signed by GHEBRESLASSIE.MESERE T.C.1015675159
DN: cn=US, o=U.S. Government, ou=DOD, ou=PEL, ou=USA,
c=US, email=GHEBRESLASSIE.MESERE.T.C.1015675159
Date: 2017.02.03 11:24:26 -0800

Meseret C. Ghebreslassie
Installation Restoration Program Manager
Public Works Department

FINAL

FORT LEWIS AGREED ORDER
GROUNDWATER MONITORING REPORT

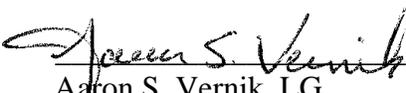
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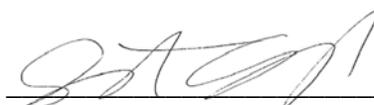
CONTRACT NO. W912DW-11-D-1031, TASK ORDER 0001

FEBRUARY 3, 2017

JOINT BASE LEWIS-MCCHORD
PIERCE COUNTY, WASHINGTON

SEALASKA ENVIRONMENTAL SERVICES, LLC
POULSBO, WASHINGTON

Prepared by: 
Aaron S. Vernik, LG
Senior Geologist
(360-930-3195)

Approved by: 
Scott Elkind, PE
Project Manager
(360-626-3991)

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ACRONYMS AND ABBREVIATIONS

AOC	Area of Concern
AS	Air Sparge
bgs	below ground surface
BTEX	Benzene, Toluene, ethylbenzene and xylenes
Ecology	Washington State Department of Ecology
ERS	Environmental Remediation Services
FLAO	Fort Lewis Agreed Order
GAAF	Gray Army Airfield
IRP	Installation Restoration Program
JBLM	Joint Base Lewis-McChord
µg/L	micrograms per liter
MTCA	Model Toxics Control Act
MW	Monitoring Well
PQL	Practical Quantification Limit
SAP	Sampling and Analysis Plan
Sealaska	Sealaska Environmental Services, LLC
SVE	Soil Vapor Extraction
TPH-D	diesel-range total petroleum hydrocarbons
TPH-G	gasoline-range total petroleum hydrocarbons
TPH-HO	heavy oil-range total petroleum hydrocarbons
UST	Underground Storage Tank
VOC	volatile organic compound

1 INTRODUCTION

This Groundwater Monitoring Report was prepared for Joint Base Lewis-McChord Public Works, Joint Base Lewis-McChord (JBLM), Washington (Figure 1-1) by Sealaska Environmental Services, LLC (Sealaska). All work was completed in accordance with the 2014 Fort Lewis Agreed Order Sampling and Analysis Plan (Versar 2014). This report documents groundwater monitoring events conducted in March and September 2014 at four Fort Lewis Agreed Order (FLAO) sites (Figure 1-2) being addressed in accordance with Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA). The four FLAO sites are:

- Building 4131 Former Underground Storage Tank (UST) Site (Area of Concern [AOC] 8-2);
- Building A0111 Former UST Site (AOC 8-4);
- Building A1033 Former UST Site (AOC 9-2); and
- Gray Army Airfield (GAAF) Fuel Facility (AOC 10-8).

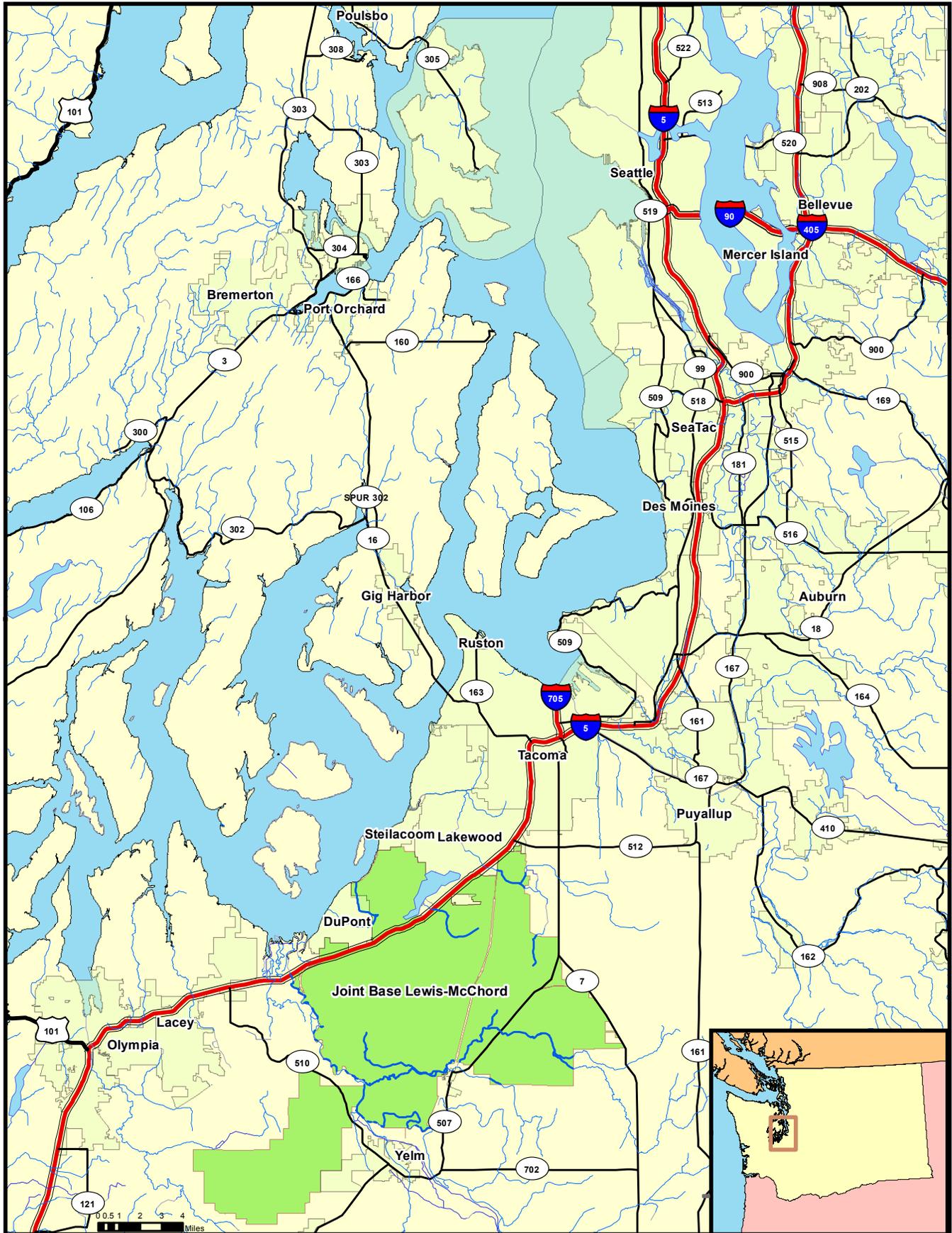
Field forms for both sampling events covered in this report are included in Appendix A. Laboratory analytical reports for both sampling events are included in Appendix B. Data quality review and verification information is included in Appendix C.

1.1 SITE LOCATIONS AND USE

1.1.1 Building 4131 Former UST Site (AOC 8-2)

The site is located on Lewis Main near the Pendleton underpass under Interstate 5 at the intersection of Pendleton Avenue and Lewis Drive. A 500-gallon heating oil tank and associated soil contamination were removed from the former building location in 1996. Currently, the site is a vacant lot. The land use of the site is designated for Open Space in the JBLM Master Plan.

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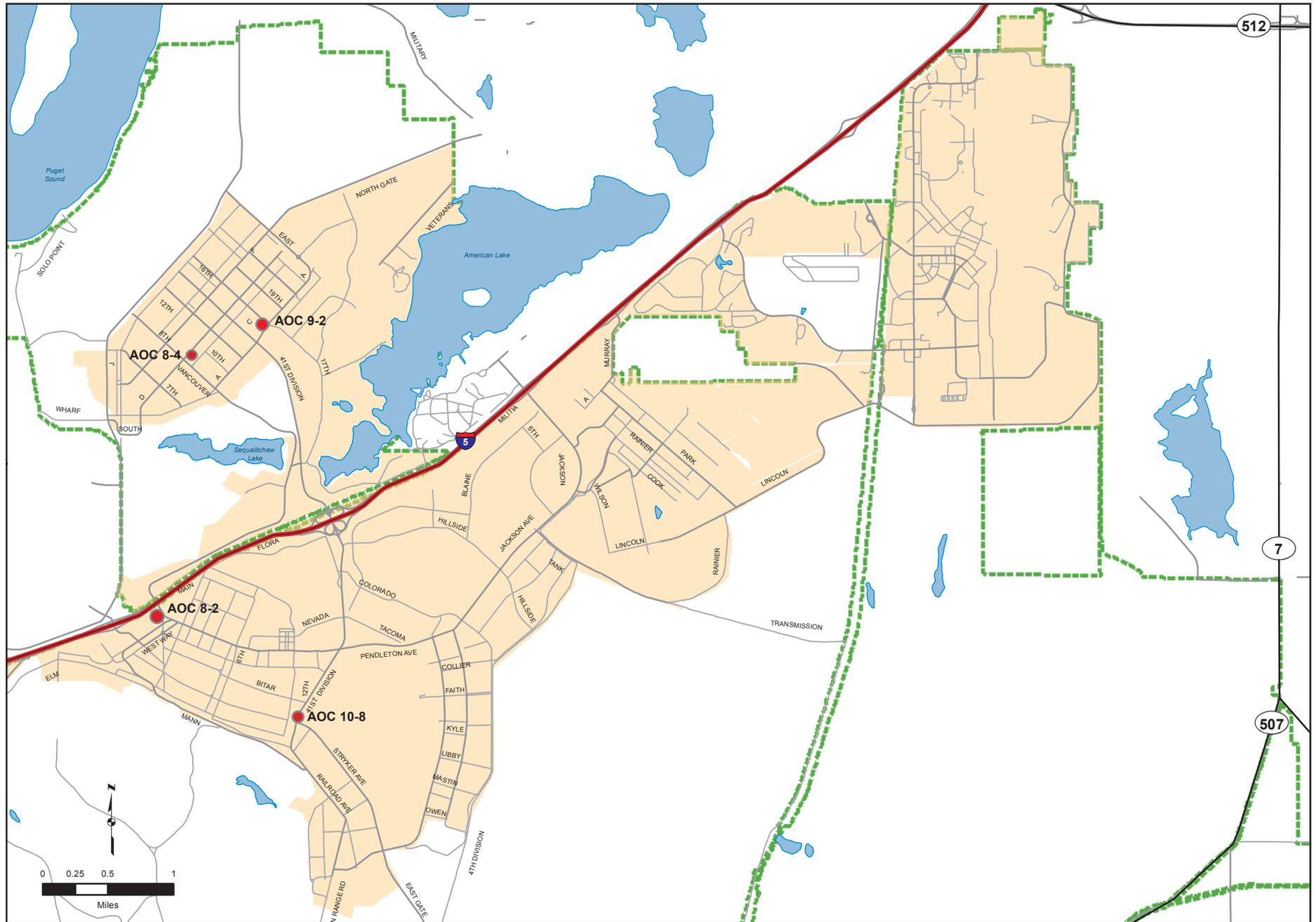


Map Data:
Coordinate System: UTM Zone 10
Horizontal Datum: WGS 84

USACE SEALASKA

**Figure 1-1
Joint Base Lewis-McChord
Location Map**

**Contract #
W912DW-11-D-1031
Task Order 0001**



<p>Legend</p> <p> Cantonment Area</p> <p> JBLM Boundary</p>	<p>Map Data: Coordinate System: UTM, Zone 10 Horizontal Datum: WGS 84</p>	<p>USACE</p>	<p>SEALASKA</p>	<p>Figure 1-2 Projects Location Map</p>
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1.1.2 Building A0111 Former UST Site (AOC 8-4)

The site is located on Lewis North near the intersection of 9th Street and D Street. A 300-gallon heating oil tank and associated soil contamination were removed from the former building location in 1996. A chemical battalion administration building was constructed on the site in 2010 and 2011. Most of the construction of the building and landscaping was completed in August 2011. The land use of the site is designated for Administration in the JBLM Master Plan.

1.1.3 Building A1033 Former UST Site (AOC 9-2)

The site is located on Lewis North near the intersection of 17th Street and A Street. Four 4,000-gallon gasoline USTs and associated soil contamination were removed from the former building location between 1990 and 1994. A credit union and Domino's Pizza are currently on the site. A combination air sparge (AS)/soil vapor extraction (SVE) system was constructed in 2009 under the building to intercept petroleum vapors in the vadose zone and prevent them from migrating into the building (Versar 2009a). The SVE system has been operating since February 2010. After a pilot test was conducted on the full AS/SVE system, the AS system was started up in 2013. The land use of the site is designated for Community Services in the JBLM Master Plan.

1.1.4 GAAF Fuel Facility (AOC 10-8)

The GAAF Fuel Facility is located on the northwest side of GAAF adjacent to Building 3034 on Lewis Main. Four 25,000-gallon jet fuel USTs and associated soil contamination were removed from the site in 1998. The site is currently a fenced and gated paved parking lot. The land use of the site is designated as Aviation in the JBLM Master Plan.

1.2 INVESTIGATION CHRONOLOGY

1.2.1 Building 4131 Former UST Site (AOC 8-2)

Detailed background information is included in the FLAO Remedial Investigation Report (Bussey 2008). In summary, six monitoring wells have been installed to date (designated as 4131-MW01 through 4131-MW06). Groundwater monitoring events have been conducted from 2005 to present.

1.2.2 Building A0111 Former UST Site (AOC 8-4)

Detailed background information is included in the FLAO Remedial Investigation Report (Bussey 2008). In summary, eight monitoring wells have been installed to date (designated as A0111-MW01 through A0111-MW08) and groundwater monitoring events have been conducted from 2005 to present.

Monitoring wells A0111-MW01 through A0111-MW03 were decommissioned by Krazan and Associates in February 2010 because they were within the footprint of a new, chemical battalion administration building. Three new monitoring wells, designated as A0111-MW06 through A0111-MW08 were constructed and developed in February 2010 to replace the three decommissioned wells. Monitoring wells A0111-MW06 through A0111-MW08 were initially sampled on 1 March 2010 after development by Krazan Associates. These wells were initially sampled quarterly with exceptions due to monument or casing damage and construction or soil debris placement prohibiting access to all of the wells.

The three monitoring wells' sampling schedule was changed to semi-annual beginning with the March 2012 sampling event. As of September 2014, 12 sampling events have been completed. This does not include an event conducted in February 2011 when monitoring wells A0111-MW06 and A0111-MW07 could not be located and A0111-MW08's monument and casing were broken. Beginning with the June 2012 sampling event, all monitoring wells part of AOC 8-4's current sampling network have been repaired and there have been no access issues.

1.2.3 Building A1033 Former UST Site (AOC 9-2)

Detailed background information is included in the FLAO Remedial Investigation Report (Bussey 2008). In summary, eight monitoring wells have been installed to date (designated as 95 A17-1, 95 A17-2, 95 A17-3A, 95 A17-4, 96 A17-5, 96 A17-6, 07 A17-7, and 10 A17-08). Groundwater monitoring events have been conducted from 1995 to present. A combination AS/SVE system was constructed in 2009 to intercept volatile organic compound (VOC) vapors in soil under the new credit union and Domino's Pizza building (Versar 2009a). The SVE portion of the system was turned on in February 2010, prior to occupation of the building. The AS system was turned on later and both are currently operational. Field events and data regarding the AS/SVE system are included in separate reports from groundwater monitoring activities.

1.2.4 GAAF Fuel Facility (AOC 10-8)

Detailed background information is included in the FLAO Remedial Investigation Report (Bussey 2008). In summary, five monitoring wells have been installed from 2005 through 2009. The wells were designated as AOC 10-8-MW01 through AOC 10-8-MW04 and AOC 10-8-B05. Initially, the monitoring wells were designated as JP-MW-1 through JP-MW-4 and then changed to AOC 10-8-MW01 through AOC 10-8-MW04. Beginning with the August 2010 Monitoring Report (Versar 2009b), these monitoring wells have been referred to as JP-MW-1 through JP-MW-4 per the original numbering. Groundwater monitoring events were conducted from 1993 to 1995 and from 2004 to present. In 2007, the site was paved over and is currently a parking lot. During construction activities JP-MW-4 was paved over and is no longer accessible and AOC 10-8-B05 was damaged. The AOC 10-8-B05 casing was cracked and bent and personnel are unable to collect samples from the well using a pump. Due to these issues, since 2008, samples have been collected from AOC 10-8-B05 using a disposable bailer.

1.3 HYDROGEOLOGY

The aquifer of interest for all four sites is the upper Vashon Aquifer. The unconfined upper Vashon Aquifer consists of glacial outwash deposits generally underlain by lower permeability Vashon Till deposits. Depth to groundwater is typically 20 to 30 feet below ground surface (bgs) at AOC 8-2, 15 to 20 feet bgs at AOC 8-4, 20 to 30 feet bgs at AOC 9-2, and 35 to 45 feet bgs at AOC 10-8. The regional direction of groundwater flow in the Vashon Aquifer across the Fort Lewis Cantonment Area is generally to the west, with eventual discharge at Puget Sound. Local flow direction at each site is generally:

- To the southwest at AOC 8-2;
- To the northwest at AOC 8-4;
- To the west at AOC 9-2; and
- To the northwest at AOC 10-8.

The closest potential down gradient receptor to each site is:

- JBLM production well 17 and the City of DuPont's Bell Hill Wells are located approximately 1/4 mile southwest and 2/3 mile northwest of AOC 8-2, respectively. However, these wells are screened in deeper aquifers than the upper Vashon Aquifer;
- There are no potential receptors currently located downgradient of either AOC 8-4 or AOC 9-2; and
- JBLM production well 17 is located approximately 1.5 miles west of AOC 10-8 and is screened at a depth of approximately 460 to 480 feet bgs (below the upper Vashon Aquifer).

2 FIELD ACTIVITIES

JBLM Installation Restoration Program (IRP) personnel conducted the spring 2014 sampling event from 10 to 17 March. Sealaska personnel conducted the fall event between 16 and 25 September. Copies of the completed field forms for both sampling events are included in Appendix A.

During each monitoring event, an electronic water level indicator was used to measure depth to water in all monitoring wells scheduled for static water level measurements to the nearest 0.01-foot from the top of the well's casing. Well construction details are presented in Table 2-1.

All monitoring wells at AOC 8-2, AOC 9-2, and AOC 10-8 except 95-A17-2 (AOC 9-2) and AOC 10-8-B05 (AOC 10-8) were purged using standard low-flow purging procedures prior to sampling. A stainless steel bladder pump was used to purge water from the monitoring wells. A variable frequency drive controller limited the purging flow rate to less than one liter per minute. Because of obstructions in AOC 10-8-B05, a disposable bailer was used to purge three well volumes from this well prior to sampling during the March sampling event. Monitoring well 95-A17-2 was not sampled in March because the water level was below the top of the obstruction and personnel were unable to get a bailer past the obstruction. The well was sampled using a disposable bailer in September.

At AOC 8-4, A0111-MW06 through A0111-MW08 were purged and sampled using disposable bailers. Monitoring well A0111-MW06 is located within a landscaped area behind the chemical battalion administration building. Monitoring wells A0111-MW07 and A0111-MW08 are located in front of the building within a lawn. It was decided that bailing the monitoring wells was the easiest way to sample them.

To verify stabilization during purging, relative water levels were taken and water quality parameters including pH, specific conductivity, temperature, and turbidity were measured with a calibrated Horiba U-10 or U-22 meter. The Horiba was calibrated at the beginning of each day prior to any sampling activities. In addition, during the March sampling event, dissolved oxygen and oxidation-reduction potential were monitored with calibrated YSI brand DO200 or PH100ORP meters to support stabilization and provide natural attenuation data. Groundwater samples were collected immediately after field measurements had stabilized without turning off the pumping system.

During each event, two duplicate samples were collected from monitoring wells. During the March event, duplicates were collected from wells 95-A17-3A (AOC 9-2) and JP-MW-02

(AOC 10-8). During the September event, duplicates were collected from wells A0111-MW08 (AOC 8-4) and 10-A17-8 (AOC 9-2).

Groundwater samples collected from monitoring wells at AOC 8-2, AOC 8-4, and AOC 10-8 were analyzed for diesel-range total petroleum hydrocarbons (TPH-D) and heavy oil-range total petroleum hydrocarbons (TPH-O), respectively, using Ecology Method NWTPH-Dx.

Groundwater samples collected from monitoring wells at AOC 9-2 were analyzed for gasoline-range TPH (TPH-G) using Ecology Method NWTPH-Gx. Samples were also analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) using United States Environmental Protection Agency Method 8260C.

Samples collected during the March event were transported directly to Analytical Research Incorporated (ARI) of Tukwila, Washington by IRP personnel. Samples collected during the September event were sent via courier to ALS Environmental of Kelso, Washington. Copies of laboratory analytical reports are included in Appendix B.

2.1 INVESTIGATION-DERIVED WASTE

Investigation-derived waste was disposed of as follows:

- Purge water and decontamination water from all monitoring wells was collected in 5-gallon buckets and discharged at the Landfill 2 Pump-and-Treat System.
- Personal protective equipment and garbage was disposed of as solid waste.

2.2 DEVIATIONS FROM THE 2014 GROUNDWATER MONITORING PLAN

Groundwater monitoring events were completed in general accordance with the February 2014 Sampling and Analysis Plan (SAP) for the four FLAO sites (Versar 2014). Deviations from the 2014 groundwater monitoring plan were:

- AOC 8-2 – No deviations from the plan were noted.
- AOC 8-4 – No deviations from the plan were noted.
- AOC 9-2 – During construction of the credit union the monument for 95-A17-2 was destroyed and replaced. The dedicated bladder pump was broken and personnel have been unable to retrieve the broken pump. No sample was collected from 95-A17-2 during the March event because the water level was below the top of the broken pump. During the September sampling event, a sample was collected from 95-A17-2 using a disposable bailer.
- AOC 10-8 – No deviations from the plan were noted.

Table 2-1. Well Construction Details

Location ID	Northing NAD 27	Easting NAD 27	TOC Elevation (ft AMSL)	Well Depth (ft bgs)	Screen Top (ft bgs)	Screen Bottom (ft bgs)	Completion Date
Building 04131 AOC-8-2							
4131-MW01	649038.75	1473216.47	263.97	37.5	27.5	37.5	21-Feb-05
4131-MW02	649072	1473150	263.53	33	23	33	23-Feb-05
4131-MW03	649113	1473222	262.39	34	24	34	22-Feb-05
4131-MW04	648977	1473114	259.74	34	23	33	22-Dec-05
4131-MW05	649083	1473023	259.23	34	23	33	20-Dec-05
4131-MW06	649182	1473101	262.08	35	23	33	20-Dec-05
Building A0111 AOC-8-4							
A0111-MW04	659693.2	1474810.03	230.88	28.5	17	27	19-Dec-05
A0111-MW05	659598.16	1474712.17	230.84	29	17	27	19-Dec-05
A0111-MW06	659485.651	1474923.47	227.69	29	19	29	5-Mar-10
A0111-MW07	659747.78	1474896.03	230.88	30	20	30	5-Mar-10
A0111-MW08	659619.72	1474778.33	231.24	30	20	30	5-Mar-10
Building A1033 AOC 9-2							
95-A17-1	660636.2	1477935.7	236.9	42.5	27.1	42.1	18-Aug-95
95-A17-2	660603.4	1477725.7	235.9	42.2	27.0	42.0	17-Aug-95
95-A17-3a	660699.7	1477730.7	235.9	44.5	29.3	44.3	17-Aug-95
95-A17-4	660734.1	1477793.9	236.8	42.5	26.6	42.0	18-Aug-95
96-A17-5	660832.5	1477581.5	233.9	45.0	44.8	29.8	22-Jan-96
96-A17-6	660896.0	1477694.5	235.1	45.0	44.8	29.8	22-Jan-96
07-A17-7	660693	1477589	233.2	37	22	37	21-Jun-07
10-A17-8	660665	1477794	235.8	39	29	39	8-Oct-10
Building 3034 - GAAF Fuel Facility AOC 10-8							
AOC 10-8-B05	644891	1478725	281.39	47.5	47.5	37.5	1-May-05
JP-MW01	644767.3	1478704.2	281.56	51.7	39.6	49.6	27-May-93
JP-MW02	644986.4	1478598.2	279.33	50.0	39.2	49.2	27-May-93
JP-MW03	644994.9	1478775.1	280.7	50.3	39.6	49.6	25-May-93
JP-MW04	644918.3	1478720.7	281.12	51.3	40.8	50.8	27-May-93

Notes:
 TOC = Top of casing
 ft AMSL = Feet above mean sea level
 ft bgs = Feet below ground surface

3 RESULTS AND DISCUSSION

3.1 BUILDING 4131 FORMER UST SITE (AOC 8-2)

Groundwater level and TPH-D concentration iso-contour lines are presented on Figure 3-1 (March) and Figure 3-2 (September). Table 3-1 presents depth to water measurements, TPH-D concentrations, and groundwater parameter field measurements for AOC 8-2. TPH-D concentrations are compared to Ecology's MTCA Method A cleanup level of 500 micrograms per liter ($\mu\text{g/L}$). Appendix B contains copies of laboratory analytical reports for both groundwater sampling events.

Historically, 4131-MW03 has been considered at or near the source area since it typically has the highest concentrations of TPH-D. Concentrations of TPH-D decrease to non-detectable values in down gradient wells 4131-MW04 (south of 4131-MW03) and 4131-MW05 (southwest of 4131-MW03). These results are generally consistent with previous events. TPH-D concentrations detected in samples collected from monitoring wells 4131-MW02 and 4131-MW03 during 2014 are above 500 $\mu\text{g/L}$.

Figure 3-3 presents TPH-D concentrations in samples collected from monitoring wells 4131-MW02 and 4131-MW03 over time. During the March sampling event, TPH-D was detected at 680 $\mu\text{g/L}$ (4131-MW02) and 2,400 $\mu\text{g/L}$ from 4131-MW03 (Table 3-1). During the September sampling event, TPH-D was detected at 1,400 $\mu\text{g/L}$ (4131-MW02) and 8,100 $\mu\text{g/L}$ (4131-MW03).



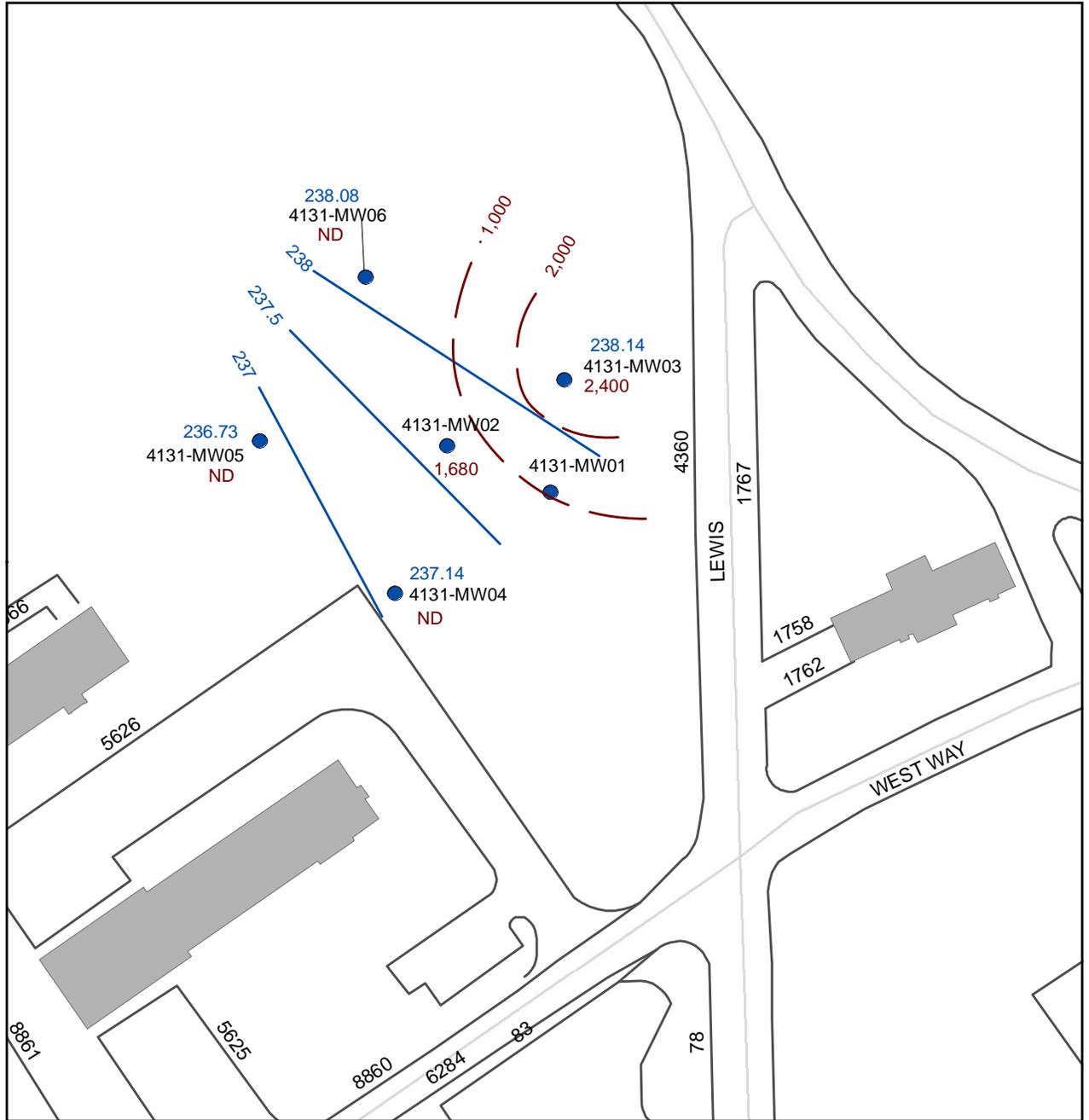
Notes:

Depth to water measurements and groundwater samples collected March 13, 2014.

Groundwater contour information for wells 4131-MW01 and 4131-MW02 not used due to perceived inaccuracies in casing elevation data.

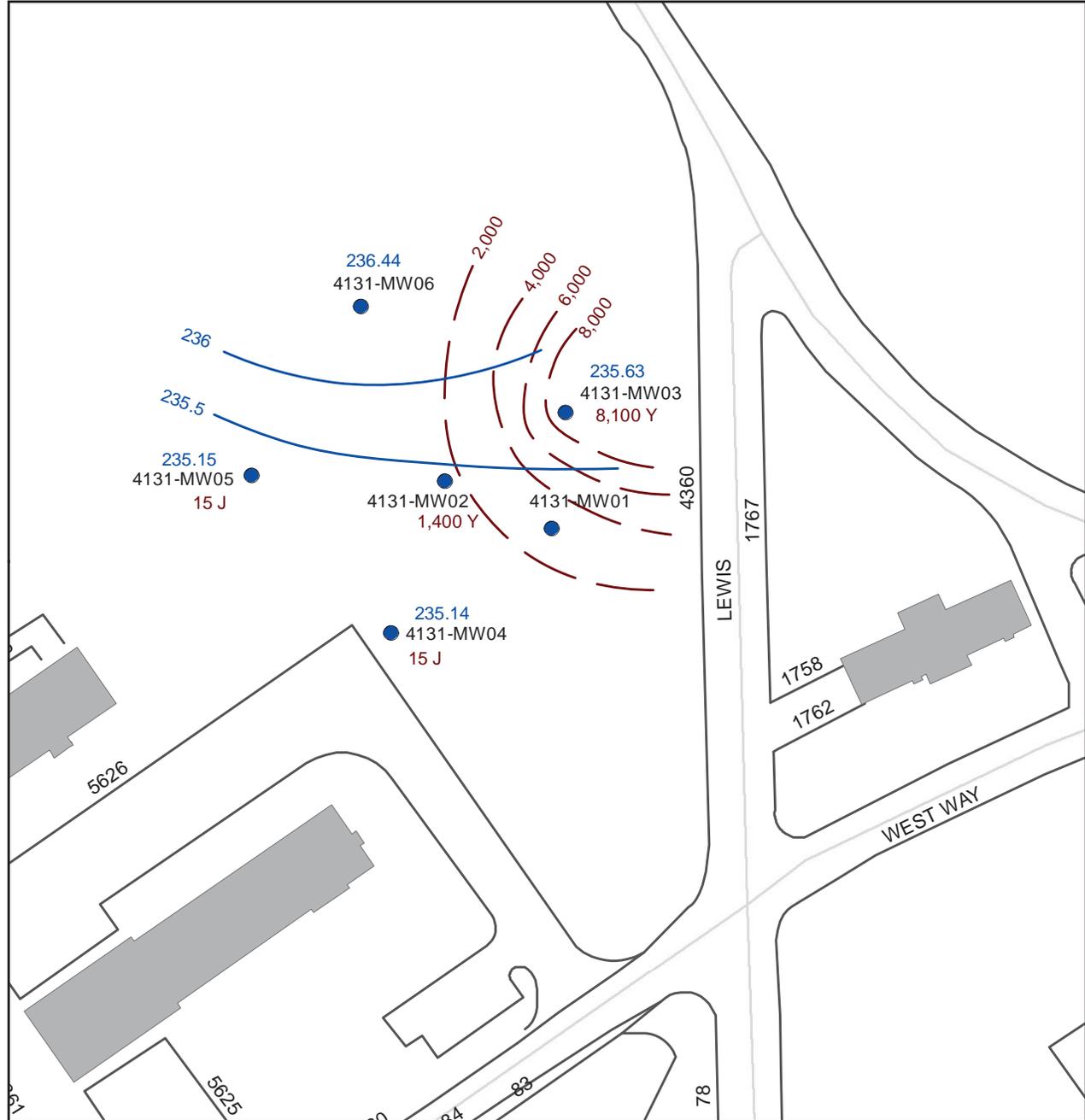
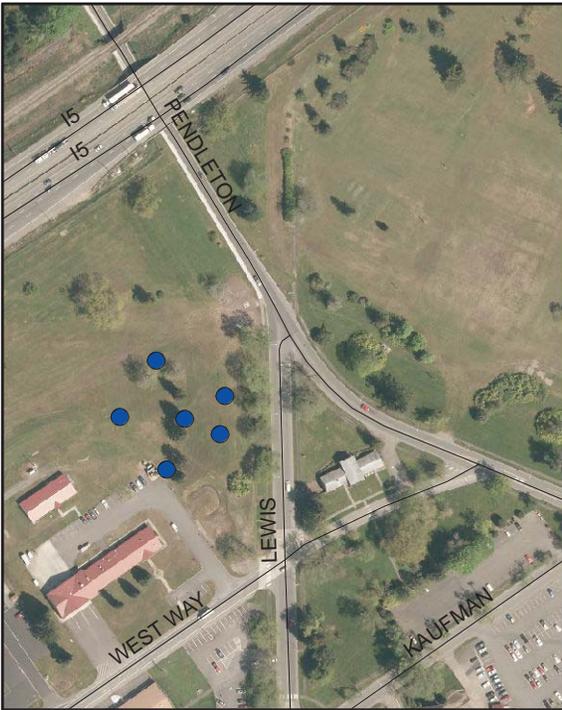
Legend

- Monitoring Well
- Groundwater Elevation (famsl)
- - - TPH-D Concentraion (µg/L)



USACE SEALASKA

Figure 3-1
AOC 8-2 Groundwater Elevation and
TPH-D Concentration Contours March 2014

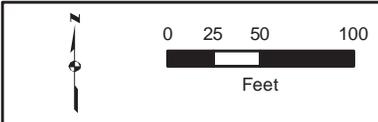


Notes:
 Depth to water measurements and groundwater samples collected September 22, 2014.

Groundwater contour information for wells 4131-MW01 and 4131-MW02 not used due to perceived inaccuracies in casing elevation data.

Legend

- Monitoring Well
- Groundwater Elevation (famsl)
- - - TPH-D Concentraion (µg/L)



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Figure 3-2
 AOC 8-2 Groundwater Elevation and
 TPH-D Concentration Contours September 2014

Figure 3-3. TPH-D Concentration Trends in 4131-MW02 and MW03 (AOC 8-2)

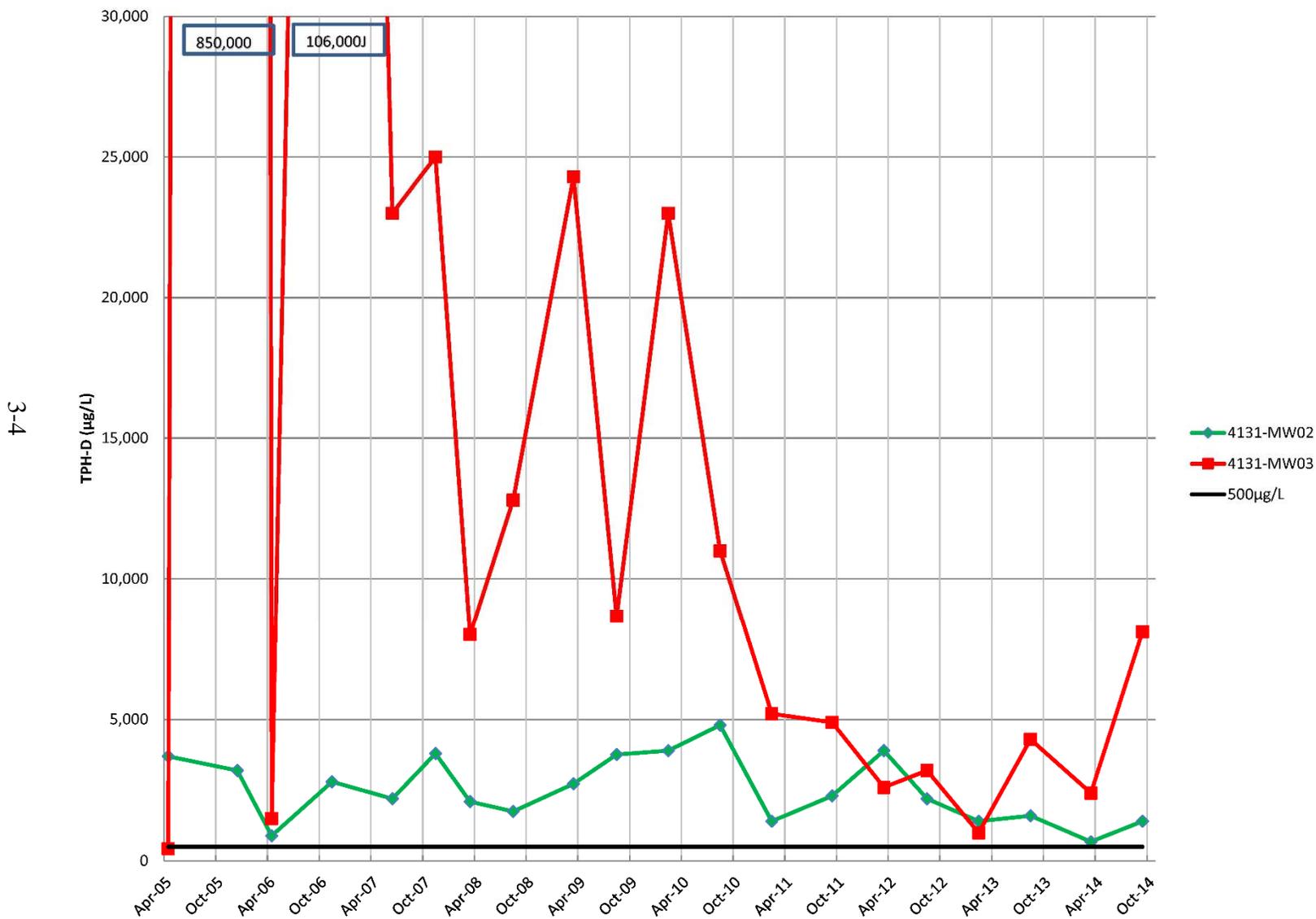


Table 3-1. AOC 8-2 Depth to Water Measurements, TPH-D Concentrations, and Groundwater Parameter Field Measurements

Well ID TOC Elevation	Date	DTW (ft bgs)	GWELEV (ft AMSL)	TPH-D (µg/L)	pH	Cond. (ms/cm)	DO (ppm)	ORP (mv)	Temp °C	
4131-MW01 263.97	11-Apr-05	28.14	235.83	250U	-	-	-	-	-	
	29-Dec-05	28.22	235.75	250U	-	-	-	-	-	
	4-Apr-06	24.09	239.88	250U	-	-	-	-	-	
	3-Nov-06	28.69	235.28	-	-	-	-	-	-	
	18-Jun-07	24.88	239.09	-	-	-	-	-	-	
	16-Nov-07	27.86	236.11	-	-	-	-	-	-	
	26-Mar-08	25.23	238.74	-	-	-	-	-	-	
	25-Aug-08	28.00	235.97	-	-	-	-	-	-	
	2-Mar-09	26.82	237.15	-	-	-	-	-	-	
	25-Aug-09	28.15	235.82	-	-	-	-	-	-	
	22-Feb-10	26.2	237.77	-	-	-	-	-	-	
	23-Aug-10	27.18	236.79	-	-	-	-	-	-	
	22-Feb-11	24.7	239.27	-	-	-	-	-	-	
	8-Sep-11	26.14	237.83	-	-	-	-	-	-	
	6-Mar-12	25.44	238.53	-	-	-	-	-	-	
	15-Aug-12	26	237.97	-	-	-	-	-	-	
	20-Feb-13	25.19	238.78	-	-	-	-	-	-	
	12-Aug-13	26.75	237.22	-	-	-	-	-	-	
13-Mar-14	23.95	240.02	-	-	-	-	-	-		
22-Sep-14	26.19	237.78	-	-	-	-	-	-		
4131-MW02 263.53	11-Apr-05	26.95	236.58	3,700	-	-	-	-	-	
	29-Dec-05	27.04	236.49	3,200	-	-	-	-	-	
	4-Apr-06	22.99	240.54	890	-	-	-	-	-	
	3-Nov-06	27.55	235.98	2,800	6.37	0.37	-	-	13.00	
	18-Jun-07	23.74	239.79	2,200	5.94	0.15	-	-	12.40	
	16-Nov-07	26.69	236.84	3,800J	7.50	0.32	0.66	-	12.80	
	26-Mar-08	24.05	239.48	2,100	7.19	0.17	2.75	11	161.00	
	25-Aug-08	26.85	236.68	1,750	7.02	0.31	1.02	29	12.78	
	2-Mar-09	25.67	237.86	2,730	6.37	0.23	0.55	-	12.68	
	25-Aug-09	26.96	236.57	3,760	6.24	0.31	0.56	41	12.70	
	Duplicate	25-Aug-09	26.96	236.57	3,430	6.24	0.31	0.56	41	12.70
	22-Feb-10	25.00	238.53	3,900	6.59	0.27	0.44	35	12.50	
	Duplicate	22-Feb-10	25.00	238.53	3,200	6.59	0.27	0.44	35	12.50
	23-Aug-10	26.00	237.53	120U*	5.59	0.11	7.49	308	13.10	
	22-Feb-11	23.62	239.91	1,400	6.14	0.17	1.17	-	11.90	
	8-Sep-11	25.00	238.53	2,300	5.19	0.19	-	209	12.20	
	Duplicate	8-Sep-11	25.00	238.53	2,200	5.19	0.19	-	209	12.20
	6-Mar-12	24.26	239.27	3,900	7.05	-	0.32	16	12.30	
15-Aug-12	24.98	238.55	2,200	7.74	-	0.43	11	12.80		
20-Feb-13	24.10	239.43	1,400	7.62	-	5.07	23	13.20		
12-Aug-13	25.60	237.93	1,600	6.52	0.21	0.38	25	11.90		
13-Mar-14	22.95	240.58	680	5.90	0.11	4.06	28	12.00		
22-Sep-14	24.98	238.55	1,400	6.30	0.16	1.40	26	12.80		

Table 3-1. AOC 8-2 Depth to Water Measurements, TPH-D Concentrations, and Groundwater Parameter Field Measurements (continued)

Well ID TOC Elevation	Date	DTW (ft bgs)	GWELEV (ft AMSL)	TPH-D (µg/L)	pH	Cond. (ms/cm)	DO (ppm)	ORP (mv)	Temp °C	
4131-MW03 262.39	11-Apr-05	28.22	234.17	430	-	-	-	-	-	
	29-Dec-05	25.00	237.39	850,000	-	-	-	-	-	
	4-Apr-06	24.73	237.66	1,500	-	-	-	-	-	
	3-Nov-06	29.48	232.91	106,000J	5.83	0.35	-	-	13.00	
	18-Jun-07	25.10	237.29	23,000	6.16	0.28	-	-	12.60	
	16-Nov-07	28.07	234.32	25,000J	-	-	-	-	-	
	26-Mar-08	24.61	237.78	8,000	-	-	-	-	-	
	25-Aug-08	27.62	234.77	12,800	6.92	0.27	1.15	61	13.43	
	2-Mar-09	25.45	236.94	24,300	6.27	0.19	0.56	-	12.80	
	25-Aug-09	26.22	236.17	8,660	6.10	0.19	0.72	217	12.90	
	22-Feb-10	24.55	237.84	23,000	6.18	0.18	2.32	114	12.50	
	23-Aug-10	25.68	236.71	4,800*	5.98	0.28	0.46	141	12.60	
	22-Feb-11	24.50	237.89	5,200	6.04	0.18	1.64	-	11.90	
	8-Sep-11	25.55	236.84	4,900	4.96	0.15	1.64	-105	12.90	
	6-Mar-12	24.65	237.74	2,600	7.05	-	2.59	47	11.20	
	Duplicate	6-Mar-12	24.65	237.74	5,600	7.05	-	2.59	47	11.20
	15-Aug-12	25.64	236.75	3,200	7.28	-	2.04	30	12.40	
	20-Feb-13	24.94	237.45	1,000	7.16	-	2.39	35	12.40	
	12-Aug-13	27.20	235.19	4,300	6.19	0.13	0.39	45	12.50	
13-Mar-14	24.25	238.14	2,400	6.08	0.16	3.63	44	12.20		
22-Sep-14	26.76	235.63	8,100	Pumped Dry						
4131-MW04 259.74	29-Dec-05	26.64	233.10	1,200	-	-	-	-	-	
	4-Apr-06	22.59	237.15	250U	-	-	-	-	-	
	3-Nov-06	27.17	232.57	100U	6.25	0.10	-	-	13.20	
	18-Jun-07	23.34	236.40	100U	6.20	0.08	-	-	12.60	
	16-Nov-07	26.31	233.43	100UJ	7.09	0.08	6.78	-	13.40	
	21-Mar-08	23.70	236.04	100U	7.24	0.09	7.39	280	11.90	
	25-Aug-08	26.48	233.26	100U	6.06	0.09	7.81	307	12.18	
	2-Mar-09	25.31	234.43	100U	5.61	0.07	8.11	-	12.70	
	25-Aug-09	26.60	233.14	100U	5.30	0.08	7.67	200	11.90	
	22-Feb-10	24.67	235.07	120U	6.70	0.07	8.43	210	12.80	
	23-Aug-10	25.65	234.09	120U	5.73	0.09	7.12	365	12.60	
	22-Feb-11	23.23	236.51	120U	6.11	0.06	7.77	-	12.30	
	8-Sep-11	24.45	235.29	130	4.38	0.08	-	146	12.60	
	6-Mar-12	23.90	235.84	120U	7.04	-	7.51	25	12.70	
	15-Aug-12	25.60	234.14	120U	7.48	-	6.74	21	12.40	
	20-Feb-13	23.90	235.84	100U	7.69	-	6.78	13	12.30	
	12-Aug-13	25.30	234.44	100U	6.16	0.07	8.58	42	12.30	
13-Mar-14	22.60	237.14	100U	6.36	0.07	9.67	28	12.80		
22-Sep-14	24.60	235.14	15J	6.20	0.08	9.00	240	13.30		

Table 3-1. AOC 8-2 Depth to Water Measurements, TPH-D Concentrations, and Groundwater Parameter Field Measurements (continued)

Well ID TOC Elevation	Date	DTW (ft bgs)	GWELEV (ft AMSL)	TPH-D (µg/L)	pH	Cond. (ms/cm)	DO (ppm)	ORP (mv)	Temp °C	
4131-MW05 259.23	29-Dec-05	26.10	233.13	250U	-	-	-	-	-	
	4-Apr-06	22.04	237.19	250U	-	-	-	-	-	
	3-Nov-06	26.62	232.61	100U	6.38	0.12	-	-	13.50	
	18-Jun-07	22.81	236.42	100U	6.45	0.10	-	-	13.30	
	16-Nov-07	25.78	233.45	100UJ	7.53	0.11	9.36	-	13.50	
	21-Mar-08	23.16	236.07	100U	7.32	0.10	7.99	153	12.60	
	25-Aug-08	25.93	233.30	100U	7.60	0.11	8.64	201	13.00	
	2-Mar-09	24.75	234.48	100U	6.15	0.09	7.95	-	13.20	
	25-Aug-09	26.07	233.16	100U	6.49	0.11	8.22	142	13.30	
	22-Feb-10	24.15	235.08	120U	6.63	0.09	7.67	215	13.20	
	23-Aug-10	25.14	234.09	11,000*	5.49	0.16	1.74	-33	13.00	
	22-Feb-11	22.65	236.58	120U	6.29	0.10	7.41	-	13.10	
	8-Sep-11	24.09	235.14	120U	4.91	0.10	-	346	13.00	
	6-Mar-12	26.36	232.87	120U	7.04	-	7.45	17	13.10	
	15-Aug-12	24.50	234.73	120U	7.81	-	5.83	8	13.10	
	Duplicate	15-Aug-12	24.50	234.73	120U	7.81	-	5.83	8	13.10
		20-Feb-13	23.19	236.04	100U	7.84	-	6.70	7	12.90
		12-Aug-13	24.72	234.51	100U	6.44	0.08	9.01	31	12.60
	13-Mar-14	22.50	236.73	100U	6.51	0.12	9.30	21	13.00	
	22-Sep-14	24.08	235.15	15J	6.40	0.10	9.50	255	13.50	
4131-MW06 262.08	29-Dec-05	24.97	237.11	250U	-	-	-	-	-	
	4-Apr-06	23.98	238.10	250U	-	-	-	-	-	
	3-Nov-06	28.50	233.58	-	-	-	-	-	-	
	18-Jun-07	24.75	237.33	-	-	-	-	-	-	
	16-Nov-07	27.64	234.44	-	-	-	-	-	-	
	21-Mar-08	25.06	237.02	-	-	-	-	-	-	
	25-Aug-08	27.62	234.46	-	-	-	-	-	-	
	2-Mar-09	25.51	236.57	-	-	-	-	-	-	
	25-Aug-09	27.58	234.50	-	-	-	-	-	-	
	22-Feb-10	25.20	236.88	-	-	-	-	-	-	
	23-Aug-10	25.70	236.38	-	-	-	-	-	-	
	22-Feb-11	24.50	237.58	-	-	-	-	-	-	
	8-Sep-11	25.56	236.52	-	-	-	-	-	-	
	6-Mar-12	25.17	236.91	-	-	-	-	-	-	
	15-Aug-12	26.62	235.46	-	-	-	-	-	-	
20-Feb-13	25.05	237.03	-	-	-	-	-	-		
12-Aug-13	25.62	236.46	-	-	-	-	-	-		
13-Mar-14	24.00	238.08	-	-	-	-	-	-		
	22-Sep-14	25.64	236.44	-	-	-	-	-	-	
MTCA Method A Cleanup Level				500						

Table 3-1. AOC 8-2 Depth to Water Measurements, TPH-D Concentrations, and Groundwater Parameter Field Measurements (continued)

Notes:

TOC = Top of casing

DTW (ft bgs) = Depth to water (feet below ground surface)

GWELEV (ft AMSL) = Groundwater elevation (feet above mean sea level)

TPH-D ($\mu\text{g/L}$) = Diesel-range total petroleum hydrocarbons (micrograms per liter)

Cond. (ms/cm) = Conductivity (microsiemens per centimeter)

DO (ppm) = Dissolved oxygen (parts per million)

ORP (mv) = Oxygen / reduction potential (millivolts)

Temp. ($^{\circ}\text{C}$) = Temperature (degrees Celsius)

BOLD = Analyte detected at or above laboratory practical quantification limit

BOLD = TPH-D detected at or above MTCA Method A cleanup level of $500 \mu\text{g/L}$

J = Value estimated

U = Analyte not detected above practical quantification limit reported

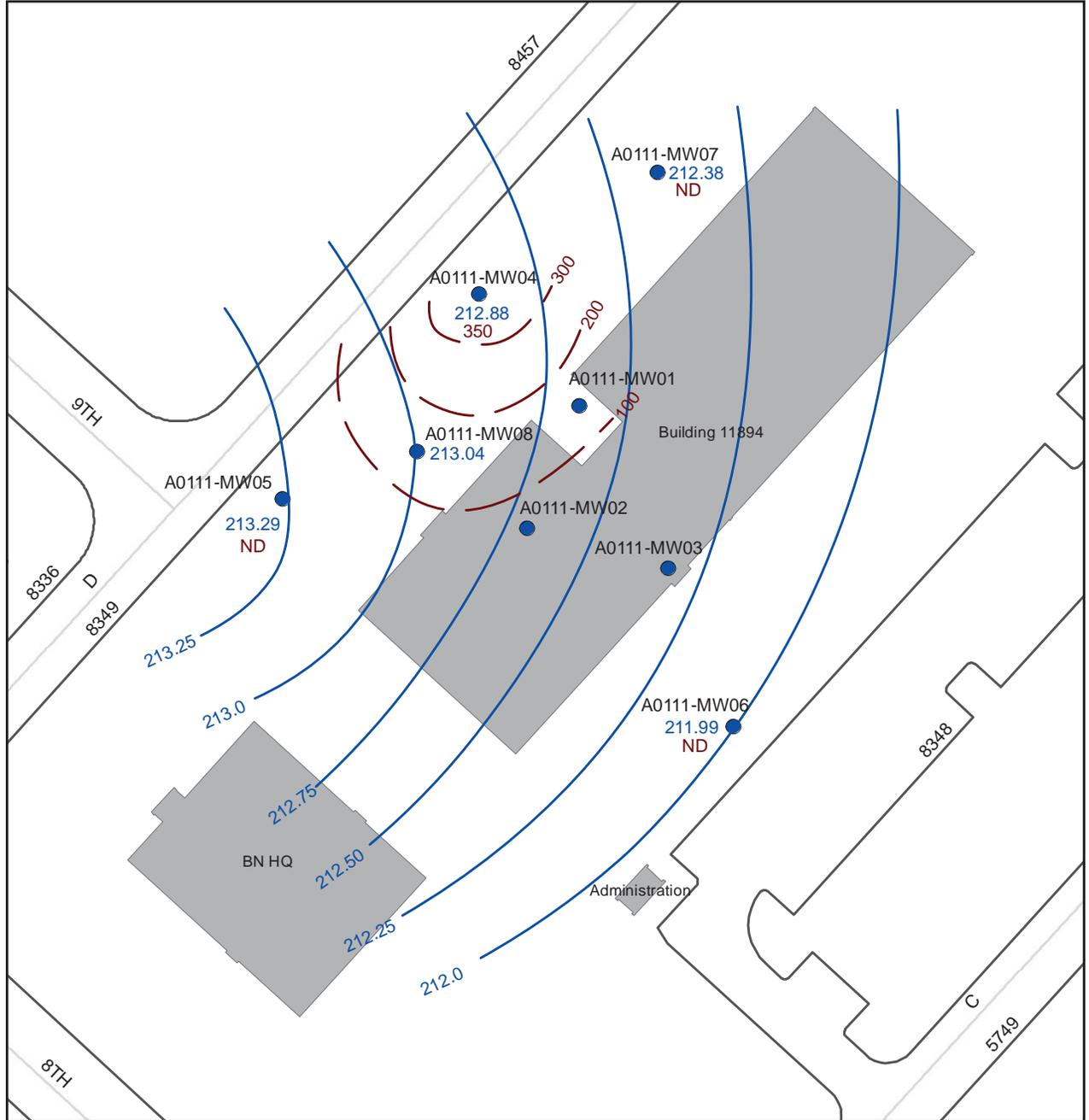
- = No data, not applicable

*= It is suspected that three samples were mislabeled. The sample collected from well 4131-MW02 was labelled as 4131-MW03. The sample collected from well 4131-MW03 was labelled as 4131-MW05, and the sample collected from well 4131-MW05 was labelled as 4131-MW02.

3.2 BUILDING A0111 FORMER UST SITE (AOC 8-4)

Groundwater level and TPH-D concentration iso-contour lines for the March and September sampling events are presented on Figures 3-4 and 3-5 respectively. Table 3-2 presents depth to water measurements, TPH-D concentrations, and groundwater parameter field measurements. Appendix B contains copies of laboratory analytical reports for both groundwater sampling events.

Historically, A0111-MW02 had been considered at or near the source since it consistently had the highest detected concentrations of TPH-D in any onsite monitoring wells ranging from $791 \mu\text{g/L}$ to $7,600 \mu\text{g/L}$. However, A0111-MW02 was one of the three wells decommissioned in 2010 during construction activities of the chemical battalion administration building. TPH-D was detected at $350 \mu\text{g/L}$ (A0111-MW04) and $250 \mu\text{g/L}$ (A0111-MW08) during the March sampling event. TPH-D was not detected in wells A0111-MW05, A0111-MW06 or A0111-MW07 during the March event. TPH-D was detected at $1,100 \mu\text{g/L}$ (A0111-MW04), and $720 \mu\text{g/L}$ (A0111-MW08) during the September sampling event. A duplicate sample was collected during the September sampling event from well A0111-MW08. Sample results are consistent with the primary sample ($590 \mu\text{g/L}$). TPH-D was not detected in wells A0111-MW06 and A0111-MW07 during the September event. Well A0111-MW05 was not sampled in September per the SAP. Figure 3-6 presents TPH-D concentration trends in A0111-MW01, A0111-MW02, A0111-MW04, and A0111-MW08.

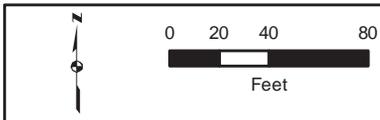


Notes:

Depth to water measurements and groundwater samples collected March 17, 2014.

Legend

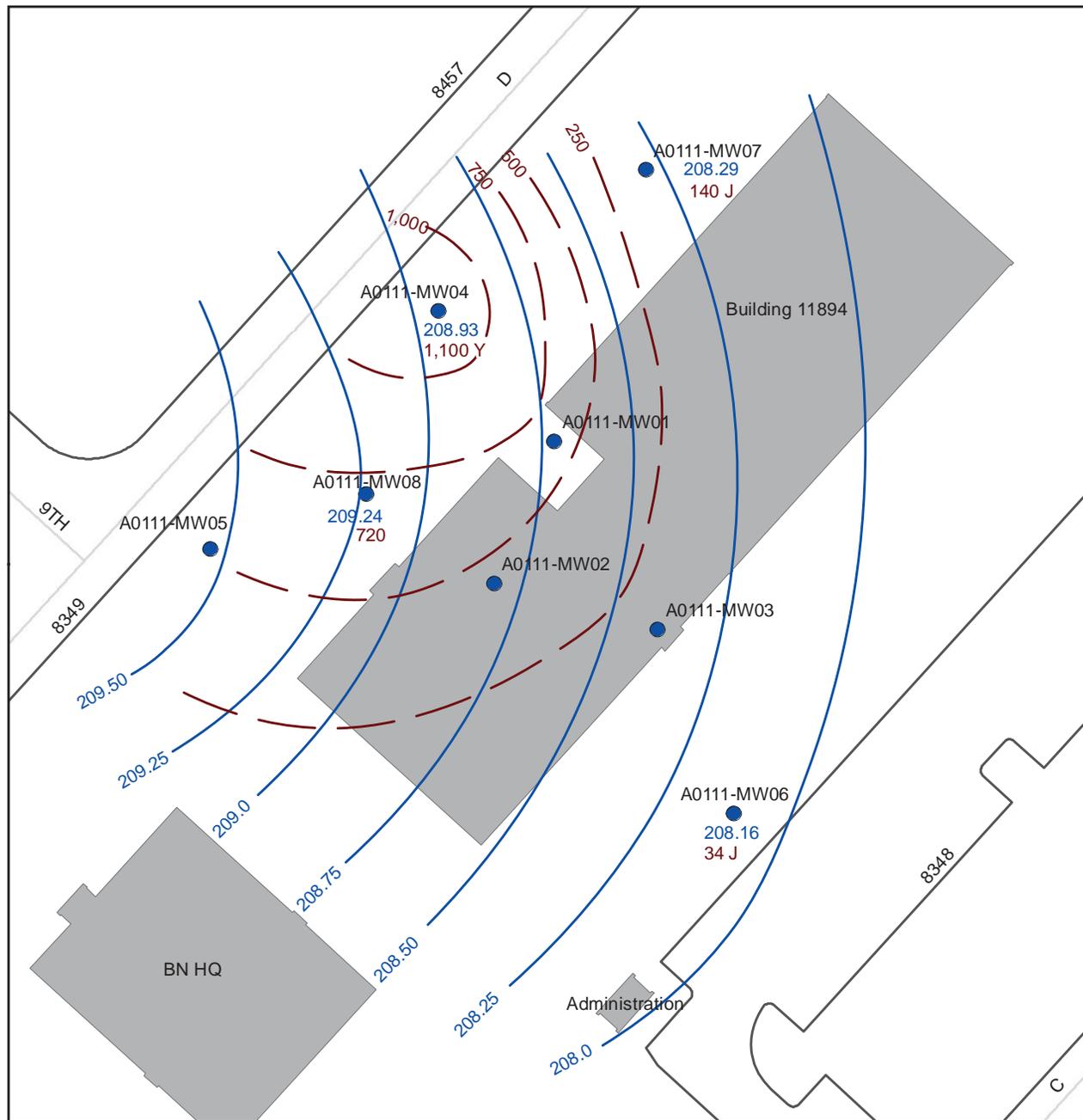
- Monitoring Well
- Groundwater Elevation (famsl)
- - - TPH-G Concentraion (µg/L)



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Figure 3-4
AOC 8-4 Groundwater Elevation and
TPH-D Concentration Contours March 2014



Notes:

Depth to water measurements collected September 11, 2014.

Groundwater samples collected September 16, 2014.

Legend

- Monitoring Well
- Groundwater Elevation (fmsl)
- - - TPH-G Concentraion ($\mu\text{g/L}$)



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Figure 3-5
AOC 8-4 Groundwater Elevation and TPH-D Concentration Contours September 2014

**Figure 3-6 - TPH-D Concentration Trends in AO111 - MW01, - MW02,
- MW-04, -MW-08 (AOC 8-4)**

3-11

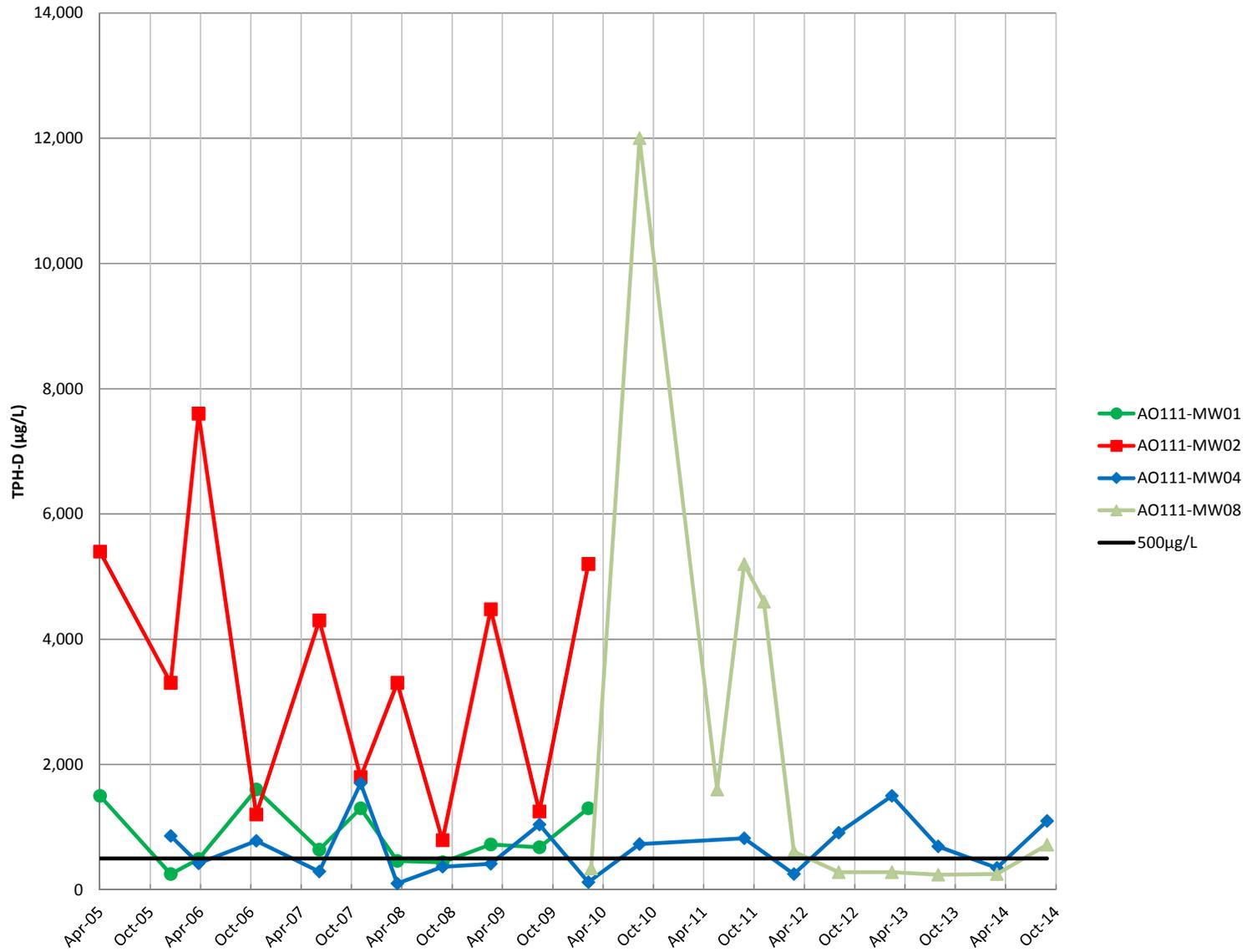


Table 3-2. AOC 8-4 Depth to Water Measurements, TPH-D Concentrations, and Groundwater Parameter Field Measurements

Well ID TOC Elevation	Date	DTW (ft bgs)	GWELEV (ft AMSL)	TPH-D (µg/L)	pH	Cond. (ms/cm)	DO (ppm)	ORP (mv)	Temp °C
A0111-MW01 101.64 (Decommissioned)	14-Apr-05	19.95	81.69	1,500	-	-	-	-	-
	27-Dec-05	19.56	82.08	250U	-	-	-	-	-
	7-Apr-06	18.79	82.85	490	-	-	-	-	-
	2-Nov-06	22.52	79.12	1,600	6.01	0.20	-	-	13.10
	19-Jun-07	19.45	82.19	640	5.41	0.11	-	-	12.90
	16-Nov-07	20.99	80.65	1,300J	6.90	0.17	0.41	-	13.20
	28-Mar-08	19.03	82.61	460	6.55	0.13	1.80	207	11.30
	8-Sep-08	21.57	80.07	437	6.60	0.18	0.47	79	12.65
	2-Mar-09	19.97	81.67	723	5.85	0.14	0.26	91	12.40
	26-Aug-09	21.70	79.94	678	5.73	0.18	0.40	118	12.80
19-Feb-10	-*	-	1,300	-	-	-	-	-	
A0111-MW02 102.02 (Decommissioned)	14-Apr-05	20.23	81.79	5,400	-	-	-	-	-
	27-Dec-05	20.21	81.81	3,300	-	-	-	-	-
	7-Apr-06	19.18	82.84	7,600	-	-	-	-	-
	2-Nov-06	22.73	79.29	1,200	6.93	0.21	-	-	12.70
	19-Jun-07	19.83	82.19	4,300	5.43	0.12	-	-	12.30
	16-Nov-07	21.34	80.68	1,800J	6.86	0.21	-	-	13.00
	28-Mar-08	19.45	82.57	3,300	6.31	0.12	0.62	158	11.60
	8-Sep-08	21.72	80.3	791	6.80	0.17	0.51	-7	12.35
	2-Mar-09	20.29	81.73	4,480	5.49	0.10	0.45	60	12.60
	26-Aug-09	21.80	80.22	1,250	5.63	0.19	0.23	15	12.70
17-Feb-10	19.03	82.99	5,200	4.30	0.11	0.75	165	12.00	
A0111-MW03 100 (Decommissioned)	14-Apr-05	18.17	81.83	250U	-	-	-	-	-
	27-Dec-05	18.05	81.95	250U	-	-	-	-	-
	7-Apr-06	17.08	82.92	250U	-	-	-	-	-
	2-Nov-06	20.80	79.2	-	-	-	-	-	-
	19-Jun-07	17.78	82.22	-	-	-	-	-	-
	16-Nov-07	19.25	80.75	-	-	-	-	-	-
	28-Mar-08	17.39	82.61	-	-	-	-	-	-
	8-Sep-08	19.61	80.39	-	-	-	-	-	-
	2-Mar-09	18.25	81.75	-	-	-	-	-	-
	26-Aug-09	19.84	80.16	-	-	-	-	-	-
17-Feb-10	16.97	83.03	-	-	-	-	-	-	
A0111-MW04 230.88	27-Dec-05	20.18	81.93	860	-	-	-	-	-
	7-Apr-06	19.34	82.77	420	-	-	-	-	-
	2-Nov-06	23.21	78.9	780	6.10	0.19	-	-	13.00
	19-Jun-07	20.00	82.11	290	5.54	0.10	-	-	12.10
	16-Nov-07	21.70	80.41	1,700J	6.88	0.16	-	-	13.20
	28-Mar-08	19.61	82.5	100U	6.40	0.09	6.91	257	11.70
8-Sep-08	22.20	79.91	366	6.03	0.16	1.02	160	13.38	

Table 3-2. AOC 8-4 Depth to Water Measurements, TPH-D Concentrations, and Groundwater Parameter Field Measurements (continued)

Well ID TOC Elevation	Date	DTW (ft bgs)	GWELEV (ft AMSL)	TPH-D (µg/L)	pH	Cond. (ms/cm)	DO (ppm)	ORP (mv)	Temp °C
A0111-MW04 230.88 (continued)	2-Mar-09	20.52	81.59	414	6.00	0.12	1.87	191	12.40
	26-Aug-09	22.28	205.10	1,040	5.38	0.49	0.45	89	12.80
	17-Feb-10	19.21	208.17	120U	4.51	0.09	6.59	239	12.20
	24-Aug-10	21.42	205.96	730	Well pumped dry				
	23-Feb-11	18.87	208.51	No sample collected					
	2-Jun-11	19.20	208.27	-	-	-	-	-	-
	8-Sep-11	21.58	205.89	820	5.66	0.25	1.92	198	15.30
	6-Mar-12	19.59	207.88	250	-	-	-	-	-
	16-Aug-12	21.69	205.78	910	7.09	-	3.44	37	14.10
	25-Feb-13	20.04	207.43	1,500	7.00	-	5.57	42	11.60
	13-Aug-13	22.00	208.88	690	Water very turbid, field parameters not measured				
	13-Mar-14	18.00	212.88	350	5.73	0.17	8.26	59.00	12.10
	11-Sep-14	21.95	208.93	1,100	Sample collected by bailer - No parameters				
	A0111-MW05 230.84	27-Dec-05	20.24	81.83	250U	-	-	-	-
7-Apr-06		19.32	82.75	250U	-	-	-	-	-
2-Nov-06		22.88	79.19	-	-	-	-	-	-
19-Jun-07		19.97	82.1	100U	5.68	0.10	-	-	11.60
16-Nov-07		21.52	80.55	-	-	-	-	-	-
28-Mar-08		19.65	82.42	100U	6.59	0.11	6.65	254	11.40
8-Sep-08		21.93	80.14	100U	6.42	0.11	7.34	200	12.33
2-Mar-09		20.47	81.6	100U	6.00	0.12	6.74	359	12.80
26-Aug-09		21.93	205.41	-	-	-	-	-	-
17-Feb-10		19.24	208.10	120U	-	-	-	-	-
27-Aug-10		21.27	206.07	120U	5.0	0.12	6.7	302	13
23-Feb-11		18.93	208.41	No sample collected					
2-Jun-11		18.72	208.23	-	-	-	-	-	-
6-Mar-12		19.18	207.77	120U	-	-	-	-	-
16-Aug-12	21.00	205.95	-	-	-	-	-	-	
25-Feb-13	19.62	207.72	-	-	-	-	-	-	
13-Aug-13	22.75	208.09	-	-	-	-	-	-	
13-Mar-14	17.55	213.29	100U	6.01	0.16	9.43	44.00	11.60	
11-Sep-14	21.24	209.60	-	-	-	-	-	-	
A0111-MW06 227.69	1-Mar-10**	20.50	203.69	250U	-	-	-	-	-
	25-Jun-10	16.65	207.54	120U	4.86	0.14	5.22	53***	12.0
	24-Aug-10	18.00	206.19	120U	5.48	0.15	5.22	356	12.9
	23-Feb-11	Could not locate well							
	2-Jun-11	16.92	208.29	120U	Water very turbid, field parameters not measured				
8-Sep-11	19.15	206.06	170	5.87	0.18	2.02	356	12.90	

Table 3-2. AOC 8-4 Depth to Water Measurements, TPH-D Concentrations, and Groundwater Parameter Field Measurements (continued)

Well ID TOC Elevation	Date	DTW (ft bgs)	GWELEV (ft AMSL)	TPH-D (µg/L)	pH	Cond. (ms/cm)	DO (ppm)	ORP (mv)	Temp °C	
A0111-MW06 227.69 (continued)	18-Nov-11	-	-	120U	-	-	-	-	-	
	6-Mar-12	17.29	207.92	120U	-	-	-	-	-	
	16-Aug-12	19.12	206.09	120U	7.36	-	4.18	28.00	13.60	
	25-Feb-13	17.83	207.38	100	7.00	-	5.45	42.00	11.10	
	13-Aug-13	19.60	208.09	100U	-	-	-	-	-	
	13-Mar-14	15.70	211.99	100U	5.93	0.23	7.05	49.00	11.50	
A0111-MW07 230.88	11-Sep-14	19.53	208.16	34J	Sample collected by bailer - No parameters					
	1-Mar-10**	19.30	207.45	250U	-	-	-	-	-	
	25-Jun-10	19.97	206.78	120U	5.30	0.15	4.16	355	12.8	
	24-Aug-10	21.42	205.33	120U	Very turbid water, never cleared up					
	23-Feb-11	Could not locate well								
	2-Jun-11	19.68	208.20	120U	Water very turbid, field parameters not measured					
	8-Sep-11	22.10	205.78	150	5.15	0.19	1.56	340	13.8	
	18-Nov-11	22.40	205.48	120U	-	-	-	-	-	
	6-Mar-12	20.25	207.63	120	Water very turbid, field parameters not measured					
	16-Aug-12	22.10	205.78	120U	Water very turbid, field parameters not measured					
	25-Feb-13	20.69	207.19	100U	7.27	-	4.41	30.00	11.50	
	13-Aug-13	21.45	209.43	100U	Water very turbid, field parameters not measured					
13-Mar-14	18.50	212.38	100U	6.09	0.22	7.19	42.00	10.80		
11-Sep-14	22.59	208.29	140J	Sample collected by bailer - No parameters						
A0111-MW08 231.24	1-Mar-10**	18.10	209.60	340	-	-	-	-	-	
	25-Jun-10	Well monument broken, casing bent								
	24-Aug-10	21.60	206.10	12,000	-	-	-	-	-	
	23-Feb-11	Well monument and casing broken								
	2-Jun-11	19.36	208.34	1,600	Water very turbid, field parameters not measured					
	8-Sep-11	22.65	205.05	5,200	5.19	0.15	1.58	245.00	14.00	
	18-Nov-11	21.85	205.85	4,600	-	-	-	-	-	
	6-Mar-12	19.86	207.84	610	-	-	-	-	-	
	16-Aug-12	21.96	205.74	280	-	-	-	-	-	
	25-Feb-13	20.25	207.45	280	7.05	-	3.06	40.00	12.50	
13-Aug-13	22.12	209.12	240	Well pumped dry						
13-Mar-14	18.20	213.04	250	6.07	0.19	6.94	41.00	12.40		
11-Sep-14	22.00	209.24	720	Sample collected by bailer - No parameters						
Duplicate	11-Sep-14	22.00	209.24	590	Sample collected by bailer - No parameters					
MTCA Method A Cleanup Level				500						

Table 3-2. AOC 8-4 Depth to Water Measurements, TPH-D Concentrations, and Groundwater Parameter Field Measurements (continued)

Notes:

TOC = Top of casing

DTW (ft bgs) = Depth to water (feet below ground surface)

GWELEV (ft AMSL) = Groundwater elevation (feet above mean sea level)

TPH-D (µg/L) = Diesel-range total petroleum hydrocarbons (micrograms per liter)

Cond. (ms/cm) = Conductivity (microsiemens per centimeter)

DO (ppm) = Dissolved oxygen (parts per million)

ORP (mv) = Oxygen / reduction potential (millivolts)

Temp. (°C) = Temperature (degrees Celsius)

BOLD = Analyte detected at or above laboratory practical quantification limit

BOLD = Analyte detected at or above MTCA Method A cleanup level of 500 µg/L

J = Value estimated

U = Analyte not detected above practical quantification limit reported

- = No data, not applicable

* = Monument was destroyed and casing was bent before DTW was measured. No accurate measurement could be made. Sample was collected using a disposable bailer.

** = Groundwater samples collected by Krazan and Associates after well development.

*** = Cap was on ORP sensor, value is most likely wrong. Monitoring wells A0111-MW04 through A0111-MW08 elevations were re-surveyed on 26 July 2011. New TOC elevations were used to measure groundwater elevations on 02 June 11.

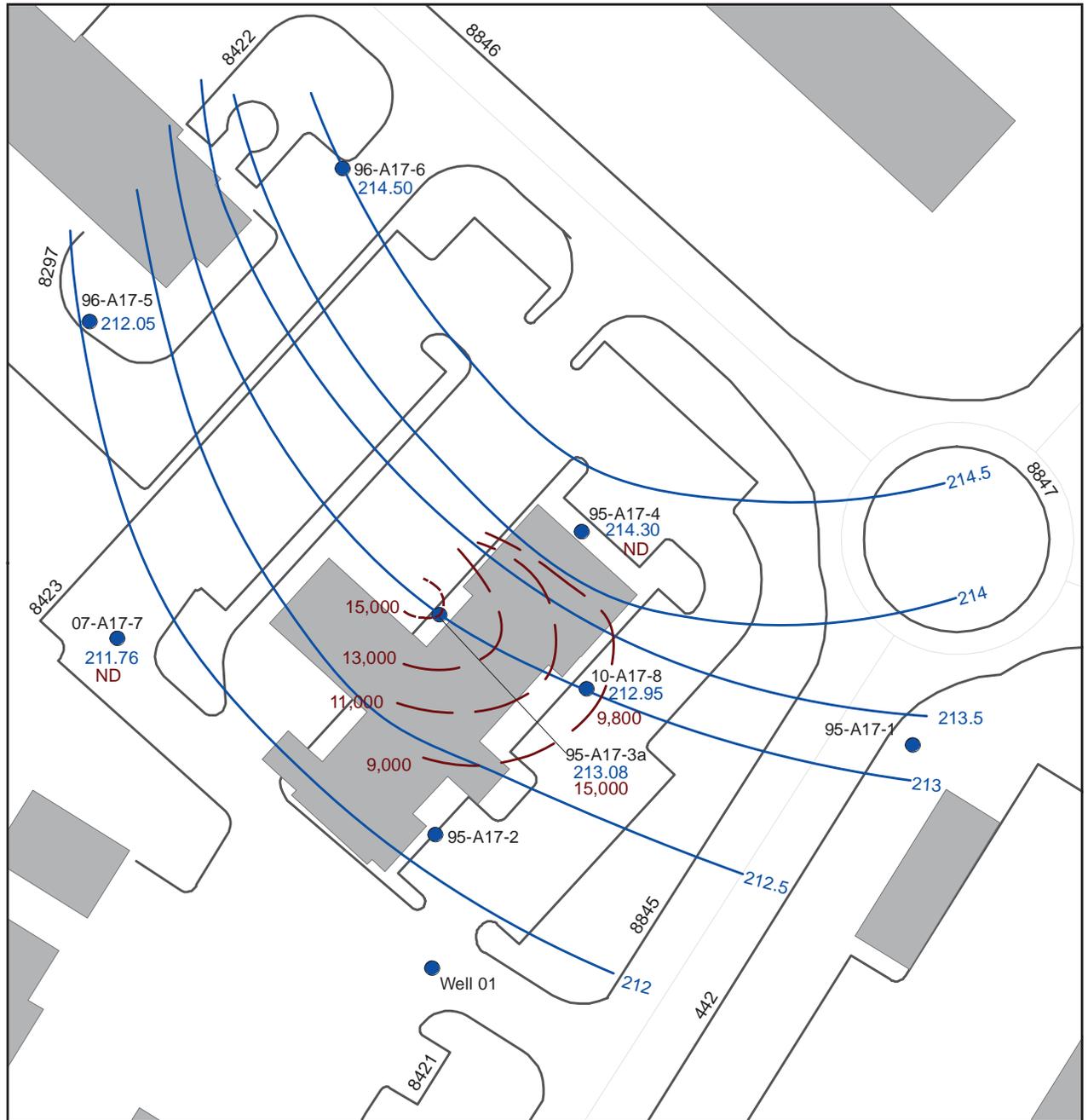
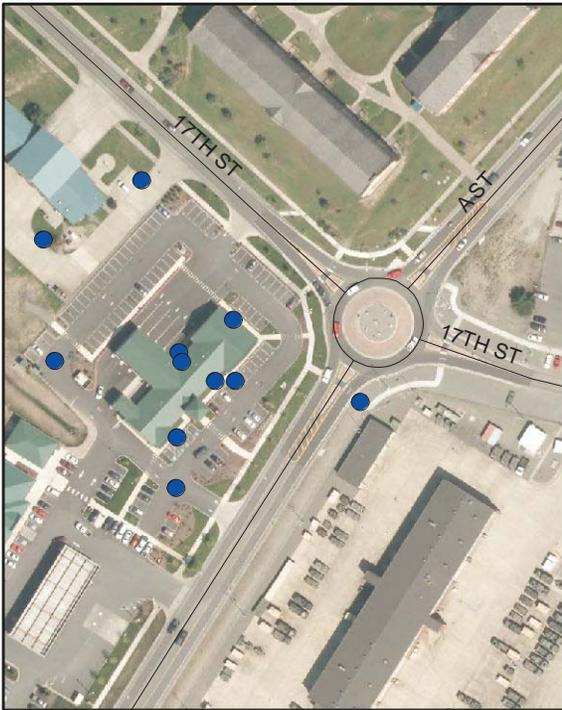
3.3 BUILDING A1033 FORMER UST SITE (AOC 9-2)

Groundwater level and TPH-G concentration iso-contour lines for the March and September sampling events are presented on Figures 3-7 and 3-8 respectively. Table 3-3 presents depth to water and groundwater parameter measurements. Table 3-4 presents TPH-G and BTEX concentrations relative to Ecology's MTCA Method A cleanup levels. Appendix B contains copies of laboratory analytical reports for both groundwater sampling events.

Historically, 95-A17-3A has been considered at or near the source area since it had the highest detected concentrations of TPH-G ranging from 1,400 µg/L (September 2014) to 35,000 µg/L (March 2008). In October 2010, monitoring well 10-A17-8 was completed within the boundary of the historical UST excavation. TPH-G was detected in samples collected from 10-A17-8 ranging from 3,500 µg/L (September 2014) to 74,000 µg/L (November 2011). Samples collected from 95-A17-3A during March and September 2014 had TPH-G detected in them at 15,000 µg/L and 1,400 µg/L respectively. TPH-G was detected at 9,500 µg/L (March) and 3,500 µg/L (September) in samples collected from 10-A17-8. A duplicate sample was collected during the September sampling event from well 10-A17-8. Sample results are consistent with the primary sample (3,700 µg/L).

Benzene concentrations detected in samples collected from 95-A17-3A during 2014 were 36 µg/L (March) and 3.7 µg/L (September). Samples collected from 10-A17-8 had benzene detected in them at 160 µg/L (March) and 46 µg/L (September). A duplicate sample was collected during the September sampling event from well 10-A17-8. Sample results are consistent with the primary sample (50 µg/L).

Both benzene and TPH-G was either not detected or detected below their respective cleanup levels in samples collected from all the other monitoring wells during 2014. Figure 3-9 presents TPH-G and benzene concentrations in monitoring wells at AOC 9-2 over time.



Notes:

Depth to water measurements collected March 10 and 14, 2014.

Groundwater samples collected March 14, 2014.

Legend

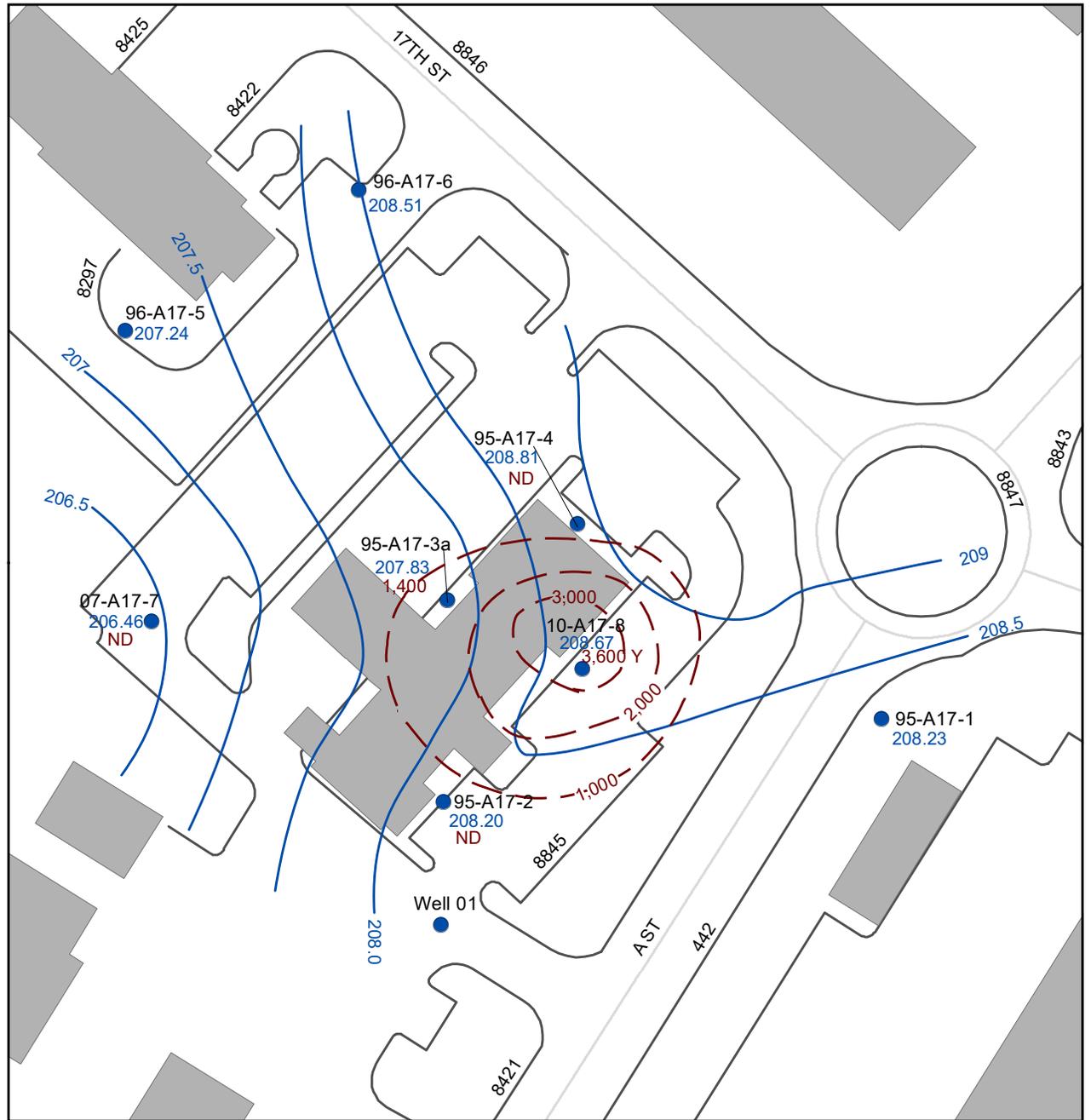
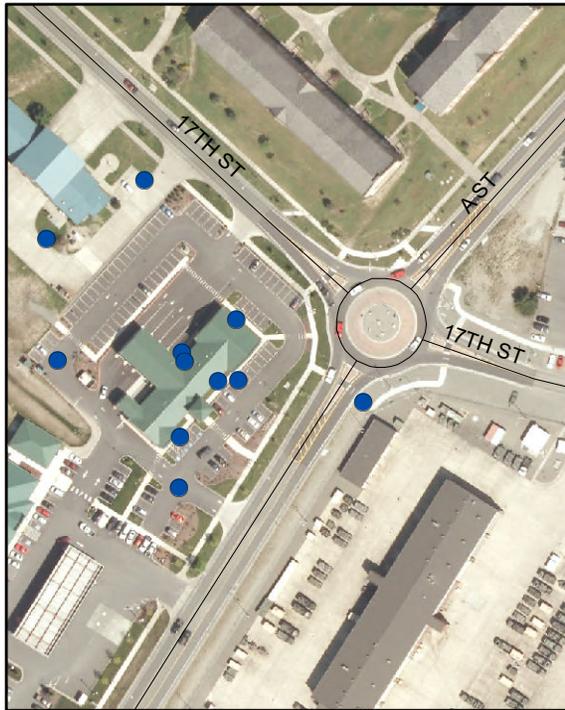
- Monitoring Well
- Groundwater Elevation (fmsl)
- - - TPH-G Concentraion (µg/L)



USACE

SEALASKA

Figure 3-7
AOC 9-2 Groundwater Elevation and
TPH-G Concentration Contours March 2014



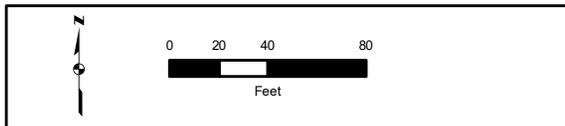
Notes:

Depth to water measurements collected September 16, 2014.

Groundwater samples collected September 22, 2014.

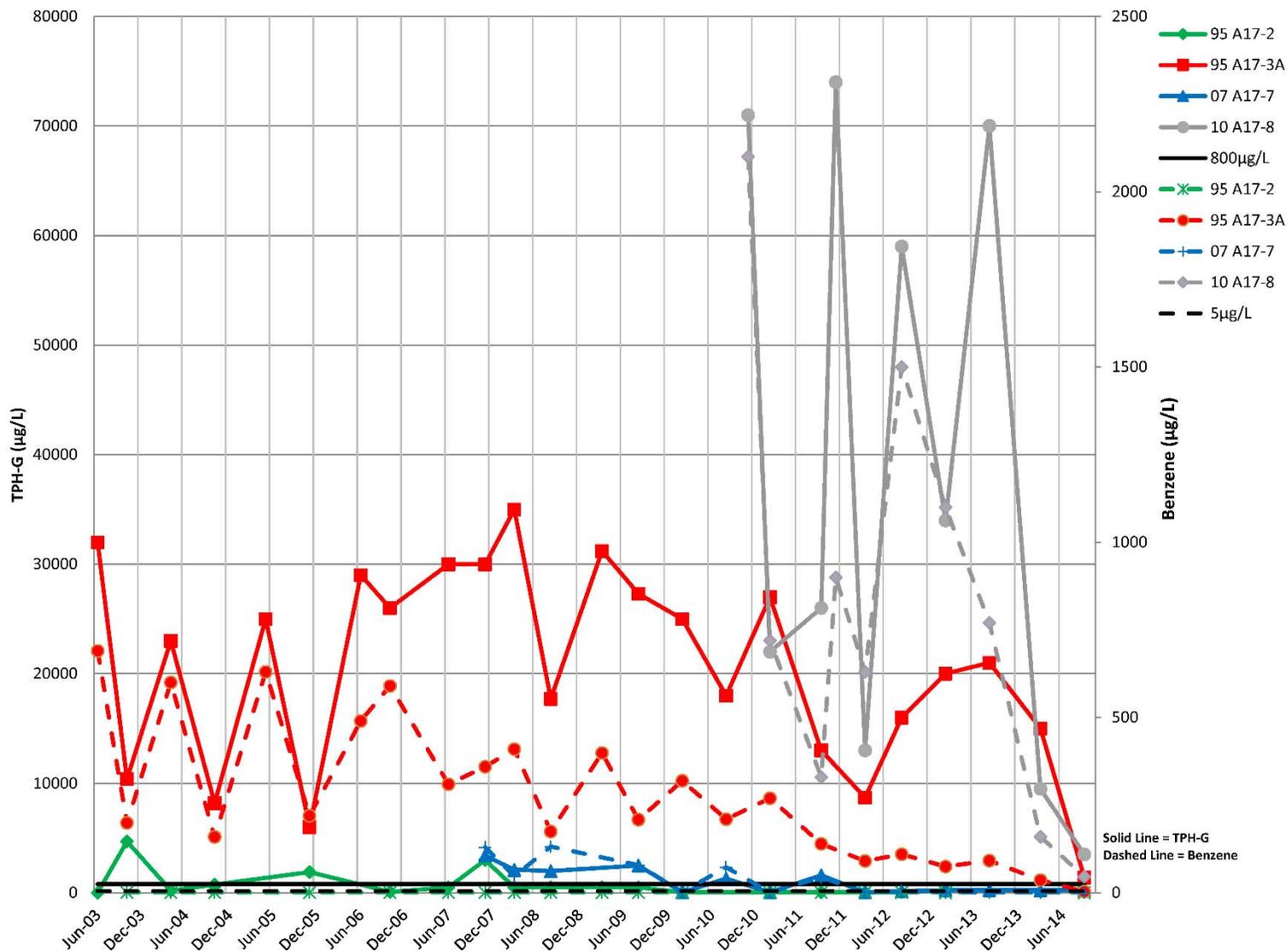
Legend

- Monitoring Well
- Groundwater Elevation (famsl)
- - - TPH-G Concentraion (µg/L)



USACE	SEALASKA	Figure 3-8 AOC 9-2 Groundwater Elevation and TPH-G Concentration Contours September 2014
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Figure 3-9 - TPH-G and Benzene Concentration Trends (AOC 9-2)



3-19

Table 3-3. AOC 9-2 Depth to Water and Groundwater Parameter Measurements

Well ID TOC Elevation	Date	DTW (ft bgs)	GWELEV (ft AMSL)	pH	Cond. (ms/cm)	DO (ppm)	ORP (mv)	Temp °C	
95-A17-1 236.9	1-Aug-95	30.49	204.77	-	-	-	-	-	
	1-Feb-96	24.21	211.05	-	-	-	-	-	
	1-Sep-96	28.2	207.06	-	-	-	-	-	
	1-Mar-97	22.8	212.46	-	-	-	-	-	
	1-Aug-97	26.4	208.86	-	-	-	-	-	
	1-Mar-98	24.06	211.2	-	-	-	-	-	
	1-Sep-98	29.2	206.06	-	-	-	-	-	
	1-Mar-99	21.1	214.16	-	-	-	-	-	
	1-Aug-99	27.01	208.25	-	-	-	-	-	
	1-Mar-00	23.93	211.33	-	-	-	-	-	
	1-Sep-00	28.99	206.27	-	-	-	-	-	
	1-Mar-01	29.51	205.75	-	-	-	-	-	
	1-Aug-02	29.6	205.66	-	-	-	-	-	
	28-Oct-03	30.11	205.15	-	-	-	-	-	
	20-Oct-04	30.94	204.32	-	-	-	-	-	
	9-Nov-05	30.51	204.75	-	-	-	-	-	
	14-Jun-07	26.33	208.93	-	-	-	-	-	
	21-Mar-08	26.33	208.93	-	-	-	-	-	
	8-Aug-08	29.78	205.48	-	-	-	-	-	
	9-Mar-09	27.57	207.69	-	-	-	-	-	
	25-Aug-09	29.87	207.03	-	-	-	-	-	
	22-Feb-10	26.1	210.8	-	-	-	-	-	
	24-Aug-10	28.6	208.3	-	-	-	-	-	
	24-Feb-11	25.1	211.8	-	-	-	-	-	
	9-Sep-11				Could Not Locate				
	14-Mar-12	25.5	211.4	-	-	-	-	-	
16-Aug-12	27.9	209	-	-	-	-	-		
21-Feb-13	24.28	212.62	-	-	-	-	-		
13-Aug-13	28.8	208.1	-	-	-	-	-		
10-Mar-14	23.6	213.3	-	-	-	-	-		
22-Sep-14	28.67	208.23	-	-	-	-	-		
95-A17-2 235.9	1-Aug-95	30.2	204.59	-	-	-	-	-	
	1-Feb-96	24.24	210.55	-	-	-	-	-	
	1-Sep-96	27.71	207.08	-	-	-	-	-	
	1-Mar-97	22.34	212.45	-	-	-	-	-	
	1-Aug-97	26.08	208.71	-	-	-	-	-	
	1-Mar-98	23.82	210.97	-	-	-	-	-	
	1-Sep-98	28.7	206.09	-	-	-	-	-	
	1-Mar-99	20.6	214.19	-	-	-	-	-	
	1-Aug-99	26.55	208.24	-	-	-	-	-	
	1-Mar-00	23.49	211.30	-	-	-	-	-	
	1-Sep-00	28.51	206.28	-	-	-	-	-	
	1-Mar-01	29.09	205.70	-	-	-	-	-	
	1-Aug-02	28.92	205.87	-	-	-	-	-	
	28-Oct-03	29.65	205.14	-	-	-	-	-	
	28-Apr-04	27.97	206.82	-	-	-	-	-	
	20-Oct-04	30.47	204.32	-	-	-	-	-	
9-Nov-05	30	204.79	-	-	-	-	-		

Table 3-3. AOC 9-2 Depth to Water and Groundwater Parameter Measurements (continued)

Well ID TOC Elevation	Date	DTW (ft bgs)	GWELEV (ft AMSL)	pH	Cond. (ms/cm)	DO (ppm)	ORP (mv)	Temp °C	
95-A17-2 235.9 (continued)	31-Oct-06	30.38	204.41	6.89	0.155	-	-	13.30	
	14-Jun-07	26.03	208.76	6.90	0.153	-	-	13.30	
	21-Mar-08	26.02	208.77	7.32	0.139	-	-	12.43	
	8-Aug-08	29.37	205.42	7.19	0.114	1.45	195.33	12.57	
	9-Mar-09	27.21	207.58	7.24	0.124	0.62	148.75	13.33	
	25-Aug-09	29.49	206.41	6.66	0.106	0.76	252.00	13.10	
	22-Feb-10	25.5	210.40	-*	-	-	-	-	
	24-Aug-10	27.82	208.08	-*	-	-	-	-	
	24-Feb-11	24.4	211.50	5.48*	0.126	3.06	-	12.80	
	9-Sep-11	27.25	208.65	6.27	0.111	3.60	230.00	16.00	
	14-Mar-12	24.73	211.17	-	-	5.96	26.00	11.20	
	16-Aug-12	27.03	208.87	-	-	-	-	-	
	21-Feb-13	25.37	210.53	7.45	-	5.07	23.00	13.20	
	13-Aug-13	28.4	207.50	6.60	0.176	0.47	24.00	13.60	
	10-Mar-14	Low Water Level, Unable to Collect Sample							
	22-Sep-14	27.7	208.20	6.50	0.147	5.90	173.00	17.20	
	95-A17-3A 235.9	1-Aug-95	30.41	204.81	-	-	-	-	-
1-Feb-96		24.65	210.57	-	-	-	-	-	
1-Sep-96		28.06	207.16	-	-	-	-	-	
1-Mar-97		22.31	212.91	-	-	-	-	-	
1-Aug-97		26.1	209.12	-	-	-	-	-	
1-Mar-98		23.51	211.71	-	-	-	-	-	
1-Sep-98		28.7	206.52	-	-	-	-	-	
1-Mar-99		20	215.22	-	-	-	-	-	
1-Aug-99		26.44	208.78	-	-	-	-	-	
1-Mar-00		23.16	212.06	-	-	-	-	-	
1-Sep-00		28.54	206.68	-	-	-	-	-	
1-Mar-01		29.51	205.71	-	-	-	-	-	
1-Aug-02		29.14	206.08	-	-	-	-	-	
30-Jun-03		28.94	206.28	-	-	-	-	-	
28-Oct-03		29.85	205.37	-	-	-	-	-	
28-Apr-04		28.06	207.16	-	-	-	-	-	
20-Oct-04		30.88	204.34	-	-	-	-	-	
24-May-05		28.75	206.47	-	-	-	-	-	
9-Nov-05		30.32	204.90	-	-	-	-	-	
14-Jun-06		26.99	208.23	-	-	-	-	-	
31-Oct-06		30.86	204.36	6.49	0.253	-	-	12.60	
14-Jun-07		26.09	209.13	6.51	0.252	-	-	12.60	
21-Nov-07		29.21	206.01	6.05	0.205	-	-	13.00	
21-Mar-08		26	209.22	7.35	0.237	0.70	-	12.37	
8-Aug-08		29.42	205.80	7.16	0.214	0.97	-25.75	12.28	
9-Mar-09		27.07	208.15	7.04	0.227	0.71	-177.00	12.88	
25-Aug-09		29.46	206.44	6.03	0.199	0.77	233.00	13.10	
22-Feb-10		25.6	210.30	6.52	0.205	0.47	-196.00	12.80	
23-Aug-10	29.1	206.80	4.80	0.200	1.17	-125.00	13.10		
24-Feb-11	24.55	211.35	5.86	0.191	0.73	-	13.00		
9-Sep-11	27.62	208.28	6.07	0.177	4.87	-98.00	14.40		
14-Mar-12	24.85	211.05	-	-	-	-	-		

Table 3-3. AOC 9-2 Depth to Water and Groundwater Parameter Measurements (continued)

Well ID TOC Elevation	Date	DTW (ft bgs)	GWELEV (ft AMSL)	pH	Cond. (ms/cm)	DO (ppm)	ORP (mv)	Temp °C
95-A17-3A 235.9 (continued)	16-Aug-12	27.47	208.43	-	-	-	-	-
	21-Feb-13	25.66	210.24	-	-	-	-	-
	13-Aug-13	27.85	208.05	-	-	-	-	-
	14-Mar-14	22.9	213.00	6.36	0.223	7.70	26.00	13.60
	23-Sep-14	28.07	207.83	6.30	0.147	2.90	42.00	14.70
95-A17-4 236.8	1-Aug-95	29.91	205.24	-	-	-	-	-
	1-Feb-96	23.65	211.50	-	-	-	-	-
	1-Sep-96	27.56	207.59	-	-	-	-	-
	1-Mar-97	21.75	213.40	-	-	-	-	-
	1-Aug-97	25.85	209.30	-	-	-	-	-
	1-Mar-98	23.35	211.80	-	-	-	-	-
	1-Sep-98	28.7	206.45	-	-	-	-	-
	1-Mar-99	19.7	215.45	-	-	-	-	-
	1-Aug-99	26.33	208.82	-	-	-	-	-
	1-Mar-00	22.93	212.22	-	-	-	-	-
	1-Sep-00	28.1	207.05	-	-	-	-	-
	1-Mar-01	29.05	206.10	-	-	-	-	-
	1-Aug-02	29.04	206.11	-	-	-	-	-
	28-Oct-03	29.51	205.64	-	-	-	-	-
	20-Oct-04	30.5	204.65	-	-	-	-	-
	9-Nov-05	29.8	205.35	-	-	-	-	-
	14-Jun-07	25.72	209.43	-	-	-	-	-
	21-Mar-08	25.77	209.38	6.15	0.13	-	-	14.37
	8-Aug-08	29.31	205.84	7.15	0.14	6.81	130.00	12.00
	9-Mar-09	26.91	208.24	7.12	0.14	7.03	228.25	13.83
	25-Aug-09	29.32	207.48	-	-	-	-	-
	21-Feb-10	25.38	211.42	5.95	0.14	4.97	285.00	13.30
	24-Aug-10	27.95	208.85	-	-	-	-	-
	24-Feb-11	24.37	212.43	6.01	0.14	6.91	-	13.30
	9-Sep-11	27.45	209.35	6.09	0.13	5.90	353.00	14.30
	14-Mar-12	24.89	211.91	-	-	6.36	26.00	11.20
	16-Aug-12	27.29	209.51	-	-	-	-	-
21-Feb-13	25.49	211.31	6.69	-	6.47	-146.00	13.50	
13-Aug-13	27.85	208.95	-	-	-	-	-	
14-Mar-14	22.5	214.30	6.26	0.18	8.55	32.00	13.50	
23-Sep-14	27.99	208.81	-	-	-	-	-	
96-A17-5 233.9	1-Feb-96	22.44	211.14	-	-	-	-	-
	1-Sep-96	26.2	207.38	-	-	-	-	-
	1-Mar-97	20.75	212.83	-	-	-	-	-
	1-Aug-97	24.6	208.98	-	-	-	-	-
	1-Mar-98	22.25	211.33	-	-	-	-	-
	1-Sep-98	27.3	206.28	-	-	-	-	-
	1-Mar-99	18.9	214.68	-	-	-	-	-
	1-Aug-99	25.05	208.53	-	-	-	-	-
	1-Mar-00	21.92	211.66	-	-	-	-	-
	1-Sep-00	27.07	206.51	-	-	-	-	-
	1-Mar-01	27.76	205.82	-	-	-	-	-
1-Aug-02	27.68	205.90	-	-	-	-	-	

Table 3-3. AOC 9-2 Depth to Water and Groundwater Parameter Measurements (continued)

Well ID TOC Elevation	Date	DTW (ft bgs)	GWELEV (ft AMSL)	pH	Cond. (ms/cm)	DO (ppm)	ORP (mv)	Temp °C
96-A17-5 233.9 (continued)	28-Oct-03	28.3	205.28	-	-	-	-	-
	9-Nov-05	28.47	205.11	-	-	-	-	-
	14-Jun-07	24.47	209.11	-	-	-	-	-
	21-Mar-08	24.48	209.10	-	-	-	-	-
	8-Aug-08	27.93	205.65	-	-	-	-	-
	9-Mar-09	25.71	207.87	-	-	-	-	-
	25-Aug-09	28.03	205.87	-	-	-	-	-
	21-Feb-10	24.29	209.61	-	-	-	-	-
	24-Aug-10	26.66	207.24	-	-	-	-	-
	24-Feb-11	23.26	210.64	-	-	-	-	-
	9-Sep-11	26.15	207.75	-	-	-	-	-
	14-Mar-12	25.7	208.20	-	-	-	-	-
	16-Aug-12	26.01	207.89	-	-	-	-	-
	21-Feb-13	24.28	209.62	-	-	-	-	-
	13-Aug-13	26.93	206.97	-	-	-	-	-
	10-Mar-14	21.85	212.05	-	-	-	-	-
23-Sep-14	26.66	207.24	-	-	-	-	-	
96-A17-6 235.1	1-Feb-96	22.95	209.66	-	-	-	-	-
	1-Mar-01	28.18	204.43	-	-	-	-	-
	28-Oct-03	27.25	205.36	-	-	-	-	-
	9-Nov-05	27.41	205.20	-	-	-	-	-
	14-Jun-07	23.41	209.20	-	-	-	-	-
	21-Mar-08	23.43	209.18	-	-	-	-	-
	8-Aug-08	26.91	205.70	-	-	-	-	-
	9-Mar-09	24.62	207.99	-	-	-	-	-
	25-Aug-09	26.98	208.12	-	-	-	-	-
	21-Feb-10	23.2	211.90	-	-	-	-	-
	24-Aug-10	25.5	209.60	-	-	-	-	-
	25-Feb-11	22.14	212.96	-	-	-	-	-
	9-Sep-11	25.11	209.99	-	-	-	-	-
	14-Mar-12	22.56	212.54	-	-	-	-	-
	16-Aug-12	24.93	210.17	-	-	-	-	-
	21-Feb-13	23.2	211.90	-	-	-	-	-
13-Aug-13	25.85	209.25	-	-	-	-	-	
10-Mar-14	20.6	214.50	-	-	-	-	-	
23-Sep-14	26.59	208.51	-	-	-	-	-	
07-A17-7 233.2	16-Nov-07	27.85	206.20	7.27	0.170	-	-	12.80
	26-Mar-08	24.88	209.17	7.18	0.138	0.79	38.33	12.67
	26-Aug-08	28.33	205.72	7.25	0.161	0.35	-158.25	12.85
	3-Mar-09	26.09	207.96	-	-	-	-	-
	25-Aug-09	28.46	204.74	6.70	0.132	0.23	172	13.20
	21-Feb-10	24.30	208.90	5.82	0.067	0.24	131	11.9
	24-Aug-10	26.71	206.49	5.64	0.132	0.37	76	14.1
	24-Feb-11	23.20	210.00	5.24	0.038	5.66	-	10.6
	9-Sep-11	26.20	207.00	6.05	0.125	1.82	243	16.5
14-Mar-12	23.63	209.57	-	-	6.8	26	9.5	
16-Aug-12	26.02	207.18	7.34	-	1.06	28	18.6	

Table 3-3. AOC 9-2 Depth to Water and Groundwater Parameter Measurements (continued)

Well ID TOC Elevation	Date	DTW (ft bgs)	GWELEV (ft AMSL)	pH	Cond. (ms/cm)	DO (ppm)	ORP (mv)	Temp °C
07-A17-7 233.2 (continued)	21-Feb-13	24.28	208.92	7.48	-	2.49	22	9.9
	13-Aug-13	27.00	206.20	5.97	0.099	0.59	57	13.3
	14-Mar-14	21.45	211.75	5.97	0.059	6.3	46	11.6
	23-Sep-14	26.74	206.46	6.2	0.101	2	2	14
10-A17-8 235.8	29-Nov-10	26.87	208.93	-	-	-	-	-
	25-Feb-11	24.30	211.50	-	-	-	-	-
	9-Sep-11	26.68	209.12	5.82	0.208	1.99	230	16
	18-Nov-11	29.00	206.80	-	-	-	-	-
	14-Mar-12	24.81	210.99	-	-	-	-	-
	16-Aug-12	27.18	208.62	-	-	-	-	-
	21-Feb-13	25.53	210.27	-	-	-	-	-
	13-Aug-13	28.02	207.78	6.6	0.176	0.48	24	13.6
	10-Mar-14	22.85	212.95	6.01	-	2	47	14.7
	22-Sep-14	27.13	208.67	6.4	0.159	4.4	-21	18.9
Duplicate	22-Sep-14	27.13	208.67	6.4	0.159	4.4	-21	18.9

Notes:

TOC = Top of casing

DTW (ft bgs) = Depth to water (feet below ground surface)

GWELEV (ft AMSL) = Groundwater elevation (feet above mean sea level)

Cond. (ms/cm) = Conductivity (microsiemens per centimeter)

DO (ppm) = Dissolved oxygen (parts per million)

ORP (mv) = Oxygen / reduction potential (millivolts)

Temp. (°C) = Temperature (degrees Celsius)

- = No data, not applicable

* = Pump is broken and caught in well. Well casing is possibly bent. Sample collected using a disposable bailer.

New TOC elevations surveyed on 11 June 2010 were used beginning with August 2009 data.

Table 3-4. MTCA Method A Cleanup Levels for TPH-G and BTEX Concentrations

Well ID	Date	TPH-G (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	
95-A17-1	28-Oct-03	100U	0.5U	0.5U	0.5U	1U	
	20-Oct-04	100U	1U	1U	1U	3U	
	9-Nov-05	100U	1U	1U	1U	3U	
95-A17-2	28-Oct-03	4,700	1.6	2.9	102	184	
	28-Apr-04	200U	1	1U	1	3U	
	20-Oct-04	760	1	1U	18	2	
	9-Nov-05	1,900	1U	2	54	67	
	31-Oct-06	100U	1U	1U	1U	3U	
	14-Jun-07	500U	1U	1U	1U	3U	
	7-Nov-07	3,000	1U	1	12	12	
	8-Mar-08	500U	1U	1U	1U	3U	
	26-Aug-08	500U	1U	1U	1U	3U	
	9-Mar-09	500U	1U	1U	1U	3U	
	25-Aug-09	500U	1U	1U	1U	3U	
	26-Mar-10	50U	1U	1U	1U	3U	
	24-Aug-10	No Sample Collected					
	24-Feb-11	50U	1U	1U	1U	3U	
	9-Sep-11	50U	1U	1U	1U	3U	
	14-Mar-12	50U	1U	1U	1U	2U	
	16-Aug-12	50U	1U	1U	1U	2U	
	21-Feb-13	250U	0.20U	0.20U	0.20U	0.40U	
	13-Aug-13	No Sample Collected					
	10-Mar-14	No Sample Collected					
	22-Sep-14	250U	0.5U	0.080J	0.5U	0.5U	
	95-A17-3A	30-Jun-03	32,000	690	1,200	1,100	4,800
28-Oct-03		10,400	200	270	270	1,200	
28-Apr-04		23,000	600	800	780	3,500	
20-Oct-04		8,200	160	100	310	740	
24-May-05		25,000	630	650	810	3,400	
9-Nov-05		6,000	220	170	280	940	
14-Jun-06		29,000	490	500	840	4,000	
31-Oct-06		26,000	590	380	840	3,000	
14-Jun-07		30,000	310	360	610	2,700	
7-Nov-07		30,000	360	270	730	2,700	
8-Mar-08		35,000	410	400	870	3,600	
26-Aug-08		17,700	175	162	517	1,819	
9-Mar-09		31,200	399	335	772	2,762	
25-Aug-09		27,300	209	245	629	2,370	
22-Feb-10		25,000	320	390	990	3,650	
24-Aug-10*		1,300	73	12	42	24	
24-Feb-11		27,000	270	350	1,100	3,970	
9-Sep-11	13,000	140	110	480	1,620		
14-Mar-12	8,700	91	170	350	330		

Table 3-4. MTCA Method A Cleanup Levels for TPH-G and BTEX Concentrations
 (continued)

Well ID	Date	TPH-G (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	
95-A17-3A (continued)	16-Aug-12	16,000	110	240	610	2,440	
	21-Feb-13	20,000	75	190	480	1,880	
	13-Aug-13**	21,000	92	460	460	2,100	
	14-Mar-14	15,000	36	100	230	1,210	
	23-Sep-14	1,400	3.7	15	16	216	
95-A17-4	28-Oct-03	100U	0.5U	0.5U	0.5U	1U	
	20-Oct-04	100U	1U	1U	1U	3U	
	9-Nov-05	100U	1U	1U	1U	3U	
	14-Jun-07	500U	1U	1U	1U	3U	
	8-Mar-08	500U	1U	1U	1U	3U	
	26-Aug-08	300	1U	1U	1U	3U	
	9-Mar-09	500U	1U	1U	1U	3U	
	21-Feb-10	50U	1U	1U	1U	3U	
	9-Sep-11	50U	1U	1U	1U	3U	
	14-Mar-12	50U	1U	1U	1U	2U	
96-A17-5	21-Feb-13	250U	0.20U	0.20U	0.20U	0.40U	
	14-Mar-14	250U	0.20U	0.20U	0.20U	0.40U	
Duplicate	28-Oct-03	100U	0.5U	0.5U	0.5U	1U	
	9-Nov-05	100U	1U	1U	1U	3U	
	7-Nov-07	3,400	130	6.8	130	31	
	8-Mar-08	2,100	47	3.8	120	8.3	
	26-Aug-08	1,990	132	5.7	199	4.6	
	25-Aug-09	2,500U	79.1	5U	94.1	15U	
	25-Aug-09	2,500U	79.5	5U	95	15U	
07-A17-7	21-Feb-10	50U	2.5	1U	1U	3U	
	24-Aug-10*	18,000	210	220	690	2,500	
	24-Feb-11	50U	1U	1U	1U	3U	
	9-Sep-11	1,600	44	15	79	46	
	14-Mar-12	50U	1U	1U	1U	2U	
	16-Aug-12	150	4.7	3.9	1U	3U	
	21-Feb-13	250U	0.20U	1.6	0.20U	0.40U	
	13-Aug-13	250U	0.6	0.85	0.2U	0.4U	
	Duplicate	13-Aug-13	250U	0.57	0.63	0.25	0.4U
	14-Mar-14	250U	0.20U	0.25	0.20U	0.4U	
10-A17-8	23-Sep-14	250U	0.5U	0.5U	0.5U	0.5U	
	29-Nov-10	71,000	2,100	8,400	1,900	9,600	
	Duplicate	25-Feb-11	22,000	720	1,000	490	2,220
	25-Feb-11	21,000	730	1,100	490	2,210	
	9-Sep-11	26,000	330	300	740	4,200	
	18-Nov-11	74,000	900	6,200	2,200	11,500	
	14-Mar-12	19,000	710	1,300	490	2,000	
	22-May-12	13,000	630	830	350	2,050	

Table 3-4. MTCA Method A Cleanup Levels for TPH-G and BTEX Concentrations
 (continued)

Well ID	Date	TPH-G (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
10-A17-8 (continued)	16-Aug-12	59,000	1,500	3,400	1,600	8,800
	21-Feb-13	34,000	1,100	2,000	640	3,700
	13-Aug-13	70,000	770	3,600	1,700	8,900
	10-Mar-14	9,500	160	330	160	1,030
	22-Sep-14	3,500	46	90	61	410
Duplicate	22-Sep-14	3,700	50	110	65	440
MTCA Cleanup Level		800	5	1,000	700	1,000

Notes:

TPH-G = Gasoline-range total petroleum hydrocarbons

µg/L = Micrograms per liter

BOLD = Analyte detected above practical quantification limit

BOLD = Analyte detected above MTCA Method A cleanup level

U = Analyte not detected above practical quantification limit reported

- = No data, not applicable

* = It is suspected that these samples' labels were switched.

** = Sample was labelled as 95-A17-2 by mistake.

3.4 GAAF FUEL FACILITY (AOC 10-8)

Groundwater level iso-contour lines and TPH-D concentrations detected in monitoring wells at AOC 10-8 B05 for the March and September 2014 sampling events are presented on Figures 3-10 and 3-11 respectively. Table 3-5 presents depth to water measurements, TPH-D concentrations, and groundwater parameter field measurements for AOC 10-8. TPH-D concentrations are compared to Ecology's MTCA Method A cleanup level of 500 µg/L. Appendix B contains copies of laboratory analytical reports for both groundwater sampling events.

Historically, AOC 10-8-B05 has been considered at or near the source area since it has the highest detected concentrations of TPH-D. Concentrations of TPH-D decrease to non-detectable amounts in down gradient well AOC 10-8-MW02 to the northwest. Prior to the well being paved over in 2007, TPH-D was non-detect in down gradient well AOC 10-8-MW04 located approximately 30 feet northwest of AOC 10-8-B05.

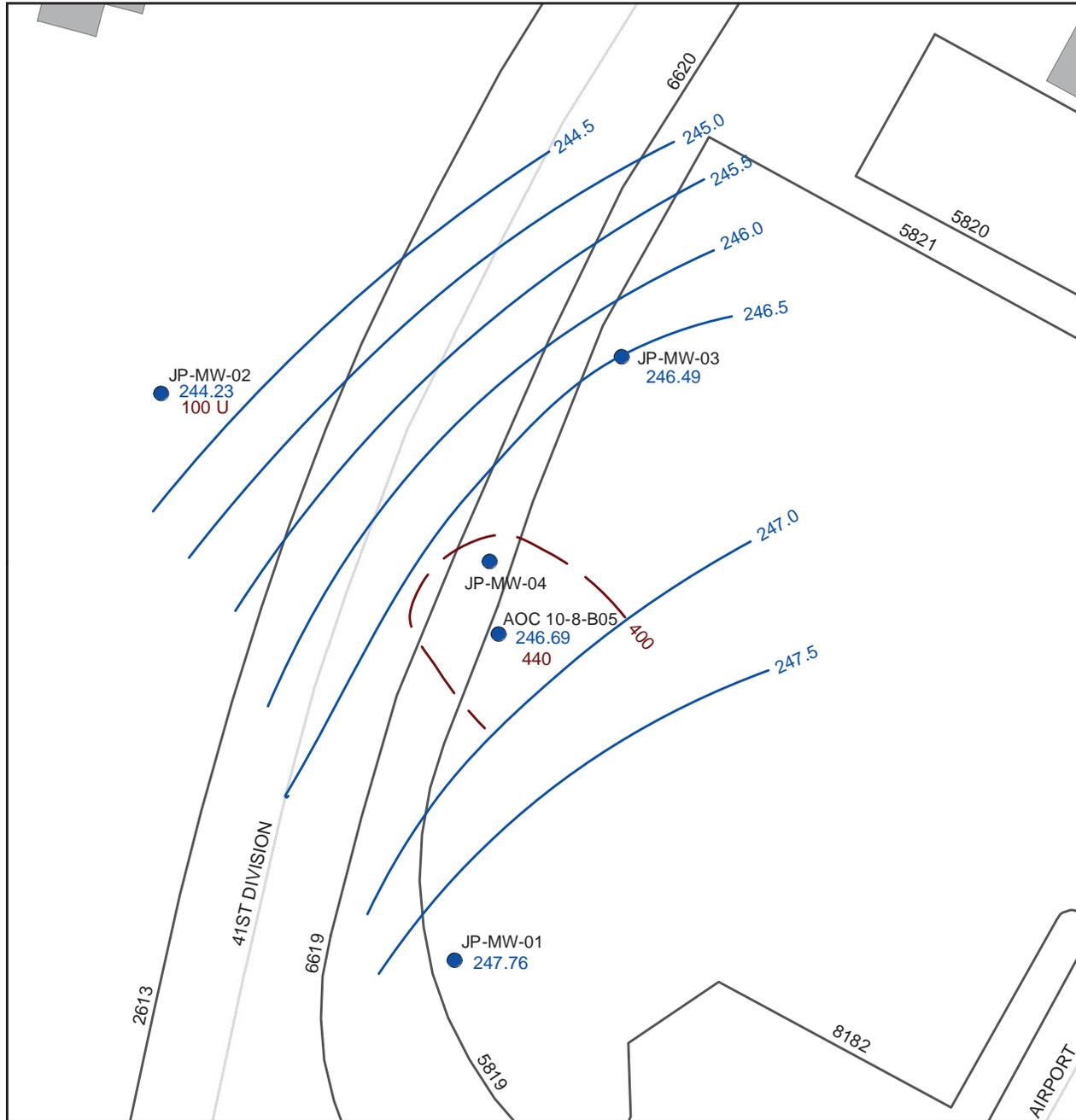
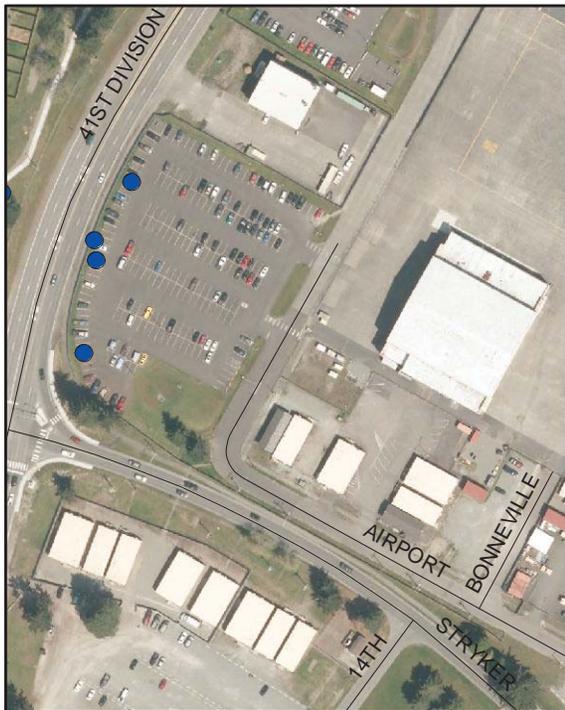
Results from the 2014 groundwater sampling events are generally consistent with results from previous events. TPH-D remains in AOC 10-8-B05 at concentrations above the MTCA Method A groundwater cleanup level. The concentration fell below the MTCA Method A cleanup levels for the first time in March 2014 (440 µg/L), but rose again in the September sampling event (1,700 µg/L). Concentrations have been generally decreasing since September 2009. Figure 3-12 presents TPH-D concentrations in AOC 10-8-B05 over time.

3.5 DESCRIPTIVE STATISTICS

Summary statistics were calculated using Microsoft Excel's Descriptive Statistics tool. Results are presented in Table 3-6. No constituents were detected at their highest concentrations in samples collected during 2014 at any of the four sites.

3.6 DATA QUALITY REVIEW AND VERIFICATION

The data quality review and verification documentation is included in Appendix C. Data quality objectives for both groundwater events were met. The data is deemed acceptable for use and comparison with other site data.



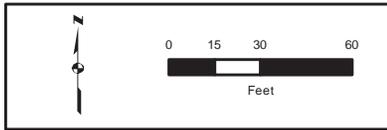
Notes:

Depth to water measurements collected March 10 and 14 2014.

Groundwater samples collected March 14, 2014.

Legend

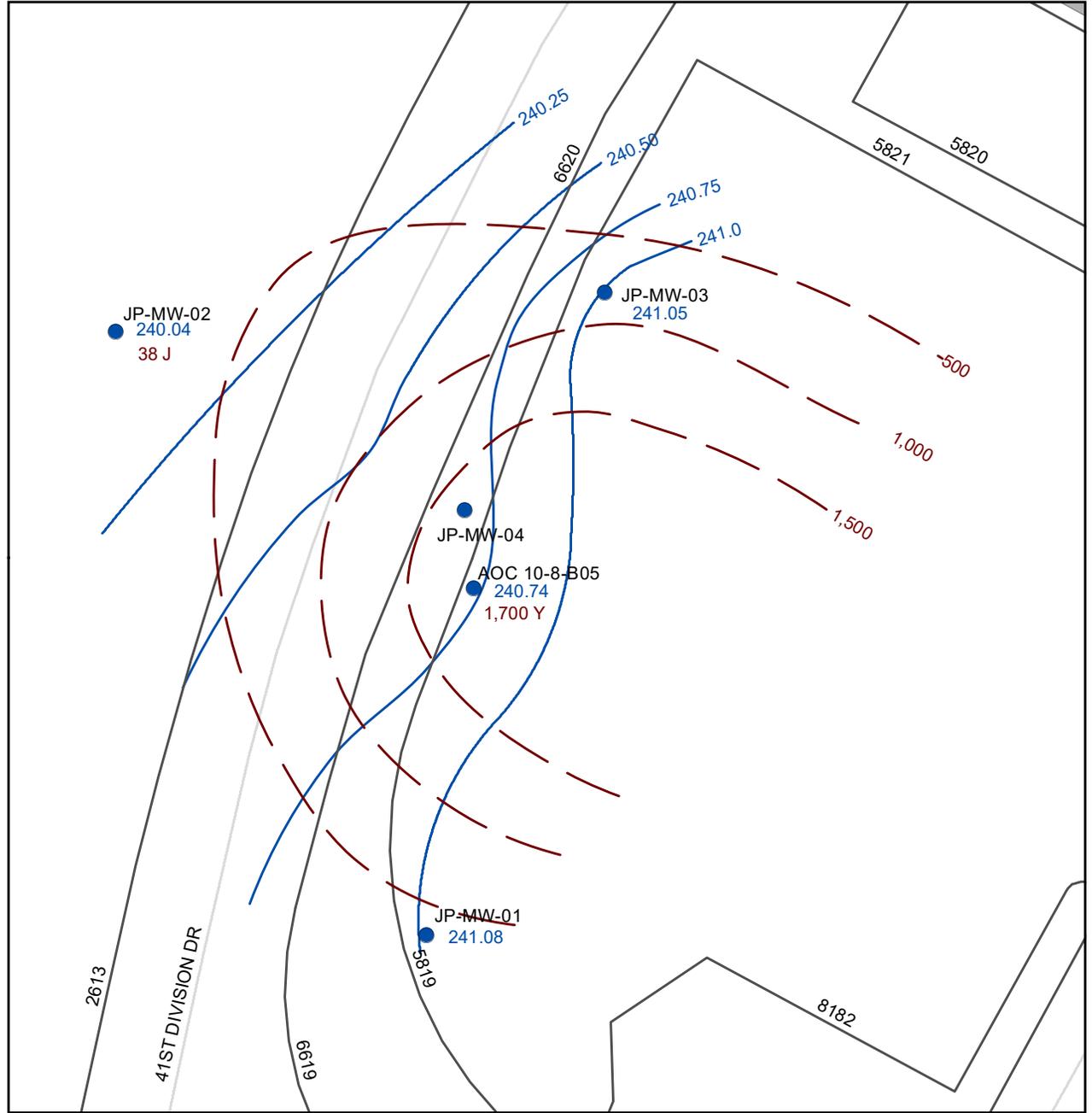
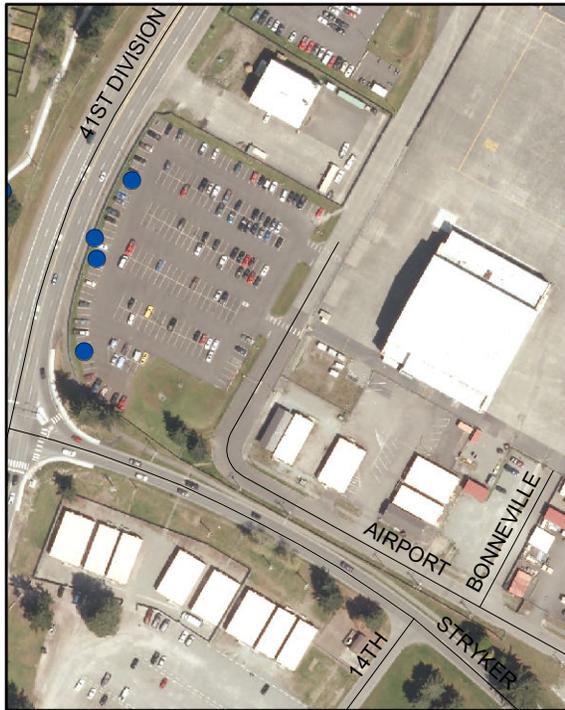
- Monitoring Well
- Groundwater Elevation (famsl)
- - - TPH-D Concentraion ($\mu\text{g/L}$)



USACE

SEALASKA

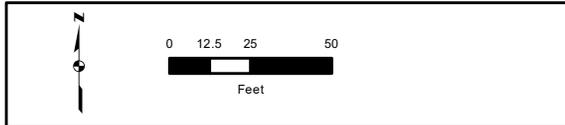
Figure 3-10
AOC 10-8 Groundwater Elevation and
TPH-D Concentration Contours March 2014



Notes:
 Depth to water measurements and groundwater samples collected Septemeber 25, 2014.

Legend

- Monitoring Well
- Groundwater Elevation (famsl)
- - - TPH-D Concentraion (µg/L)



USACE	SEALASKA	Figure 3-11 AOC 10-8 Groundwater Elevation and TPH-D Concentration Contours September 2014
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Figure 3-12 - TPH-D Concentration Trend in AOC 10-8-B05 (AOC 10-8)

3-31

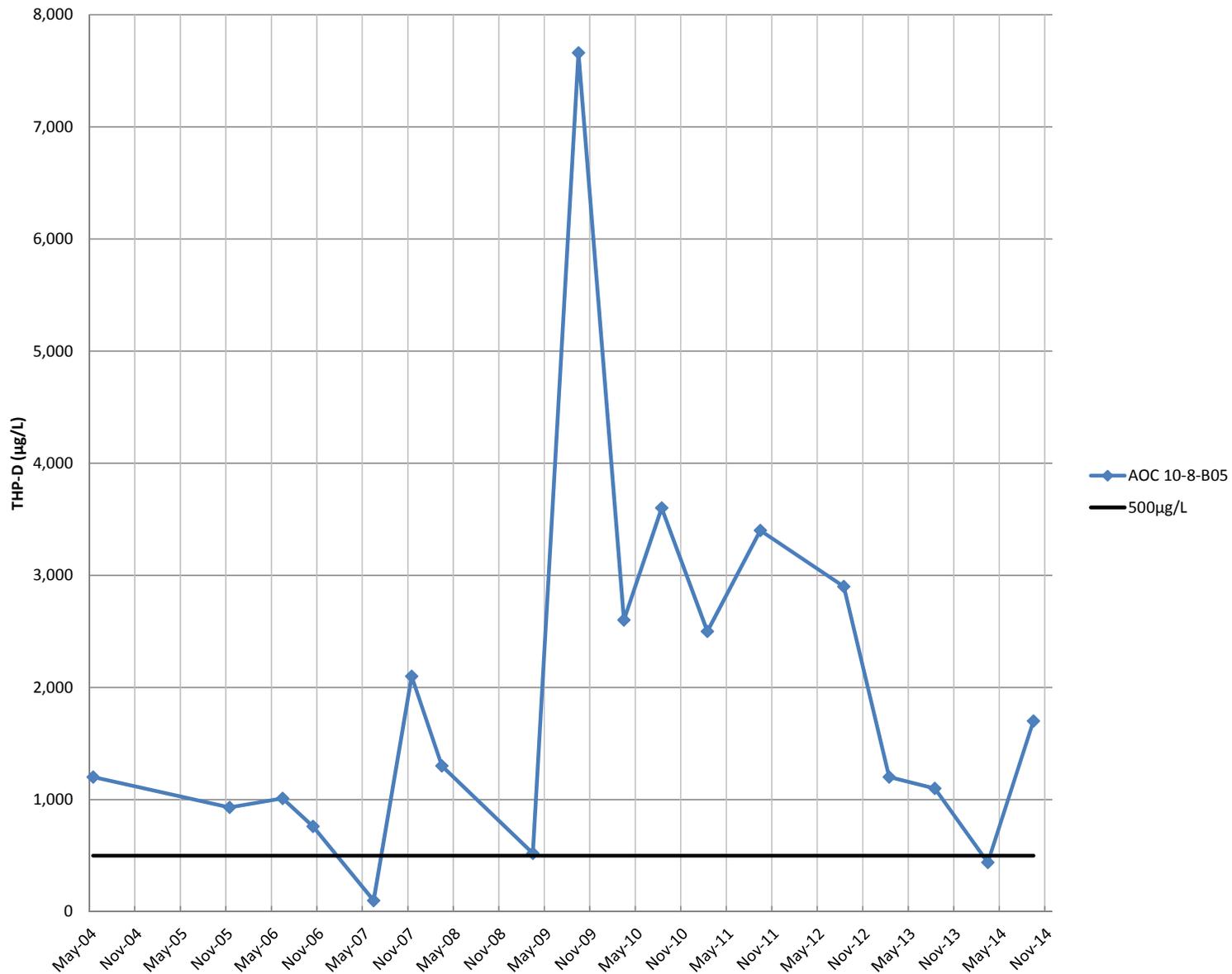


Table 3-5. GAAF Fuel Facility (AOC 10-8) Depth to Water Measurements

Well ID TOC Elevation	Date	DTW (ft bgs)	GWELEV (ft AMSL)	TPH-D (µg/L)	pH	Cond. (ms/cm)	DO (ppm)	ORP (mv)	Temp °C	
JP-MW01 281.56	1-Jun-93	42.1	239.46	250U	-	-	-	-	-	
	1-Dec-93	45.94	235.62	250U	-	-	-	-	-	
	1-Mar-94	43.84	237.72	250U	-	-	-	-	-	
	1-Jun-94	44.68	236.88	250U	-	-	-	-	-	
	1-Oct-94	47.1	234.46	250U	-	-	-	-	-	
	1-Jan-95	42.92	238.64	250U	-	-	-	-	-	
	1-Apr-95	37.01	244.55	250U	-	-	-	-	-	
	1-May-04	40.12	241.44	250U	-	-	-	-	-	
	14-Nov-05	44.96	236.6	100U	-	-	-	-	-	
	13-Jun-06	36.29	245.27	100U	-	-	-	-	-	
	12-Jun-07	33.22	248.34	-	-	-	-	-	-	
	21-Mar-08	35.98	245.58	-	-	-	-	-	-	
	27-Aug-08				Could not Locate					
	14-Sep-09				Could not Locate					
	9-Mar-10	38.25	243.31	-	-	-	-	-	-	
	23-Aug-10	41.52	240.04	-	-	-	-	-	-	
	22-Feb-11	34.40	247.16	-	-	-	-	-	-	
	9-Sep-11	38.95	242.61	-	-	-	-	-	-	
	25-Mar-12	35.62	245.94	-	-	-	-	-	-	
	15-Aug-12	39.00	242.56	-	-	-	-	-	-	
20-Feb-13	36.46	245.10								
12-Aug-13				No access, vehicle over well						
10-Mar-14	33.80	247.76	-	-	-	-	-	-		
24-Sep-14	40.48	241.08	-	-	-	-	-	-		
JP-MW02 279.33	1-Jun-93	40.40	238.93	250U	-	-	-	-	-	
	1-Dec-93	43.74	235.59	250U	-	-	-	-	-	
	1-Mar-94	41.46	237.87	250U	-	-	-	-	-	
	1-Jun-94	42.65	236.68	250U	-	-	-	-	-	
	1-Oct-94	44.82	234.51	250U	-	-	-	-	-	
	1-Jan-95	41.06	238.27	250U	-	-	-	-	-	
	1-Apr-95	37.49	241.84	250U	-	-	-	-	-	
	1-May-04	39.52	239.81	250U	-	-	-	-	-	
	14-Nov-05	42.80	236.53	100U	-	-	-	-	-	
	13-Jun-06	37.77	241.56	100U	-	-	-	-	-	
	12-Jun-07	36.46	242.87	100U	6.56	0.13	-	-	15.0	
	21-Mar-08	37.57	241.76	100U	7.38	0.13	6.49	112.0	12.6	
	27-Aug-08	41.62	237.71	-	-	-	-	-	-	
	3-Mar-09	39.79	239.54	100U	6.46	0.13	5.09	243.0	13.8	
	14-Sep-09	41.97	237.36	-	-	-	-	-	-	
9-Mar-10	38.52	240.81	120U	6.73	0.13	4.79	95.0	13.4		
27-Aug-10	40.45	238.88	120U	5.73	0.14	4.07	203.0	14.2		
22-Feb-11	36.72	242.61	120U	6.32	0.14	4.70	-	12.3		
9-Sep-11	38.88	240.45	-	-	-	-	-	-		

Table 3-5. GAAF Fuel Facility (AOC 10-8) Depth to Water Measurements (continued)

Well ID TOC Elevation	Date	DTW (ft bgs)	GWELEV (ft AMSL)	TPH-D (µg/L)	pH	Cond. (ms/cm)	DO (ppm)	ORP (mv)	Temp °C	
JP-MW02 279.33 (continued)	25-Mar-12	37.33	242.00	-	-	-	-	-	-	
	15-Aug-12	38.83	240.50	120U	-	-	-	-	-	
	20-Feb-13	37.67	241.66	100U	8.75	-	4.84	31.00	13.10	
	20-Feb-13	37.67	241.66	100U	8.75	-	4.84	31.00	13.10	
	Duplicate	13-Mar-14	35.10	244.23	100U	6.72	0.14	6.71	10.00	13.80
		13-Mar-14	35.10	244.23	100U	6.72	0.14	6.71	10.00	13.80
	24-Sep-14	39.29	240.04	38J	6.40	0.12	7.90	125.00	16.10	
JP-MW03 280.7	1-Dec-93	44.37	235.92	250U	-	-	-	-	-	
	1-Mar-94	42.03	238.26	250U	-	-	-	-	-	
	1-Jun-94	43.24	237.05	250U	-	-	-	-	-	
	1-Oct-94	45.57	234.72	250U	-	-	-	-	-	
	1-Jan-95	41.46	238.83	250U	-	-	-	-	-	
	1-Apr-95	36.71	243.58	250U	-	-	-	-	-	
	1-May-04	39.30	240.99	250U	-	-	-	-	-	
	14-Nov-05	43.35	236.94	100U	-	-	-	-	-	
	13-Jun-06	36.39	243.90	100U	-	-	-	-	-	
	12-Jun-07	33.82	246.47	-	-	-	-	-	-	
	21-Mar-08	36.01	244.28	-	-	-	-	-	-	
	27-Aug-08	41.95	238.34	-	-	-	-	-	-	
	3-Mar-09	40.95	239.34	-	-	-	-	-	-	
	14-Sep-09	42.48	237.81	-	-	-	-	-	-	
	9-Mar-10	37.81	242.48	-	-	-	-	-	-	
	23-Aug-10	40.39	239.90	-	-	-	-	-	-	
	22-Feb-11	36.14	244.15	-	-	-	-	-	-	
	9-Sep-11	39.50	240.79	-	-	-	-	-	-	
	25-Mar-12	35.98	244.31	-	-	-	-	-	-	
	15-Aug-12	38.42	241.87	-	-	-	-	-	-	
20-Feb-13	36.45	243.84	-	-	-	-	-	-		
10-Mar-14	33.85	246.85	-	-	-	-	-	-		
23-Sep-14	39.65	241.05	-	-	-	-	-	-		
JP-MW04 281.12	1-Jun-93	41.60	239.52	250U	-	-	-	-	-	
	1-Dec-93	45.24	235.88	250U	-	-	-	-	-	
	1-Mar-94	43.21	237.91	250U	-	-	-	-	-	
	1-Jun-94	44.00	237.12	250U	-	-	-	-	-	
	1-Oct-94	46.45	234.67	250U	-	-	-	-	-	
	1-Jan-95	42.38	238.74	250U	-	-	-	-	-	
	1-Apr-95	37.34	243.78	250U	-	-	-	-	-	
	1-May-04	40.02	241.10	250U	-	-	-	-	-	
	14-Nov-05	44.30	236.82	100U	-	-	-	-	-	
	13-Jun-06	36.84	244.28	100U	-	-	-	-	-	
31-Oct-06	Well lost or destroyed									

Table 3-5. GAAF Fuel Facility (AOC 10-8) Depth to Water Measurements (continued)

Well ID TOC Elevation	Date	DTW (ft bgs)	GWELEV (ft AMSL)	TPH-D (µg/L)	pH	Cond. (ms/cm)	DO (ppm)	ORP (mv)	Temp °C
	1-May-04	39.87	241.52	1,200	-	-	-	-	-
	14-Nov-05	44.62	236.77	930	-	-	-	-	-
	13-Jun-06	36.75	244.64	1,010	-	-	-	-	-
	31-Oct-06	43.91	237.48	760	-	-	-	-	-
	12-Jun-07	33.4	247.99	100UJ	-	-	-	-	-
	16-Nov-07	41.82	239.57	2,100J	-	-	-	-	-
	21-Mar-08	35.65	245.74	1,300J	-	-	-	-	-
AOC 10-8-B05	27-Aug-08	No access, vehicle over well							
281.39	3-Mar-09	39.65	241.74	521	7.17	0.331	4.02	207	12.4
	14-Sep-09	43	238.39	7,660	-	-	-	-	-
	9-Mar-10	38.8	242.59	2,600	6.61	0.75	1.66	-11	13.2
	23-Aug-10	42.78	238.61	3,600	6.08	0.69	1.84	216	15.8
Duplicate	23-Aug-10	42.78	238.61	3,900	6.08	0.69	1.84	216	15.8
	22-Feb-11	36.25	245.14	2,500	6.22	0.76	1.16	-	13.7
	9-Sep-11	39	242.39	3,400	6.16	0.74	1.64	200	16.6
	25-Mar-12	37.22	244.17	-	-	-	-	-	-
	15-Aug-12	40.26	241.13	2,900	-	-	-	-	-
	20-Feb-13	38.13	243.26	1,200	8.24	-	3.46	11	13.1
	12-Aug-13	42	239.39	1,100	6.75	0.50	1.14	13	18.0
Duplicate	12-Aug-13	42	239.39	1,100	6.75	0.50	1.14	13	18.0
	13-Mar-14	34.7	246.69	440	6.79	0.52	1.47	7	13.6
	25-Sep-14	40.65	240.74	1,700	Sample collected by bailer - No parameters				

MTCA Method A Cleanup Level 500

Notes:

- TOC = Top of casing
- DTW (ft bgs) = Depth to water (feet below ground surface)
- GWELEV (ft AMSL) = Groundwater elevation (feet above mean sea level)
- TPH-D (µg/L) = Diesel-range total petroleum hydrocarbons (micrograms per liter)
- Cond. (ms/cm) = Conductivity (microsiemens per centimeter)
- DO (ppm) = Dissolved oxygen (parts per million)
- ORP (mv) = Oxygen / reduction potential (millivolts)
- Temp. (°C) = Temperature (degrees Celsius)
- BOLD** = Analyte detected at or above laboratory practical quantification limit
- BOLD** = Analyte detected at or above MTCA Method A cleanup level of 500 µg/L
- J = Value estimated
- U = Analyte not detected above practical quantification limit reported
- = No data, not applicable

Table 3-6. Descriptive Statistics

Well ID	Constituent	Number of Samples	Number of Non-Detects	Sample Mean	Standard Deviation	Minimum Conc. (µg/L)	Maximum Conc. (µg/L)	Date of Maximum Conc.
AOC 8-2								
4131-MW02	TPH-D	20	1	2,525.50	1,166.07	680	4,800	23-Aug-10
4131-MW03		20	0	56,269.50	188,242.50	430	850,000	29-Dec-05
4131-MW04		19	16	-	-	15J	1,200	29-Dec-05
4131-MW05		19	17	-	-	-	-	-
AOC 8-4								
A0111-MW04	TPH-D	18	2	691.11	451.59	100U	1,700	16-Nov-07
A0111-MW05		10	10	-	-	-	-	-
AO111-MW06		10	8	-	-	34J	170	8-Sep-11
A0111-MW07		10	8	-	-	120U	150	8-Sep-11
AO111-MW08		11	0	2,374.55	3,660.87	240	12,000	22-Aug-10
AOC 9-2								
95-A17-2	TPH-G	18	14	-	-	50U	4,700	28-Oct-03
	Benzene	18	15	-	-	0.2U	1.6	28-Oct-03
95-A17-3a	TPH-G	24	0	20,662.50	9,239.65	1,400	35,000	8-Mar-08
	Benzene	24	0	282.95	199.55	3.7	690	30-Jun-03
95-A17-4	TPH-G	12	11	-	-	50U	300	26-Aug-08
	Benzene	12	12	-	-	-	-	-
07-A17-7	TPH-G	14	8	1,013.57	1,120.70	50U	3,400	7-Nov-07
	Benzene	14	5	42.95	50.41	0.2U	132	26-Aug-08
10-A17-8	TPH-G	12	0	38,200.00	27,674.90	3,500	74,000	18-Nov-11
	Benzene	12	0	825.60	624.38	46	2,100	29-Nov-10
AOC 10-8								
JP-MW02	TPH-D	21	20	-	-	-	-	-
AOC 10-8-B05		18	1	1,945.61	1,757.27	100	7,660	14-Sep-09

Notes:

TPH-D = Diesel range total petroleum hydrocarbons (AOC 8-2, AOC 8-4, AOC 10-8)

TPH-G = Gasoline range total petroleum hydrocarbons (AOC 9-2)

Conc. (µg/L) = Concentration in micrograms per liter

U = Analyte not detected above practical quantification limit reported

J = Result reported is an estimated concentration

- = Not applicable

4 REFERENCES

- Bussey, Troy. 2008. Fort Lewis Agreed Order Final Remedial Investigation Report. February 2008.
- Versar. 2009a. Design Report, Air Sparge and Soil Vapor Extraction System, Fort Lewis Area of Concern 9-2, North Fort Credit Union. 2009.
- Versar. 2009b. Fort Lewis Agreed Order Groundwater Monitoring Report for August 2010 and Quarterly Sampling Conducted in 2011. June 2012.
- Versar. 2014. Fort Lewis Agreed Order Groundwater Sampling and Analysis Plan; Building 4131 Former UST Site (AOC 8-2), Building A0111 Former UST Site (AOC 8-4), Building A1033 Former UST Site (AOC 9-2), Gary Army Fuel Facility (AOC 10-8); Joint Base Lewis McChord, Washington 98433. February 2014.

APPENDIX A
COMPLETED FIELD FORMS

1Q2014 Groundwater Sampling Event - FLAO Sites
 Joint Base Lewis-McChord, Washington 98433

Monitoring Well	Depth to Water	Sample Date	Sample Time	Duplicate Name and Time
Building A1033 (AOC 9-2) - Credit Union, TPH-G, BTEX				
95 A17-1	23.6 10 MAR 14			
* 95 A17-2				
95 A17-3A	22.9	14 MAR 14	1055	Dup-2 @ 0830
95 A17-4	22.5	14 MAR 14	1000	
96 A17-5	21.85 10 MAR 14			
96 A17-6	20.60 10 MAR 14			
07 A17-7	21.45	14 MAR 14	0915	
10 A17-8	22.85	10 MAR 14	1155	

Building 3034 - GAFF Fuel Facility (AOC 10-8) - TPH-D,O

JP-MW-01	33.80 10 MAR 14			
JP-MW-02	35.1	13 MAR 14	1320	Dup-1 @ 0800
JP-MW-03	33.85 10 MAR 14			
AOC 10-8-B05	34.7	13 MAR 14	1220	

Notes:

1 TPH-G, BTEX DUPE

1 TPH-D DUPE

* 95 A17-2: LOW WATER LEVEL, UNABLE TO TAKE SAMPLE.

Field Technician Signature

[Handwritten Signature]

1Q2014 Groundwater Sampling Event - FLAO Sites
 Joint Base Lewis-McChord, Washington 98433

Monitoring Well	Depth to Water	Sample Date	Sample Time	Duplicate Name and Time
-----------------	----------------	-------------	-------------	-------------------------

Building 04131 (AOC 8-2) - Fire Station, TPH-D, O

4131-MW01	23.95 22.95 13 MAR 14			
4131-MW02	22.95	13 MAR 14	1045	
4131-MW03	24.25	13 MAR 14	1110	
4131-MW04	22.6	13 MAR 14	1020	
4131-MW05	22.5	13 MAR 14	1130	
4131-MW06	24.0 13 MAR 14			

Building A0111 (AOC 8-4) - Chem Batt, TPH-D, O

A0111-MW04	18.0	17 MAR 14	1005	
A0111-MW05	17.55	17 MAR 14	1200	
A0111-MW06	15.7	17 MAR 14	1255	
A0111-MW07	18.5	17 MAR 14	1045	
A0111-MW08	18.2	17 MAR 14	1120	

Notes:

Field Technician Signature _____

Groundwater Sampling Field Parameters
 Joint Base Lewis McChord, Washington 98433

Sample ID A0111-MW008

Sample Date/Time 17MAR14, 1120

Time	1100	1105	1110	1115
DTW	18.2	—	—	18.2
pH	 	5.99	6.05	6.07
Cond.	 	0190 ^u	0174	0189
Turb.	 	—	—	—
DO	 	63.7% ^{6.86}	66.0% ^{7.02}	65.8% ^{6.94}
Temp	 	11.2	11.8	12.4
ORP	 	45	42	41

Sample ID A0111-MW005

Sample Date/Time 17MAR14, 1200

Time	1140	1145	1150	1155
DTW	17.55	—	—	—
pH	 	5.67	5.97	6.01
Cond.	 	0159	0161	0159
DO	 	82.9% ^{8.95}	87.0% ^{9.32}	87.5% ^{9.43}
Turb.	 	—	—	—
Temp	 	11.5	11.8	11.6
ORP	 	64	46	44

Project

Signature

Jessy Beck

Date

Groundwater Sampling Field Parameters
 Joint Base Lewis McChord, Washington 98433

Sample ID A0111-MW06 Sample Date/Time 17MAR14, 1255

Time	1235	1240	1245	1250
DTW	15.7	—	—	15.7
pH	 	5.72	5.90	5.93
Cond.	 	0220	0220	0228
Turb.	 	—	—	—
DO	 	^{7.29} 67.0%	^{6.97} 64.9%	^{7.05} 65.4%
Temp	 	11.2	11.4	11.5
ORP	 	61	50	49

Sample ID _____ Sample Date/Time _____

Time	<u>1258</u>			
DTW				
pH	 			
Cond.	 			
DO	 			
Turb.	 			
Temp	 			
ORP	 			

Project _____

Signature _____

Date _____

Groundwater Sampling Field Parameters
 Joint Base Lewis McChord, Washington 98433

Sample ID AOC 10-8-B05 Sample Date/Time 13 MAR 14, 1220

Time	1200	1205	1210	1215
DTW	34.7	—	—	35.4
pH	 	6.48	6.78	6.79
Cond.	 	0457	0495	0520
Turb.	 	—	—	—
DO	 	16.3% ^{1.60}	12.6% ^{1.27}	14.6% ^{1.47}
Temp	 	13.6	14.1	14.3
ORP	 	25	7	7

Sample ID JP-MW-02 Sample Date/Time 13 MAR 14, 1320

Time	1300	1305	1310	1315
DTW	35.1	35.2	35.2	35.2
pH	 	6.57	6.70	6.72
Cond.	 	0139	0137	0137
DO	 	64.6% ^{6.62}	65.8% ^{6.68}	65.1% ^{6.71}
Turb.	 	—	—	—
Temp	 	13.8	14.1	14.1
ORP	 	17	11	10

Project

Signature

Jimmy Berlin

Date

Groundwater Sampling Field Parameters
 Joint Base Lewis McChord, Washington 98433

Sample ID A0111-MW04 Sample Date/Time 17MARCH, 1005

Time	0945	0950	0955	1000
DTW	18.0	—	—	18.0
pH	 	5.72	5.73	5.73
Cond.	 	0139	0153	0168
Turb.	 	—	—	—
DO	 	80.4% 8.62	76.7% 8.18	77.3% 8.26
Temp	 	11.6	12.2	12.1
ORP	 	58	59	59

Sample ID A0111-MW07 Sample Date/Time 17MARCH, 1045

Time	1025	1030	1035	1040
DTW	18.5	—	—	18.5
pH	 	6.02	6.22	6.09
Cond.	 	0254	0240	0222
DO	 	62.1% 6.87	71.2% 7.82	65.4% 7.19
Turb.	 	—	—	—
Temp	 	10.4	10.5	10.8
ORP	 	45	33	42

Project

Signature

Date

Groundwater Sampling Field Parameters
 Joint Base Lewis McChord, Washington 98433

Sample ID 4131-MW04 Sample Date/Time 13 MAR 14, 1020

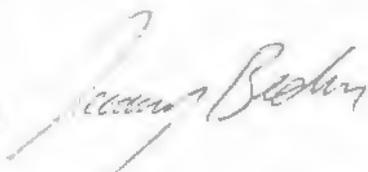
Time	1000	1005	1010	1015
DTW	22.6	22.6	22.6	22.6
pH	 	6.13	6.27	6.36
Cond.	 	0078	0077	0074
Turb.	 	—	—	—
DO	 	88.3% 9.29	89.5% 9.40	90.3% 9.67
Temp	 	12.7	12.7	12.8
ORP	 	39	36	28

Sample ID 4131-MW02 Sample Date/Time 13 MAR 14, 1045

Time	1025	1030	1035	1040
DTW	22.95	23.0	23.0	23.0
pH	 	5.80	5.86	5.90
Cond.	 	0113	0113	0113
DO	 	47.0% 4.96	41.0% 4.34	38.3% 4.06
Turb.	 	—	—	—
Temp	 	12.0	12.0	12.0
ORP	 	58	54	53

Project

Signature



Date

Groundwater Sampling Field Parameters
 Joint Base Lewis McChord, Washington 98433

Sample ID 4131-MW03 Sample Date/Time 13MAR14, 1110

Time	1050	1055	1100	1105
DTW	24.25	29.7	29.7	29.7
pH	 	6.09	6.08	6.08
Cond.	 	0151	0156	0161
Turb.	 	—	—	—
DO	 	39.5% ^{4.27}	34.4% ^{3.68}	34.1 ^{3.63}
Temp	 	12.2	12.2	12.2
ORP	 	43	42	44

Sample ID 4131-MW05 Sample Date/Time 13MAR14, 1130

Time	1110	1115	1120	1125
DTW	22.05	22.1	22.1	22.1
pH	 	6.18	6.45	6.51
Cond.	 	0120	0119	0119
DO	 	87.9% ^{9.20}	88.6% ^{9.13}	88.0 ^{9.30}
Turb.	 	—	—	—
Temp	 	12.5	12.9	13.0
ORP	 	47	25	21

Project

Signature

Date

Groundwater Sampling Field Parameters
 Joint Base Lewis McChord, Washington 98433

Sample ID 10-A17-8

Sample Date/Time 10 MAR 14, 1155

Time	1135	1140	1145	1150
DTW	22.85	23.0	23.0	23.0
pH	 	5.96	5.98	6.01
Cond.	 	—	—	—
Turb.	 	—	—	—
DO	 	4.4% ^{0.45}	2.7% ^{0.27}	2.0% ^{0.22}
Temp	 	14.6	14.7	14.7
ORP	 	51	49	47

Sample ID 07-A17-7

Sample Date/Time 14 MAR 14, 0915

Time	0855	0900	0905	0910
DTW	21.45	21.45	21.5	21.5
pH	 	6.09	6.00	5.97
Cond.	 	0065	0059	0059
DO	 	11.4% ^{1.31}	6.4% ^{0.69}	6.3% ^{0.70}
Turb.	 	—	—	—
Temp	 	11.6	11.6	11.6
ORP	 	52	45	46

Project

Signature

[Handwritten Signature]

Date

Groundwater Sampling Field Parameters
 Joint Base Lewis McChord, Washington 98433

Sample ID 95-A17-4 Sample Date/Time 14MAR14, 1000

Time	0940	0945	0950	0955
DTW	22.5	22.5	22.5	22.5
pH	 	6.22	6.24	6.26
Cond.	 	0183	0185	0183
Turb.	 	—	—	—
DO	 	^{8.69} 84.1%	^{8.57} 84.1%	^{8.55} 82.5%
Temp	 	13.6	13.6	13.5
ORP	 	34	33	32

Sample ID 95-A17-3A Sample Date/Time 14MAR14, 1055

Time	1035	1040	1045	1050
DTW	22.9	22.95	23.0	23.0
pH	 	6.23	6.31	6.36
Cond.	 	0220	0221	0223
DO	 	^{0.97} 9.1%	^{0.83} 8.2%	^{0.78} 7.7%
Turb.	 	—	—	—
Temp	 	13.6	13.6	13.6
ORP	 	33	28	26

Project

Signature

Date



Sealaska Environmental Services

Marine Science Center, P.O. Box 869
18743 Front Street, NE, Suite 201
Poulsbo, WA 98370

Well Inspection, Purging, and Field Measurement Form

Contract Number: _____ Task Order: 01 Installation: JB LM Site Name: AOC 8-2

Well Data

Well ID: 4131-MW08 Measuring Point (MP): Top of Casing, Rim Monument, Other: _____
 Total Well Depth (ft below MP): 27.42 Pooled Water in Well Head: Y: N: Well Casing Volume (liters/ft): 0.6
 Depth to Water (ft below MP): 25.15 Inner Casing Straight and Clear: Y: N: Well Volume (liters): 1.362
 Length of Water Column in well (ft): 2.27 Well Head Locked: Y: N: 3 x Well Volume (liters): 4.086
 Diameter of well casing (inches): 2 in Exterior Seal Good Y: N: Volume Purged (liters): 240
 Purge Method: Peristaltic/Submersible/Bladder/Other: _____ Remarks: _____

Water Sample Data

Sample ID: AOC1009224131MW02 Type: ENV Date: 10/22/14 Time: 1000 # Containers: 2
 QC Sample ID: NA Type: NA Date: NA Time: NA # Containers: NA
 Sampling Personnel: S.P., B.V., T.M. Sampling Method: low flow/grab
 Remarks (color, odor, etc.): _____

Time	Purge Vol (liters)	Depth to Water (ft btoc)	pH	Spec. Cond. (ms/cm)	Turbidity (NTU)	DO (mg/L)	Temp. (°C)	ORP (mv)	Notes
Stabilization Requirements			(± 2.0)	(± 10%)	(± 10%)	(± 10%)	(± 10%)	(± 10%)	
1018	0	25.15							Initial Depth to Water (Pre-pumping)
1037	Started pump				Set flow rate: 360 mL/min				
1038	2.0		6.4	0.149	590	3.9	12.8	118	
1046	6.5	26.52	6.4	0.152	570	3.2	12.7	102	
1049	9.0	26.40	6.3	0.154	200	2.0	12.7	49	
1052	11.5		6.3	0.156	140	1.7	12.7	40	
1055	14.0	26.40	6.3	0.156	120	1.7	12.7	37	
1058	16.5	26.50	6.3	0.159	90	1.6	12.8	31	
1101	19.0		6.3	0.160	79	1.5	12.8	28	
1104	21.5		6.3	0.161	79	1.4	12.8	27	
1107	24.0		6.3	0.162	78	1.4	12.8	28	
Final (at time of sample collection)									
1107	26.5		6.3	0.163	78	1.4	12.8	26	

Well Volume Calculation

Well volume (liters) = [Well casing volume (liters/ft)] x [Length of water column (ft)]

Well casing diameter (in) → Well casing volume (liters/ft)

1.25" → 0.3 1.5" → 0.4 2" → 0.6 2.5" → 1 3" → 1.4 3.5" → 2 4" → 2.5 6" → 5.5

Meter Model: U 22

Page 1 of 1

Revision: June 2014



Sealaska Environmental Services

Marine Science Center, P.O. Box 869
18743 Front Street, NE, Suite 201
Poulsbo, WA 98370

Well Inspection, Purging, and Field Measurement Form

Contract Number: _____ Task Order: 01 Installation: JBLM AOC 8-2 Site Name: AOC 8-2

Well Data

Well ID: 2131-MW03 Measuring Point (MP): Top of Casing Rim Monument, Other: _____
 Total Well Depth (ft below MP): 30.0 Pooled Water in Well Head: Y: N: _____ Well Casing Volume (liters/ft): 0.6
 Depth to Water (ft below MP): 27.0 Inner Casing Straight and Clear: Y: N: _____ Well Volume (liters): 15
 Length of Water Column in well (ft): 3.0 Well Head Locked: Y: _____ N: 3 x Well Volume (liters): 5.4
 Diameter of well casing (inches): 2 in Exterior Seal Good Y: N: _____ Volume Purged (liters): 5.0
 Purge Method: Peristaltic/Submersible/Bladder/Other: _____ Remarks: _____

Water Sample Data

Sample ID: AOC1409220131MW03 Type: ENV Date: 9/22/14 Time: 1200 # Containers: 2
 QC Sample ID: NA Type: NA Date: NA Time: NA # Containers: NA
 Sampling Personnel: B Kercher, T. Malamaikal Sampling Method: low flow/grab
 Remarks (color, odor, etc.): turbid, cloudy, reddish

Time	Purge Vol. (liters)	Depth to Water (ft btoc)	pH	Spec. Cond. (ms/cm)	Turbidity (NTU)	DO (mg/L)	Temp. (°C)	ORP (mv)	Notes
Stabilization Requirements			(± 2.0)	(± 10%)	(± 10%)	(± 10%)	(± 10%)	(± 10%)	
Initial Depth to Water (Pre-pumping)									
1129	0	27.00							
1134	Set flow rate at 700 ml/min								
1135	Connect to flow cell								
1136	5.0	29.78	6.6	0.130	-5	6.1	12.8	-30	
1139	Pumped Dry wait to recharge								
Final (at time of sample collection)									
1140	Collect sample								

Well Volume Calculation

Well volume (liters) = [Well casing volume (liters/ft)] x [Length of water column (ft)]

Well casing diameter (in) → Well casing volume (liters/ft)

1.25" → 0.3 1.5" → 0.4 2" → 0.6 2.5" → 1 3" → 1.4 3.5" → 2 4" → 2.5 6" → 5.5



Sealaska Environmental Services

Marine Science Center, P.O. Box 869
18743 Front Street, NE, Suite 201
Poulsbo, WA 98370

Well Inspection, Purging, and Field Measurement Form

Contract Number: _____

Task Order: TO 01 Installation: JBLM

Site Name: AOC 8-2

Well Data

Well ID: 4131-MW04 Measuring Point (MP): Top of Casing Rim Monument, Other: _____
 Total Well Depth (ft below MP): 27.40 Pooled Water in Well Head: Y: ___ N: Well Casing Volume (liters/ft): 0.6
 Depth to Water (ft below MP): 24.76 Inner Casing Straight and Clear: Y: N: ___ Well Volume (liters): 1.584
 Length of Water Column in well (ft): 2.64 Well Head Locked: Y: N: ___ 3 x Well Volume (liters): 4.752
 Diameter of well casing (inches): 2 in Exterior Seal Good Y: N: ___ Volume Purged (liters): 19.8
 Purge Method: Peristaltic/Submersible/Bladder/Other: _____ Remarks: 460 mL/min

Water Sample Data

Sample ID: AOC1409224131MW04 Type: ENV. Date: 09222014 Time: 0920 # Containers: 2
 QC Sample ID: NA Type: NA Date: NA Time: NA # Containers: NA
 Sampling Personnel: S.P. T.M. Sampling Method: low flow/grab
 Remarks (color, odor, etc.): Clear / odorless

Time	Purge Vol (liters)	Depth to Water (ft btoc)	pH	Spec. Cond. (ms/cm)	Turbidity (NTU)	DO (mg/L)	Temp. (°C)	ORP (mv)	Notes
Stabilization Requirements		(± 0.5)	(± 0.2)	(± 10%)	(± 10% or <20)	(± 10%)	(± 10%)	(± 10)	
0836	0	27.76							Initial Depth to Water (Pre-pumping)
0840	Started	27.76							Set flow rate: 460 mL/min
0850	Connect								light brown cloudy water
0853	10.0	24.76	5.9	0.082	91	9.4	13.3	213	
0856	11.4	24.76	6.0	0.079	59	9.2	13.3	220	
0859	12.8	24.76	6.1	0.079	39	9.1	13.3	225	
0902	14.2	24.76	6.1	0.079	28	9.1	13.3	230	
0905	15.6	24.76	6.1	0.074	26	9.1	13.3	233	
0908	17.0	24.76	6.2	0.074	23	9.1	13.3	236	
0911	18.4	24.76	6.2	0.078	23	9.0	13.3	240	
0914	19.8	24.76	6.2	0.078	22	9.0	13.3	240	
Final (at time of sample collection)									
0914	19.8	24.76	6.2	0.078	22	9.0	13.3	240	

Well Volume Calculation

Well volume (liters) = [Well casing volume (liters/ft)] x [Length of water column (ft)]

Well casing diameter (in) → Well casing volume (liters/ft)

1.25" → 0.3 1.5" → 0.4 2" → 0.6 2.5" → 1 3" → 1.4 3.5" → 2 4" → 2.5 6" → 5.5

Meter Model: W-22

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SEALASKA ENVIRONMENTAL

Sealaska Environmental Services

Marine Science Center, P.O. Box 869
18743 Front Street, NE, Suite 201
Poulsbo, WA 98370

Well Inspection, Purging, and Field Measurement Form

Contract Number: _____ Task Order: 01 Installation: JBLM Site Name: AOC 8-2

Well Data

Well ID: 4131-MWOS Measuring Point (MP): Top of Casing, Rim Monument, Other: _____
Total Well Depth (ft below MP): 27.60 Pooled Water in Well Head: Y: N: Well Casing Volume (liters/ft): 0.6
Depth to Water (ft below MP): 24.23 Inner Casing Straight and Clear: Y: N: _____ Well Volume (liters): 2.022
Length of Water Column in well (ft): 3.37 Well Head Locked: Y: N: _____ 3 x Well Volume (liters): 6.066
Diameter of well casing (inches): 2 in Exterior Seal Good Y: N: _____ Volume Purged (liters): 9.80
Purge Method: Peristaltic/Submersible/Bladder/Other: _____ Remarks: _____

Water Sample Data

Sample ID: AOC1409224131MWOS Type: ENV Date: 09222014 Time: 1000 # Containers: 2
QC Sample ID: NA Type: NA Date: NA Time: NA # Containers: NA
Sampling Personnel: S.P., B.K., T.M. Sampling Method: low flow grab
Remarks (color, odor, etc.): clear/colorless

Time	Purge Vol. (liters)	Depth to Water (ft btoc)	pH	Spec. Cond. (ms/cm)	Turbidity (NTU)	DO (mg/L)	Temp. (°C)	ORP (mv)	Notes
Stabilization Requirements		(± 0.5)	(± 0.2)	(± 10%)	(± 10% or <20)	(± 10%)	(± 10%)	(± 10)	
0933	0	24.23	Initial Depth to Water (Pre-pumping)						
0936	Started pump		Set flow rate: 480ml/min						
0939	Connect to flow cell								
0942	4.0	24.23	6.3	0.101	34	9.9	13.5	262	
0945	5.45	24.23	6.4	0.101	23	9.7	13.5	261	
0949	6.90	24.23	6.4	0.101	19	9.6	13.6	260	
0951	8.35	24.23	6.4	0.102	19	9.6	13.5	260	
0954	9.80	24.23	6.4	0.102	18	9.5	13.5	255	
Final (at time of sample collection)									
0954	9.80	24.23	6.4	0.102	18	9.5	13.5	255	

Well Volume Calculation

Well volume (liters) = [Well casing volume (liters/ft)] x [Length of water column (ft)]

Well casing diameter (in) → Well casing volume (liters/ft)

1.25" → 0.3 1.5" → 0.4 2" → 0.6 2.5" → 1 3" → 1.4 3.5" → 2 4" → 2.5 6" → 5.5



Sealaska Environmental Services

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Well Inspection, Purging, and Field Measurement Form

Contract Number: _____ Task Order: 01 Installation: JBLM Site Name: ADC 8-4

Well Data

Well ID: A011-MW04 Measuring Point (MP): Top of Casing Rim Monument, Other: _____
 Total Well Depth (ft below MP): 22.83 Pooled Water in Well Head: Y: ___ N: Well Casing Volume (liters/ft): .6
 Depth to Water (ft below MP): 21.95 Inner Casing Straight and Clear: Y: N: ___ Well Volume (liters): 0.588
 Length of Water Column in well (ft): 0.88 Well Head Locked: Y: N: ___ 3 x Well Volume (liters): 1.584
 Diameter of well casing (inches): 2 Exterior Seal Good Y: N: ___ Volume Purged (liters): 1.74
 Purge Method: _____
 Peristaltic/Submersible/Bladder/Other: Booster Remarks: _____

Water Sample Data

Sample ID: ADC140916A011MW04 Type: ENV Date: 01/16/14 Time: 1010 # Containers: 2
 QC Sample ID: NA Type: NA Date: NA Time: NA # Containers: NA
 Sampling Personnel: S.P., B.K., T.M. Sampling Method: Grab

Remarks (color, odor, etc.): _____

Vol. in Bailer (liters)	Purge Vol. (liters)	Vol. in Bailer (liters)	Purge Vol. (liters)	Vol. in Bailer (liters)	Purge Vol. (liters)	Vol. in Bailer (liters)	Purge Vol. (liters)	Vol. in Bailer (liters)	Purge Vol. (liters)
.270	.270								
.175	.445								
.180	.625								
.230	.855								
.250	1.105								
.250	1.355								
.160	1.515								
.225	1.740								

Well Volume Calculation

Well volume (liters) = [Well casing volume (liters/ft)] x [Length of water column (ft)]

Well casing diameter (in) → Well casing volume (liters/ft)

- 1.25" → 0.3
- 1.5" → 0.4
- 2" → 0.6
- 2.5" → 1
- 3" → 1.4
- 3.5" → 2
- 4" → 2.5
- 6" → 5.5



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Well Inspection, Purging, and Field Measurement Form

Contract Number: _____ Task Order: A Installation: JBLM Site Name: AOC 8-4

Well Data

Well ID: A011-MW06 Measuring Point (MP): Top of Casing Rim Monument, Other: _____
 Total Well Depth (ft below MP): 15.83 Pooled Water in Well Head: Y: ___ N: Well Casing Volume (liters/ft): 0.6
 Depth to Water (ft below MP): 19.53 Inner Casing Straight and Clear: Y: N: ___ Well Volume (liters): 3.78
 Length of Water Column in well (ft): 6.3 Well Head Locked: Y: N: ___ 3 x Well Volume (liters): 11.34
 Diameter of well casing (inches): 2 Exterior Seal Good Y: N: ___ Volume Purged (liters): 12.09
 Purge Method: Peristaltic/Submersible/Bladder/Other: Bailer Remarks: _____

Water Sample Data

Sample ID: A011409116A0111MW06 Type: MS/MSD Date: 09/16/14 Time: 1200 # Containers: 6
 QC Sample ID: NA Type: NA Date: NA Time: NA # Containers: NA
 Sampling Personnel: S.P., B.K., T.M. Sampling Method: Grab
 Remarks (color, odor, etc.): _____

Vol. in Bailer (liters)	Purge Vol. (liters)	Vol. in Bailer (liters)	Purge Vol. (liters)	Vol. in Bailer (liters)	Purge Vol. (liters)	Vol. in Bailer (liters)	Purge Vol. (liters)	Vol. in Bailer (liters)	Purge Vol. (liters)
.630	.630								
.660	1.290								
.900	2.090								
1.000	3.090								
1.000	4.090								
1.000	5.090								
1.000	6.090								
1.000	7.090								
1.000	8.090								
1.000	9.090								
1.000	10.090								
1.000	11.090								
1.000	12.090								

Well Volume Calculation

Well volume (liters) = [Well casing volume (liters/ft)] x [Length of water column (ft)]

Well casing diameter (in) → Well casing volume (liters/ft)

1.25" → 0.3 1.5" → 0.4 2" → 0.6 2.5" → 1 3" → 1.4 3.5" → 2 4" → 2.5 6" → 5.5

Meter Model: NA

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Well Inspection, Purging, and Field Measurement Form

Contract Number: _____ Task Order: 01 Installation: JBLM Site Name: AOC 8-4

Well Data

Well ID: AD111-MW07 Measuring Point (MP): Top of Casing Rim Monument, Other: _____
 Total Well Depth (ft below MP): 29.00 Pooled Water in Well Head: Y: _____ N: Well Casing Volume (liters/ft): 0.6
 Depth to Water (ft below MP): 22.59 Inner Casing Straight and Clear: Y: N: _____ Well Volume (liters): 3.846
 Length of Water Column in well (ft): 6.41 Well Head Locked: Y: N: _____ 3 x Well Volume (liters): 11.538
 Diameter of well casing (inches): 2 Exterior Seal Good Y: N: _____ Volume Purged (liters): 11.73
 Purge Method: Peristaltic/Submersible/Bladder/Other: Bailer Remarks: _____

Water Sample Data

Sample ID: AOC1409116 AD111MW07 Type: ENV Date: 09/16/14 Time: 1110 # Containers: 2
 QC Sample ID: NA Type: NA Date: NA Time: NA # Containers: NA
 Sampling Personnel: S.P., B.K., T.M. Sampling Method: grab
 Remarks (color, odor, etc.): _____

Vol. in Bailer (liters)	Purge Vol. (liters)	Vol. in Bailer (liters)	Purge Vol. (liters)	Vol. in Bailer (liters)	Purge Vol. (liters)	Vol. in Bailer (liters)	Purge Vol. (liters)	Vol. in Bailer (liters)	Purge Vol. (liters)
260	260	320	4.315	.315	8.590				
315	575	310	4.625	.320	8.910				
220	795	315	4.940	.320	9.230				
150	945	305	5.245	.320	9.550				
315	1260	300	5.545	.315	9.865				
320	1580	320	5.865	.320	10.185				
320	1900	280	6.145	.280	10.465				
295	2195	315	6.460	.320	10.785				
310	2505	320	6.780	.320	11.105				
270	2775	280	7.060	.300	11.405				
315	3090	320	7.380	.325	11.730				
275	3365	320	7.700						
320	3685	270	7.970						
310	3995	305	8.275						

Well Volume Calculation

Well volume (liters) = [Well casing volume (liters/ft)] x [Length of water column (ft)]

Well casing diameter (in) → Well casing volume (liters/ft)

- 1.25" → 0.3 1.5" → 0.4 2" → 0.6 2.5" → 1 3" → 1.4 3.5" → 2 4" → 2.5 6" → 5.5

Meter Model: NA

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Well Inspection, Purging, and Field Measurement Form

Contract Number: _____ Task Order: 01 Installation: JBLM Site Name: AOC 8-4

Well Data

Well ID: AD11-MW08 Measuring Point (MP): Top of Casing Rim Monument, Other: _____
 Total Well Depth (ft below MP): 22.15 Pooled Water in Well Head: Y: N: Well Casing Volume (liters/ft): .6
 Depth to Water (ft below MP): 20.00 Inner Casing Straight and Clear: Y: N: Well Volume (liters): 0.69
 Length of Water Column in well (ft): 1.15 Well Head Locked: Y: N: 3 x Well Volume (liters): 2.07
 Diameter of well casing (inches): 2 Exterior Seal Good Y: N: Volume Purged (liters): 2.6
 Purge Method: Peristaltic/Submersible/Bladder/Other: Bailer Remarks: _____

Water Sample Data

Sample ID: AD11409116AD11MW08 Type: ENV Date: 09/16/14 Time: 0930 # Containers: 2
 QC Sample ID: AD11409116DUP1 Type: DUP Date: 09/16/14 Time: 0940 # Containers: 2
 Sampling Personnel: S.P., B.K., T.M. Sampling Method: Grab
 Remarks (color, odor, etc.): _____

Vol. in Bailer (liters)	Purge Vol. (liters)	Vol. in Bailer (liters)	Purge Vol. (liters)	Vol. in Bailer (liters)	Purge Vol. (liters)	Vol. in Bailer (liters)	Purge Vol. (liters)	Vol. in Bailer (liters)	Purge Vol. (liters)
.350	.350								
.420	.770								
.350	1.120								
.500	1.620								
.600	2.220								
.380	2.600								

Well Volume Calculation

Well volume (liters) = [Well casing volume (liters/ft)] x [Length of water column (ft)]

Well casing diameter (in) → Well casing volume (liters/ft)

- 1.25" → 0.3 1.5" → 0.4 2" → 0.6 2.5" → 1 3" → 1.4 3.5" → 2 4" → 2.5 6" → 5.5

Meter Model: NA

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Well Inspection, Purging, and Field Measurement Form

Contract Number: _____ Task Order: 01 Installation: JBLM Site Name: AOC 9-2

Well Data

Well ID: 07-A17-7 Measuring Point (MP): Top of Casing, Rim Monument, Other: _____
 Total Well Depth (ft below MP): To top of pump 28.34 Pooled Water in Well Head: Y: N: Well Casing Volume (liters/ft): 0.6
 Depth to Water (ft below MP): 26.97 Inner Casing Straight and Clear: Y: N: Well Volume (liters): 0.822
 Length of Water Column in well (ft): 1.37 Well Head Locked: Y: N: 3 x Well Volume (liters): 2.466
 Diameter of well casing (inches): 2 in Exterior Seal Good Y: N: Volume Purged (liters): 9.0
 Purge Method: Peristaltic/Submersible/Bladder/Other: _____ Remarks: _____

Water Sample Data

Sample ID: AOC14092307A177 Type: ENV Date: 092314 Time: 1125 # Containers: 6
 QC Sample ID: NA Type: NA Date: NA Time: NA # Containers: NA
 Sampling Personnel: S.P., B.K. Sampling Method: low flow / grab
 Remarks (color, odor, etc.): tubing dirty
PID = 0.0ppm

Time	Purge Vol. (liters)	Depth to Water (ft btoc)	pH	Spec. Cond. (ms/cm)	Turbidity (NTU)	DO (mg/L)	Temp. (°C)	ORP (mv)	Notes
Stabilization Requirements		(± 0.5)	(± 0.2)	(± 10%)	(± 10% or <20)	(± 10%)	(± 10%)	(± 10)	
1045	0	26.97							Initial Depth to Water (Pre-pumping)
1058	start pump								set flow rate: 320ml/min
1100	connect to flow cell								
1104	2.0	-	5.9	0.109	200	3.4	14.3	-2	
1107	3.0	-	6.0	0.109	120	2.8	14.1	-2	
1110	4.0	-	6.1	0.104	90	2.6	14.1	-2	
1113	5.0	-	6.1	0.102	68	2.4	14.1	0	
1116	6.0	-	6.1	0.102	49	2.3	14.0	0	
1119	7.0	-	6.2	0.101	42	2.1	14.1	3	
1122	8.0	-	6.2	0.101	43	2.0	14.0	3	
1125	9.0	-	6.2	0.101	42	2.0	14.0	2	

Final (at time of sample collection)

1125	9.0	-	6.2	0.101	42	2.0	14.0	2	
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Well Volume Calculation

Well volume (liters) = [Well casing volume (liters/ft)] x [Length of water column (ft)]

Well casing diameter (in) → Well casing volume (liters/ft)

1.25" → 0.3 1.5" → 0.4 2" → 0.6 2.5" → 1 3" → 1.4 3.5" → 2 4" → 2.5 6" → 5.5



Sealaska Environmental Services

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Well Inspection, Purging, and Field Measurement Form

Contract Number: _____ Task Order: 01 Installation: JBLM Site Name: HCC 9-2

Well Data

Well ID: 10-A17-8 Measuring Point (MP): Top of Casing, Rim Monument, Other: _____
 Total Well Depth (ft below MP): 38.30 Pooled Water in Well Head: Y: N: Well Casing Volume (liters/ft): 6.6
 Depth to Water (ft below MP): 27.36 Inner Casing Straight and Clear: Y: N: Well Volume (liters): 6.564
 Length of Water Column in well (ft): 10.94 Well Head Locked: Y: N: 3 x Well Volume (liters): 19.672
 Diameter of well casing (inches): 2 in Exterior Seal Good Y: N: Volume Purged (liters): 12.50
 Purge Method: Peristaltic/ Submersible /Bladder/Other: _____ Remarks: _____

Water Sample Data

Sample ID: ACC 140922ICAMS Type: ENV Date: 09/22/14 Time: 1335 # Containers: 6
 QC Sample ID: ACC 140922DWP2 Type: DWP Date: 09/22/14 Time: 1345 # Containers: 6
 Sampling Personnel: S.P., B.K., T.M. Sampling Method: low flow / grab
 Remarks (color, odor, etc.): _____

Time	Purge Vol. (liters)	Depth to Water (ft btoc)	pH	Spec. Cond. (ms/cm)	Turbidity (NTU)	DO (mg/L)	Temp. (°C)	ORP (mv)	Notes
Stabilization Requirements			(± 2.0)	(± 10%)	(± 10%)	(± 10%)	(± 10%)	(± 10%)	
1300	0	27.36							Initial Depth to Water (Pre-pumping)
1307	started pump								Set flow rate: 420 ml/min
1313	connect to flow cell								
1316	5.0	27.10	6.4	0.156	100	5.7	18.2	-9	
1319	6.25	27.65	6.4	0.156	55	5.2	18.7	-12	
1322	7.50	27.65	6.4	0.157	42	4.9	18.6	-15	
1325	8.75	27.63	6.4	0.157	43	4.7	18.8	-19	
1328	10.00	27.63	6.4	0.158	42	4.5	18.8	-20	
1331	11.25	27.63	6.4	0.159	42	4.4	18.9	-21	
1334	12.50								
Final (at time of sample collection)									
13:31	11.25	27.63	6.4	0.159	42	4.4	18.9	-21	

Well Volume Calculation

Well volume (liters) = [Well casing volume (liters/ft)] x [Length of water column (ft)]

Well casing diameter (in) → Well casing volume (liters/ft)

- 1.25" → 0.3 1.5" → 0.4 2" → 0.6 2.5" → 1 3" → 1.4 3.5" → 2 4" → 2.5 6" → 5.5



Sealaska Environmental Services

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Well Inspection, Purging, and Field Measurement Form

Contract Number: _____ Task Order: 4 Installation: JBIM Site Name: APC 9-2

Well Data

Well ID: 95-A17-2 Measuring Point (MP): Top of Casing Rim Monument, Other: _____
 Total Well Depth (ft below MP): 31.70 Pooled Water in Well Head: Y: N: Well Casing Volume (liters/ft): 0.6
 Depth to Water (ft below MP): 27.60 Inner Casing Straight and Clear: Y: N: Well Volume (liters): 6.04
 Length of Water Column in well (ft): 10.1 Well Head Locked: Y: N: 3 x Well Volume (liters): 18.12
 Diameter of well casing (inches): 2 in Exterior Seal Good Y: N: Volume Purged (liters): 11.0
 Purge Method: Peristaltic Submersible/Bladder/Other: _____ Remarks: _____

Water Sample Data

Sample ID: NO1409²²SA17Z Type: ENV/MS/MSD Date: 9/22/14 Time: 1500 # Containers: 18
 QC Sample ID: NA Type: NA Date: NA Time: NA # Containers: NA
 Sampling Personnel: B. Kercher, S. Patterson, T. Malambokai Sampling Method: low flow / grab
 Remarks (color, odor, etc.): _____

Time	Purge Vol. (liters)	Depth to Water (ft btoc)	pH	Spec. Cond. (ms/cm)	Turbidity (NTU)	DO (mg/L)	Temp. (°C)	ORP (mv)	Notes
Stabilization Requirements			(± 2.0)	(± 10%)	(± 10%)	(± 10%)	(± 10%)	(± 10%)	
1430	0	27.60							Initial Depth to Water (Pre-pumping)
1435	Start pump								Self flow rate: 220 ml/min
143541	2.0	-	6.5	0.148	260	7.7	17.2	167	
1444	3.5	-	6.5	0.147	220	7.0	17.0	167	
1447	5.0	-	6.5	0.148	180	6.7	17.0	167	
1450	6.5	-	6.4	0.147	140	6.4	17.0	168	
1453	8.0	-	6.5	0.147	110	6.3	17.1	169	
1456	9.5	-	6.5	0.147	100	6.0	17.1	171	
1459	11.0	-	6.5	0.147	110	5.9	17.2	173	
Final (at time of sample collection)									
1459	11.0	-	6.5	0.147	110	5.9	17.2	173	
Well Volume Calculation									
Well volume (liters) = [Well casing volume (liters/ft)] x [Length of water column (ft)]									
Well casing diameter (in) → Well casing volume (liters/ft)									
1.25" → 0.3	1.5" → 0.4	2" → 0.6	2.5" → 1	3" → 1.4	3.5" → 2	4" → 2.5	6" → 5.5		



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**Well Inspection,
 Purging, and Field
 Measurement Form**

Contract Number: _____ Task Order: 01 Installation: JIBM Site Name: AOC 8-9-2

Well Data

Well ID: 95-A17-3a Measuring Point (MP): Top of Casing, Rim Monument, Other: _____
 Total Well Depth (ft below MP): 31.31 Pooled Water in Well Head: Y: _____ N: Well Casing Volume (liters/ft): 0.6
 Depth to Water (ft below MP): 28.35 Inner Casing Straight and Clear: Y: N: _____ Well Volume (liters): 1.78
 Length of Water Column in well (ft): 2.96 Well Head Locked: Y: N: _____ 3 x Well Volume (liters): 5.33
 Diameter of well casing (inches): 2.00 Exterior Seal Good Y: N: _____ Volume Purged (liters): 6.0
 Purge Method: Peristaltic/Submersible/Bladder/Other: _____ Remarks: _____

Water Sample Data

Sample ID: AOC14092395N17A Type: SW Date: 092314 Time: 1206 # Containers: 6
 QC Sample ID: NA Type: NA Date: NA Time: NA # Containers: NA
 Sampling Personnel: S.P.B.K. Sampling Method: low flow/grab
 Remarks (color, odor, etc.): Stinky petroleum odor

Time	Purge Vol. (liters)	Depth to Water (ft btoc)	pH	Spec. Cond. (ms/cm)	Turbidity (NTU)	DO (mg/L)	Temp. (°C)	ORP (mv)	Notes
Stabilization Requirements		(± 0.5)	(± 0.2)	(± 10%)	(± 10% or <20)	(± 10%)	(± 10%)	(± 10)	
1145	0	28.35	Initial Depth to Water (Pre-pumping)						
1147	Start	pump	Set	Flow Rate	340 ml/min				
1150	Connect	to	flow	cell					
1154	2.0	-	6.1	0.145	52	4.6	14.7	20	
1157	3.0	-	6.3	0.145	31	3.5	14.7	23	
1200	4.0	-	6.2	0.146	29	3.2	14.6	32	
1203	5.0	-	6.3	0.146	25	3.0	14.7	36	
1206	6.0	-	6.3	0.147	24	2.9	14.7	42	
Final (at time of sample collection)									
1206	6.0	-	6.3	0.147	24	2.9	14.7	42	

Well Volume Calculation

Well volume (liters) = [Well casing volume (liters/ft)] x [Length of water column (ft)]

Well casing diameter (in) → Well casing volume (liters/ft)

- 1.25" → 0.3 1.5" → 0.4 2" → 0.6 2.5" → 1 3" → 1.4 3.5" → 2 4" → 2.5 6" → 5.5

Meter Model: U-22

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Revision: June 2014



Sealaska Environmental Services

Marine Science Center, P.O. Box 869
18743 Front Street, NE, Suite 201
Poulsbo, WA 98370

Well Inspection, Purging, and Field Measurement Form

Contract Number: _____ Task Order: 01 Installation: JBLM Site Name: Acc 10-8

Well Data

Well ID: Acc 10-8-B05 Measuring Point (MP): Top of Casing Rim Monument, Other: _____
 Total Well Depth (ft below MP): 48.00 Pooled Water in Well Head: Y: ___ N: Well Casing Volume (liters/ft): 0.6
 Depth to Water (ft below MP): 40.65 Inner Casing Straight and Clear: Y: N: ___ Well Volume (liters): 4.41
 Length of Water Column in well (ft): 7.35 Well Head Locked: Y: N: ___ 3 x Well Volume (liters): 13.23
 Diameter of well casing (inches): 2 Exterior Seal Good Y: N: ___ Volume Purged (liters): 13.46
 Purge Method: Peristaltic/Submersible/Bladder/Other: BAILED Remarks: _____

Water Sample Data

Sample ID: Acc 10-8-B05 Type: ENV. Date: 09/25/14 Time: 1420 # Containers: 2
 QC Sample ID: NA Type: NA Date: NA Time: NA # Containers: NA
 Sampling Personnel: S.P., B.K. Sampling Method: Grab
 Remarks (color, odor, etc.): _____

Vol. in Bailer (liters)	Purge Vol. (liters)	Vol. in Bailer (liters)	Purge Vol. (liters)	Vol. in Bailer (liters)	Purge Vol. (liters)	Vol. in Bailer (liters)	Purge Vol. (liters)	Vol. in Bailer (liters)	Purge Vol. (liters)
.150	.150	.320	4.160	.220	7.890	.330	13.460		
.330	.480	.260	4.420	.480	8.370				
.280	.760	.290	4.710	.370	8.740				
.240	1.000	.300	5.010	.460	9.200				
.320	1.320	.280	5.290	.550	9.750				
.170	1.490	.200	5.490	.570	10.320				
.240	1.730	.220	5.710	.630	10.950				
.250	1.980	.250	5.960	.620	11.510				
.330	2.310	.310	6.270	.420	11.990				
.300	2.610	.300	6.570	.190	12.180				
.310	2.920	.310	6.880	.190	12.370				
.300	3.220	.310	7.190	.130	12.900				
.330	3.550	.300	7.490	.130	13.030				
.290	3.840	.180	7.670	.100	13.130				

Well Volume Calculation

Well volume (liters) = [Well casing volume (liters/ft)] x [Length of water column (ft)]

Well casing diameter (in) → Well casing volume (liters/ft)

- 1.25" → 0.3 1.5" → 0.4 2" → 0.6 2.5" → 1 3" → 1.4 3.5" → 2 4" → 2.5 6" → 5.5

Meter Model: NA

Page 1 of 1

Revision: June 2014



Sealaska Environmental Services

Marine Science Center, P.O. Box 869
18743 Front Street, NE, Suite 201
Poulsbo, WA 98370

Well Inspection, Purging, and Field Measurement Form

Contract Number: _____ Task Order: 01 Installation: JBEM Site Name: AOC 10-8

Well Data

Well ID: JP-MW-02 Measuring Point (MP): Top of Casing, Rim Monument, Other: _____
 Total Well Depth (ft below MP): 51.0 Pooled Water in Well Head: Y: N: Well Casing Volume (liters/ft): 0.6
 Depth to Water (ft below MP): 39.15 Inner Casing Straight and Clear: Y: N: Well Volume (liters): 7.11
 Length of Water Column in well (ft): 11.85 Well Head Locked: Y: N: 3 x Well Volume (liters): 21.3
 Diameter of well casing (inches): 2 Exterior Seal Good Y: N: Volume Purged (liters): 9.4
 Purge Method: Peristaltic/Submersible/Bladder/Other: _____ Remarks: _____

Water Sample Data

Sample ID: AOC140925 JPMW Type: ENV Date: 092514 Time: 1515 # Containers: 2
 QC Sample ID: NA Type: NA Date: NA Time: NA # Containers: NA
 Sampling Personnel: S. Patterson, B. Kecher Sampling Method: low flow/grab
 Remarks (color, odor, etc.): _____

Time	Purge Vol. (liters)	Depth to Water (ft btoc)	pH	Spec. Cond. (ms/cm)	Turbidity (NTU)	DO (mg/L)	Temp. (°C)	ORP (mv)	Notes
Stabilization Requirements		(± 0.5)	(± 0.2)	(± 10%)	(± 10% or <20)	(± 10%)	(± 10%)	(± 10)	
1445	0	39.15							Initial Depth to Water (Pre-pumping)
1455	Start pump								Set flow rate: 460 ml/min
1456	Connect to flow cell								
1457	1.0	39.20	5.5	0.137	150	9.5	15.8	218	
1500	2.4	39.20	6.1	0.131	100	8.1	16.4	163	
1503	3.8	39.20	6.3	0.127	50	7.9	16.6	128	
1506	5.2	39.20	6.3	0.125	40	7.9	16.5	123	
1509	6.6	39.20	6.4	0.123	37	8.0	16.2	122	
1512	8.0	39.20	6.4	0.123	37	7.9	16.1	124	
Final (at time of sample collection)									
1515	9.4	39.20	6.4	0.123	37	7.9	16.1	125	

Well Volume Calculation

Well volume (liters) = [Well casing volume (liters/ft)] x [Length of water column (ft)]

Well casing diameter (in) → Well casing volume (liters/ft)

1.25" → 0.3 1.5" → 0.4 2" → 0.6 2.5" → 1 3" → 1.4 3.5" → 2 4" → 2.5 6" → 5.5

APPENDIX B
LABORATORY ANALYTICAL REPORTS
(PROVIDED ON CD)



ALS Environmental
ALS Group USA, Corp.
1317 South 13th Avenue
Kelso, WA 98626
T: +1 360 577 7222
F: +1 360 636 1068
www.alsglobal.com

October 35, 2014

Analytical Report for Service Request No: K1410066

Scott Elkind
Sealaska Environmental Services, LLC
18743 Front Street NE
P.O. Box 869
Poulsbo, WA 98370

RE: JBLM AOC 8-4/TO 01

Dear Scott:

Enclosed are the results of the samples submitted to our laboratory on September 18, 2014. For your reference, these analyses have been assigned our service request number K1410066.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3376. You may also contact me via Email at Gregory.Salata@alsglobal.com.

Respectfully submitted,

ALS Group USA Corp. dba ALS Environmental

Gregory Salata, Ph.D.
Client Services Manager

GS/kd

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ALS Environmental
ALS Group USA, Corp.
1317 South 13th Avenue
Kelso, WA 98626
T: +1 360 577 7222
F: +1 360 636 1068
www.alsglobal.com

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Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
 - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses**

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
ISO 17025	http://www.pjllabs.com/	L14-50
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS ENVIRONMENTAL

Client: Sealaska Environmental Services, LLC
Project: JBLM AOC 8-4/TO 01
Sample Matrix: Water

Service Request No.: K1410066
Date Received: 9/18/14

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Four water samples were received for analysis at ALS Environmental on 9/18/14. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Diesel and Residual Range Organics

Sample Notes and Discussion:

Manual integration of one or more chromatographic peaks was required to correct the integration performed by the automated data processing program. The manual integration was performed in accordance with ALS policy, which is consistent with the National Environmental Laboratory Accreditation Program (NELAP), Department of Defense (DOD), and other certifying agencies. The analytes that required manual integrations are identified on each sample report contained in this data package.

Relative Percent Difference Exceptions:

The Relative Percent Difference (RPD) criterion for the replicate analysis of all analytes in sample AOC140916A0111MW06 was not applicable because the analyte concentration was not significantly greater than the Method Reporting Limit (MRL). Analytical values derived from measurements close to the detection limit are not subject to the same accuracy and precision criteria as results derived from measurements higher on the calibration range for the method.

No other anomalies associated with the analysis of these samples were observed.

Approved by _____

Gregory Salata



Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com



PC Greg

Cooler Receipt and Preservation Form

Client / Project: Semaska Service Request K14 10006

Received: 9/18/14 Opened: 9/18/14 By: me Unloaded: 9/18/14 By: me

- 1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered Mc DEL.
- 2. Samples were received in: (circle) Cooler Box Envelope Other NA
- 3. Were custody seals on coolers? NA Y N If yes, how many and where? 4 FRONT 4 BACK
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
4.7	4.9	1.9	2.1	0.2	322				
1.7	1.4	4.2	3.9	-0.3	338				
2.0	2.0	0.4	0.4	0	351				
1.4	1.4	4.3	4.3	0	348				

- 4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
- 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- 6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
- 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- 8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
- 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- 10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
- 11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
- 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____



Diesel and Residual Range Organics

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Client: Sealaska Environmental Services, LLC
Project: JBLM AOC 8-4/TO 01

Service Request: K1410066

**Cover Page - Organic Analysis Data Package
 Diesel and Residual Range Organics**

Sample Name	Lab Code	Date Collected	Date Received
AOC140916A0111MW08	K1410066-001	09/16/2014	09/18/2014
AOC140916DUP1	K1410066-002	09/16/2014	09/18/2014
AOC140916A0111MW04	K1410066-003	09/16/2014	09/18/2014
AOC140916A0111MW07	K1410066-004	09/16/2014	09/18/2014
AOC140916A0111MW06	K1410066-005	09/16/2014	09/18/2014
AOC140916A0111MW06	KWG1412984-1	09/16/2014	09/18/2014

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AOC 8-4/TO 01
Sample Matrix: Water

Service Request: K1410066
Date Collected: 09/16/2014
Date Received: 09/18/2014

Diesel and Residual Range Organics

Sample Name: AOC140916A0111MW08
Lab Code: K1410066-001
Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	720	Y	240	20	11	1	09/23/14	10/02/14	KWG1412984	
Residual Range Organics (RRO)	450	L	240	50	19	1	09/23/14	10/02/14	KWG1412984	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	95	50-150	10/02/14	Acceptable
n-Triacontane	101	50-150	10/02/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AOC 8-4/TO 01
Sample Matrix: Water

Service Request: K1410066
Date Collected: 09/16/2014
Date Received: 09/18/2014

Diesel and Residual Range Organics

Sample Name: AOC140916DUP1 **Units:** ug/L
Lab Code: K1410066-002 **Basis:** NA
Extraction Method: EPA 3510C **Level:** Low
Analysis Method: NWTPH-Dx

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	590	Y	240	20	11	1	09/23/14	10/02/14	KWG1412984	
Residual Range Organics (RRO)	330	L	240	50	19	1	09/23/14	10/02/14	KWG1412984	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	94	50-150	10/02/14	Acceptable
n-Triacontane	101	50-150	10/02/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AOC 8-4/TO 01
Sample Matrix: Water

Service Request: K1410066
Date Collected: 09/16/2014
Date Received: 09/18/2014

Diesel and Residual Range Organics

Sample Name: AOC140916A0111MW04
Lab Code: K1410066-003
Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	1100	Y	240	20	11	1	09/23/14	10/02/14	KWG1412984	
Residual Range Organics (RRO)	380	L	240	50	19	1	09/23/14	10/02/14	KWG1412984	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	98	50-150	10/02/14	Acceptable
n-Triacontane	104	50-150	10/02/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AOC 8-4/TO 01
Sample Matrix: Water

Service Request: K1410066
Date Collected: 09/16/2014
Date Received: 09/18/2014

Diesel and Residual Range Organics

Sample Name: AOC140916A0111MW07
Lab Code: K1410066-004
Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	140	J	240	20	11	1	09/23/14	10/01/14	KWG1412984	
Residual Range Organics (RRO)	200	J	240	50	19	1	09/23/14	10/01/14	KWG1412984	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	99	50-150	10/01/14	Acceptable
n-Triacontane	104	50-150	10/01/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AOC 8-4/TO 01
Sample Matrix: Water

Service Request: K1410066
Date Collected: 09/16/2014
Date Received: 09/18/2014

Diesel and Residual Range Organics

Sample Name: AOC140916A0111MW06
Lab Code: K1410066-005
Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	34	J	240	20	11	1	09/23/14	10/01/14	KWG1412984	
Residual Range Organics (RRO)	150	J	240	50	19	1	09/23/14	10/01/14	KWG1412984	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	100	50-150	10/01/14	Acceptable
n-Triacontane	108	50-150	10/01/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AOC 8-4/TO 01
Sample Matrix: Water

Service Request: K1410066
Date Collected: NA
Date Received: NA

Diesel and Residual Range Organics

Sample Name: Method Blank **Units:** ug/L
Lab Code: KWG1412984-4 **Basis:** NA
Extraction Method: EPA 3510C **Level:** Low
Analysis Method: NWTPH-Dx

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	ND	U	240	20	11	1	09/23/14	10/01/14	KWG1412984	
Residual Range Organics (RRO)	ND	U	240	50	19	1	09/23/14	10/01/14	KWG1412984	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	96	50-150	10/01/14	Acceptable
n-Triacontane	98	50-150	10/01/14	Acceptable

Comments: _____

Client: Sealaska Environmental Services, LLC
Project: JBLM AOC 8-4/TO 01
Sample Matrix: Water

Service Request: K1410066

**Surrogate Recovery Summary
 Diesel and Residual Range Organics**

Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Units: Percent
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>
AOC140916A0111MW08	K1410066-001	95	101
AOC140916DUP1	K1410066-002	94	101
AOC140916A0111MW04	K1410066-003	98	104
AOC140916A0111MW07	K1410066-004	99	104
AOC140916A0111MW06	K1410066-005	100	108
AOC140916A0111MW06DUP	KWG1412984-1	95	102
Method Blank	KWG1412984-4	96	98
Lab Control Sample	KWG1412984-2	100	99
Duplicate Lab Control Sample	KWG1412984-3	101	99

Surrogate Recovery Control Limits (%)

Sur1 = o-Terphenyl	50-150
Sur2 = n-Triacontane	50-150

Results flagged with an asterisk (*) indicate values outside control criteria.
 Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client: Sealaska Environmental Services, LLC
Project: JBLM AOC 8-4/TO 01
Sample Matrix: Water

Service Request: K1410066
Date Extracted: 09/23/2014
Date Analyzed: 10/01/2014

Duplicate Sample Summary
Diesel and Residual Range Organics

Sample Name: AOC140916A0111MW06
Lab Code: K1410066-005
Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1412984

Analyte Name	LOQ	MDL	Sample Result	AOC140916A0111MW06DUP KWG1412984-1 Duplicate Sample		Relative Percent Difference	RPD Limit
				Result	Average		
Diesel Range Organics (DRO)	250	11	34	42	38	22 #	30
Residual Range Organics (RRO)	250	19	150	160	160	7 #	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Sealaska Environmental Services, LLC
Project: JBLM AOC 8-4/TO 01
Sample Matrix: Water

Service Request: K1410066
Date Extracted: 09/23/2014
Date Analyzed: 10/01/2014

**Lab Control Spike/Duplicate Lab Control Spike Summary
 Diesel and Residual Range Organics**

Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1412984

Analyte Name	Lab Control Sample KWG1412984-2 Lab Control Spike			Duplicate Lab Control Sample KWG1412984-3 Duplicate Lab Control Spike			%Rec Limits	RPD	RPD Limit
	Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
Diesel Range Organics (DRO)	1700	1600	106	1620	1600	101	46-140	5	30
Residual Range Organics (RRO)	991	800	124	941	800	118	45-159	5	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Sealaska Environmental Services, LLC
Project: JBLM AOC 8-4/TO 01
Sample Matrix: Water

Service Request: K1410066
Date Extracted: 09/23/2014
Date Analyzed: 10/01/2014
Time Analyzed: 22:22

Method Blank Summary
Diesel and Residual Range Organics

Sample Name: Method Blank
Lab Code: KWG1412984-4
Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Instrument ID: GC21
File ID: J:\GC21\DATA\100114B\1001F055.D
Level: Low
Extraction Lot: KWG1412984

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1412984-2	J:\GC21\DATA\100114B\1001F051.D	10/01/14	21:37
Duplicate Lab Control Sample	KWG1412984-3	J:\GC21\DATA\100114B\1001F053.D	10/01/14	22:00
AOC140916A0111MW06	K1410066-005	J:\GC21\DATA\100114B\1001F059.D	10/01/14	23:07
AOC140916A0111MW06DUP	KWG1412984-1	J:\GC21\DATA\100114B\1001F061.D	10/01/14	23:29
AOC140916A0111MW07	K1410066-004	J:\GC21\DATA\100114B\1001F063.D	10/01/14	23:51
AOC140916A0111MW04	K1410066-003	J:\GC21\DATA\100114B\1001F065.D	10/02/14	00:13
AOC140916DUP1	K1410066-002	J:\GC21\DATA\100114B\1001F067.D	10/02/14	00:36
AOC140916A0111MW08	K1410066-001	J:\GC21\DATA\100114B\1001F069.D	10/02/14	00:58

Client: Sealaska Environmental Services, LLC
Project: JBLM AOC 8-4/TO 01

Service Request: K1410066
Calibration Date: 09/29/2014

Initial Calibration Summary
Diesel and Residual Range Organics

Calibration ID: CAL13578
Instrument ID: GC21

Column: ZB-1

Level ID	File ID	Level ID	File ID
A	J:\GC21\DATA\092914B\0929F041.D	K	J:\GC21\DATA\092914B\0929F067.D
B	J:\GC21\DATA\092914B\0929F043.D	L	J:\GC21\DATA\092914B\0929F069.D
C	J:\GC21\DATA\092914B\0929F045.D	M	J:\GC21\DATA\092914B\0929F071.D
D	J:\GC21\DATA\092914B\0929F047.D	N	J:\GC21\DATA\093014B\0930F089.D
E	J:\GC21\DATA\092914B\0929F049.D	O	J:\GC21\DATA\093014B\0930F091.D
F	J:\GC21\DATA\092914B\0929F057.D	P	J:\GC21\DATA\093014B\0930F093.D
G	J:\GC21\DATA\092914B\0929F059.D	Q	J:\GC21\DATA\093014B\0930F095.D
H	J:\GC21\DATA\092914B\0929F061.D	R	J:\GC21\DATA\093014B\0930F097.D
I	J:\GC21\DATA\092914B\0929F063.D		
J	J:\GC21\DATA\092914B\0929F065.D		

Analyte Name	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	
Diesel Range Organics (DRO)	F	20	832	G	50	934	H	200	802	I	500	972	J	2000	974	
	K	5000	952	L	20000	981	M	50000	925							
	Residual Range Organics (RRO)															
	P	500	503	Q	2000	514	R	5000	498	N	50	507	O	200	512	
o-Terphenyl	F	1.0	1220	G	2.5	1280	H	10	1120	I	25	1310	J	100	1310	
	K	250	1250													
n-Triacontane	F	1.0	1040	G	2.5	1090	H	10	961	I	25	1140	J	100	1140	
	K	250	1090													

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AOC 8-4/TO 01

Service Request: K1410066
Calibration Date: 09/29/2014

Initial Calibration Summary
Diesel and Residual Range Organics

Calibration ID: CAL13578
Instrument ID: GC21

Column: ZB-1

Analyte Name	Compound Type	Calibration Evaluation				
		Fit Type	Eval.	Eval. Result	Q	Control Criteria
Diesel Range Organics (DRO)	MS	AverageRF	% RSD	7.4		≤ 20
Residual Range Organics (RRO)	MS	AverageRF	% RSD	1.3		≤ 20
o-Terphenyl	SURR	AverageRF	% RSD	5.9		≤ 20
n-Triacontane	SURR	AverageRF	% RSD	6.3		≤ 20

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AOC 8-4/TO 01

Service Request: K1410066
Calibration Date: 09/29/2014
Date Analyzed: 09/29/2014 - 10/01/2014

**Second Source Calibration Verification
 Diesel and Residual Range Organics**

Calibration Type: External Standard
Analysis Method: NWTPH-Dx

Calibration ID: CAL13578
Units: ppm

File ID: J:\GC21\DATA\092914B\0929F053.D
 J:\GC21\DATA\092914B\0929F075.D
 J:\GC21\DATA\100114B\1001F005.D

Column ID: ZB-1

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Diesel Range Organics (DRO)	1000	1000	921	922	0	NA	± 15 %	AverageRF
Residual Range Organics (RRO)	1000	860	507	438	-14	NA	± 15 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AOC 8-4/TO 01

Service Request: K1410066
Date Analyzed: 10/01/2014

Continuing Calibration Verification Summary
Diesel and Residual Range Organics

Calibration Type: External Standard
Analysis Method: NWTPH-Dx

Calibration Date: 09/29/2014
Calibration ID: CAL13578
Analysis Lot: KWG1413389
Units: ppm
Column ID: ZB-1

File ID: J:\GC21\DATA\100114B\1001F045.D
 J:\GC21\DATA\100114B\1001F047.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Diesel Range Organics (DRO)	1000	1100	921	1010	10	NA	± 15 %	AverageRF
Residual Range Organics (RRO)	1000	910	507	461	-9	NA	± 15 %	AverageRF
o-Terphenyl	50	55	1250	1370	10	NA	± 15 %	AverageRF
n-Triacontane	50	54	1080	1170	8	NA	± 15 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AOC 8-4/TO 01

Service Request: K1410066
Date Analyzed: 10/02/2014

Continuing Calibration Verification Summary
Diesel and Residual Range Organics

Calibration Type: External Standard
Analysis Method: NWTPH-Dx

Calibration Date: 09/29/2014
Calibration ID: CAL13578
Analysis Lot: KWG1413389
Units: ppm
Column ID: ZB-1

File ID: J:\GC21\DATA\100114B\1001F075.D
 J:\GC21\DATA\100114B\1001F077.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Diesel Range Organics (DRO)	1000	1100	921	988	7	NA	± 15 %	AverageRF
Residual Range Organics (RRO)	1000	990	507	502	-1	NA	± 15 %	AverageRF
o-Terphenyl	50	53	1250	1330	6	NA	± 15 %	AverageRF
n-Triacontane	50	53	1080	1130	5	NA	± 15 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AOC 8-4/TO 01

Service Request: K1410066

Analysis Run Log
Diesel and Residual Range Organics

Analysis Method: NWTPH-Dx

Analysis Lot: KWG1413389
Instrument ID: GC21
Column: ZB-1

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
1001F011.D	Continuing Calibration Verification	KWG1413389-1	10/1/2014	13:27		10/1/2014	13:43
1001F015.D	Continuing Calibration Verification	KWG1413389-1	10/1/2014	14:12		10/1/2014	14:28
1001FX19.D	Continuing Calibration Verification	KWG1413389-1	10/1/2014	15:41		10/1/2014	15:57
1001FX21.D	Instrument Blank	KWG1413389-5	10/1/2014	16:04		10/1/2014	16:20
1001F023.D	ZZZZZZ	ZZZZZZ	10/1/2014	16:26		10/1/2014	16:42
1001F025.D	ZZZZZZ	ZZZZZZ	10/1/2014	16:48		10/1/2014	17:04
1001F027.D	ZZZZZZ	ZZZZZZ	10/1/2014	17:11		10/1/2014	17:27
1001F029.D	ZZZZZZ	ZZZZZZ	10/1/2014	17:33		10/1/2014	17:49
1001F031.D	ZZZZZZ	ZZZZZZ	10/1/2014	17:54		10/1/2014	18:10
1001F033.D	ZZZZZZ	ZZZZZZ	10/1/2014	18:17		10/1/2014	18:33
1001F035.D	ZZZZZZ	ZZZZZZ	10/1/2014	18:39		10/1/2014	18:55
1001F037.D	ZZZZZZ	ZZZZZZ	10/1/2014	19:01		10/1/2014	19:17
1001F039.D	ZZZZZZ	ZZZZZZ	10/1/2014	19:24		10/1/2014	19:40
1001F041.D	ZZZZZZ	ZZZZZZ	10/1/2014	19:46		10/1/2014	20:02
1001F043.D	Continuing Calibration Verification	KWG1413389-2	10/1/2014	20:08		10/1/2014	20:24
1001F045.D	Continuing Calibration Verification	KWG1413389-2	10/1/2014	20:30		10/1/2014	20:46
1001F047.D	Continuing Calibration Verification	KWG1413389-2	10/1/2014	20:53		10/1/2014	21:09
1001F049.D	Instrument Blank	KWG1413389-6	10/1/2014	21:15		10/1/2014	21:31
1001F051.D	Lab Control Sample	KWG1412984-2	10/1/2014	21:37		10/1/2014	21:53
1001F053.D	Duplicate Lab Control Sample	KWG1412984-3	10/1/2014	22:00		10/1/2014	22:16
1001F055.D	Method Blank	KWG1412984-4	10/1/2014	22:22		10/1/2014	22:38
1001F057.D	ZZZZZZ	ZZZZZZ	10/1/2014	22:44		10/1/2014	23:00
1001F059.D	AOC140916A0111MW06	K1410066-005	10/1/2014	23:07		10/1/2014	23:23
1001F061.D	AOC140916A0111MW06DUP	KWG1412984-1	10/1/2014	23:29		10/1/2014	23:45
1001F063.D	AOC140916A0111MW07	K1410066-004	10/1/2014	23:51		10/2/2014	00:07
1001F065.D	AOC140916A0111MW04	K1410066-003	10/2/2014	00:13		10/2/2014	00:29
1001F067.D	AOC140916DUP1	K1410066-002	10/2/2014	00:36		10/2/2014	00:52
1001F069.D	AOC140916A0111MW08	K1410066-001	10/2/2014	00:58		10/2/2014	01:14
1001F071.D	ZZZZZZ	ZZZZZZ	10/2/2014	01:20		10/2/2014	01:36
1001F073.D	Continuing Calibration Verification	KWG1413389-3	10/2/2014	01:43		10/2/2014	01:59
1001F075.D	Continuing Calibration Verification	KWG1413389-3	10/2/2014	02:05		10/2/2014	02:21
1001F077.D	Continuing Calibration Verification	KWG1413389-3	10/2/2014	02:27		10/2/2014	02:43
1001F079.D	Instrument Blank	KWG1413389-7	10/2/2014	02:49		10/2/2014	03:05
1001F081.D	ZZZZZZ	ZZZZZZ	10/2/2014	03:12		10/2/2014	03:28

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AOC 8-4/TO 01

Service Request: K1410066

Analysis Run Log
Diesel and Residual Range Organics

Analysis Method: NWTPH-Dx

Analysis Lot: KWG1413389
Instrument ID: GC21
Column: ZB-1

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
1001F083.D	ZZZZZZ	ZZZZZZ	10/2/2014	03:34		10/2/2014	03:50
1001F085.D	ZZZZZZ	ZZZZZZ	10/2/2014	03:56		10/2/2014	04:12
1001F087.D	ZZZZZZ	ZZZZZZ	10/2/2014	04:19		10/2/2014	04:35
1001F089.D	ZZZZZZ	ZZZZZZ	10/2/2014	04:41		10/2/2014	04:57
1001F109.D	Continuing Calibration Verification	KWG1413389-4	10/2/2014	08:24		10/2/2014	08:40
1001F111.D	Continuing Calibration Verification	KWG1413389-4	10/2/2014	08:46		10/2/2014	09:02
1001F113.D	Continuing Calibration Verification	KWG1413389-4	10/2/2014	09:08		10/2/2014	09:24
1001F115.D	Instrument Blank	KWG1413389-8	10/2/2014	09:30		10/2/2014	09:46

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AOC 8-4/TO 01
Sample Matrix: Water

Service Request: K1410066
Date Extracted: 09/23/2014

Extraction Prep Log
Diesel and Residual Range Organics

Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Extraction Lot: KWG1412984
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
AOC140916A0111MW08	K1410066-001	09/16/14	09/18/14	1060ml	2ml	NA	
AOC140916DUP1	K1410066-002	09/16/14	09/18/14	1060ml	2ml	NA	
AOC140916A0111MW04	K1410066-003	09/16/14	09/18/14	1080ml	2ml	NA	
AOC140916A0111MW07	K1410066-004	09/16/14	09/18/14	1060ml	2ml	NA	
AOC140916A0111MW06	K1410066-005	09/16/14	09/18/14	1060ml	2ml	NA	
AOC140916A0111MW06DUP	KWG1412984-1	09/16/14	09/18/14	1040ml	2ml	NA	
Method Blank	KWG1412984-4	NA	NA	1080ml	2ml	NA	
Lab Control Sample	KWG1412984-2	NA	NA	1000ml	2ml	NA	
Duplicate Lab Control Sample	KWG1412984-3	NA	NA	1000ml	2ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis



ALS Environmental
ALS Group USA, Corp.
1317 South 13th Avenue
Kelso, WA 98626
T: +1 360 577 7222
F: +1 360 636 1068
www.alsglobal.com

October 22, 2014

Analytical Report for Service Request No: K1410529

Scott Elkind
Sealaska Environmental Services, LLC
18743 Front Street NE
P.O. Box 869
Poulsbo, WA 98370

RE: TO 01 JBLM

Dear Scott:

Enclosed are the results of the samples submitted to our laboratory on September 26, 2014. For your reference, these analyses have been assigned our service request number K1410529.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3376. You may also contact me via Email at Gregory.Salata@alsglobal.com.

Respectfully submitted,

ALS Group USA Corp. dba ALS Environmental

Gregory Salata, Ph.D.
Client Services Manager

GS/aj

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ALS Environmental
ALS Group USA, Corp.
1317 South 13th Avenue
Kelso, WA 98626
T: +1 360 577 7222
F: +1 360 636 1068
www.alsglobal.com

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Acronyms

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State Certifications, Accreditations, And Licenses

Case Narrative

Chain Of Custody

Diesel Range Organics by Method NWTPH-Dx

Gasoline Range Organics by Method NWTPH-Gx

Volatile Organic Compounds by EPA Method 8260

Raw Data

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
 - i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
 - i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses**

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
ISO 17025	http://www.pjllabs.com/	L14-50
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS ENVIRONMENTAL

Client: Tetra Tech, Incorporated
Project: TO 01 JBLM
Sample Matrix: Water

Service Request No.: K1410529
Date Received: 09/26/14

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Thirty-eight water samples were received for analysis at ALS Environmental on 09/26/14. The samples were received in good condition and consistent with the accompanying chain of custody form, except where noted on the cooler receipt and preservation form included in this report. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Diesel Range Organics by Method NWTPH-Dx

Sample Notes and Discussion:

Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD). A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was analyzed and reported in lieu of the MS/MSD for these samples.

No other anomalies associated with the analysis of these samples were observed.

Gasoline Range Organics by Method NWTPH-Gx

Sample Notes and Discussion:

Manual integration of one or more chromatographic peaks was required to correct the integration performed by the automated data processing program. The manual integration was performed in accordance with ALS policy, which is consistent with the National Environmental Laboratory Accreditation Program (NELAP), Department of Defense (DOD), and other certifying agencies. Refer to the raw data for the compounds impacted by the manual integration.

No other anomalies associated with the analysis of these samples were observed.

Volatile Organic Compounds by EPA Method 8260

Calibration Verification Exceptions:

The following analytes were flagged as outside the control criterion for Continuing Calibration Verification (CCV) MS18\01003F008.D: Chloromethane, Bromomethane, Carbon Disulfide and cis-1,2-Dichloroethene. In accordance with the EPA Method, 80% or more of the CCV analytes must pass within 20% of the true value. The ALS SOP allows for 40% difference for the remaining analytes. The CCV met these criteria. The quality of the sample data was not significantly affected. No further corrective action was required.

Approved by _____



The following analytes were flagged as outside the control criterion for Continuing Calibration Verification (CCV) MS18\01004F009.D: Bromomethane, Carbon Disulfide, 2,2-Dichloropropane, 4-Methyl-2-pentanone and 1,1,2,2-Tetrachloroethane. In accordance with the EPA Method, 80% or more of the CCV analytes must pass within 20% of the true value. The ALS SOP allows for 40% difference for the remaining analytes. The CCV met these criteria. The quality of the sample data was not significantly affected. No further corrective action was required.

The following analytes were flagged as outside the control criterion for Continuing Calibration Verification (CCV) MS18\01006F003.D: Acetone, Carbon Disulfide, 2,2-Dichloropropane and 4-Methyl-2-pentanone. In accordance with the EPA Method, 80% or more of the CCV analytes must pass within 20% of the true value. The ALS SOP allows for 40% difference for the remaining analytes. The CCV met these criteria. The quality of the sample data was not significantly affected. No further corrective action was required.

The following analytes were flagged as outside the control criterion for Continuing Calibration Verification (CCV) MS18\01006F035.D: Acetone, Carbon Disulfide, 2-Butanone, trans-1,3-Dichloropropene and 2-Hexanone. In accordance with the EPA Method, 80% or more of the CCV analytes must pass within 20% of the true value. The ALS SOP allows for 40% difference for the remaining analytes. The CCV met these criteria. The quality of the sample data was not significantly affected. No further corrective action was required.

The ALS control criterion for the following analyte was not met in Continuing Calibration Verification (CCV) MS18\01006F035.D: 2,2-Dichloropropane and 4-Methyl-2-pentanone. In accordance with ALS standard operating procedures, an MRL check standard containing the analyte of concern was analyzed each day of analysis. The MRL check standard verifies instrument sensitivity was adequate to detect the analyte at the MRL on the day of analysis. Because the sensitivity was shown to be adequate to detect the compound in question the data quality has not been significantly affected. No further corrective action was taken.

Lab Control Sample Exceptions:

The control criterion was exceeded for Acetone in Laboratory Control Samples (LCS) KWG1413475-3, KWG1413488-3, KWG1413516-1 and KWG1413535-3. The recovery was within the marginal exceedance limits listed in DOD Quality Systems Manual 4.2. The data was flagged to indicate the issue. No further corrective action was required.

The control criterion was exceeded for 2,2-Dichloropropane in Laboratory Control Samples (LCS) KWG1413475-3, and KWG1413535-3. The recovery was within the marginal exceedance limits listed in DOD Quality Systems Manual 4.2. The data was flagged to indicate the issue. No further corrective action was required.

Matrix Spike Recovery Exceptions:

The matrix spike recovery of 2,2-Dichloropropane for sample AOC14092295A172 was outside control criteria. Positive detections in the parent sample are flagged, as per the DOD QAPP. No further corrective action was appropriate.

The matrix spike recovery of Chloroethane, 1,1-Dichloroethene, 2,2-Dichloropropane, 1,1-Dichloropropene and Benzene for sample LGC140924LC01-1 was outside control criteria. Positive detections in the parent sample are flagged, as per the DOD QAPP. No further corrective action was appropriate.

Sample Notes and Discussion:

Manual integration of one or more chromatographic peaks was required to correct the integration performed by the automated data processing program. The manual integration was performed in accordance with ALS policy, which is consistent with the National Environmental Laboratory Accreditation Program (NELAP), Department of Defense (DOD), and other certifying agencies. Refer to the raw data for the compounds impacted by the manual integration.

No other anomalies associated with the analysis of these samples were observed.

Approved by Gregory Salata



Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com



CHAIN OF CUSTODY

52766

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1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

SR# V1410529
COC Set 4 of 5
COC# _____

Project Name: <u>To OL JELM</u>		Project Number:		NUMBER OF CONTAINERS		6H	48H			7D	14D				28D			180D					Remarks						
Project Manager: <u>Scott ElKind</u>		Company: <u>Sealaska ENV</u>		SM 9221 B / Tot Coli MT	300.0 / NO2	300.0 / NO3	300.0 / NO3 Diss	SM 5210 B / BOD 5 Day	SM 2540 C / TDS	8260C / VOC FP	NWTPH-Dx / NW_TPH	NWTPH-Gx / NW_GAS	SM 2320 B / Alkalinity D	SM 2320 B / Bicarb Alk	SM 4500-CN- E / CN T	300.0 / CID	300.0 / SO4 D	353.2 / NO2 NO3 T	9060 / TOC T	SM 4500-NH3 G / Ammonia	SM 5220 C / COD T	200.7 / Metals D		200.7 / Metals T	1 BTEX 8260C	2	3		
Address: <u>18743 From St NE Poulsbo WA 98370</u>		Phone: <u>360-930-7107</u>		Email: <u>Scott.ElKind@sealaska.com</u>		Sampler Signature: <u>Elly Kercher</u>		Sampler Printed Name: <u>Elizabeth Kercher</u>																					
CLIENT SAMPLE ID	LABID	SAMPLING Date	Time	Matrix																									
1. AOC1409224131MN04		092214	0920	GW	2						2																		
2. AOC1409224131MN05		092214	1000	GW	2						2																		
3. AOC1409224131MN02		092214	1107	GW	2						2																		
4. AOC1409224131MN03		092214	1200	GW	2						2																		
5. TB-140922		092214	1300	GW	4							2											2						
6. AOC14092210A175		092214	1355	GW	6							3											3						
7. AOC140922DWP2		092214	1345	GW	6							3											3						
8. AOC14092295A172		092214	1500	GW	6						9												9						MS/MSD
9. AOC14092307A177		092314	1125	GW	6						3												3						
10. AOC14092395A173A		092314	1200	GW	6						3												3						

Report Requirements <input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. CLP Like Summary (no raw data) <input type="checkbox"/> IV. Data Validation Report <input type="checkbox"/> V. EDD	Invoice Information P.O.# _____ Bill To: _____ _____ _____	Circle which metals are to be analyzed Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Ti Sn V Zn Hg Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Ti Sn V Zn Hg
	Turnaround Requirements <input type="checkbox"/> 24 hr. _____ 48 hr. <input checked="" type="checkbox"/> 5 Day Standard	Special Instructions/Comments: * As per Contract

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: <u>Elly Kercher</u>	Signature: _____	Signature: _____	Signature: <u>Karla Smith</u>	Signature: _____	Signature: _____
Printed Name: <u>Elizabeth Kercher</u>	Printed Name: _____	Printed Name: _____	Printed Name: <u>ALS</u>	Printed Name: _____	Printed Name: _____
Firm: <u>Sealaska</u>	Firm: <u>Mc Delivery</u>	Firm: <u>Mc Delivery</u>	Firm: <u>9/26/14 1130</u>	Firm: _____	Firm: _____
Date/Time: <u>9/26/14 1000</u>	Date/Time: _____	Date/Time: _____	Date/Time: _____	Date/Time: _____	Date/Time: _____



CHAIN OF CUSTODY

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1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

SR# K1410524
COC Set 6 of 5
COC# _____

Project Name: <u>To OJBM</u>		Project Number:		NUMBER OF CONTAINERS	6H		48H			7D	14D				28D			180D		Remarks				
Project Manager: <u>Scott Elkind</u>		Company: <u>Sealaska ENV</u>			SM 9221 B / Tot Coli MT	300.0 / NO2	300.0 / NO3	300.0 / NO3 Diss	SM 5210 B / BOD 5 Day	SM 2540 C / TDS	8260C / VOC FP	NWTPH-Dx / NW_TPH	NWTPH-Gx / NW_GAS	SM 2320 B / Alkalinity D	SM 2320 B / Bicarb Alk	SM 4500-CN- E / CN T	300.0 / ClD	300.0 / SO4 D	353.2 / NO2 NO3 T		9060 / TOC T	SM 4500-NH3 G / Ammonia	SM 5220 C / COD T	200.7 / Metals D
Address: <u>18793 Front St NE Poulsbo WA 98050</u>		Phone #: <u>360.930.3187</u>		email: <u>Scott.Elkind@Sealaska.com</u>		Sampler Signature: <u>Eliza P Kercher</u>		Sampler Printed Name: <u>Elizabeth P Kercher</u>																
CLIENT SAMPLE ID	LABID	SAMPLING Date	Time	Matrix																				
1. AOC140925AOC108B05		092514	1420	2							2													
2. AOC140925JPMW02		092514	1515	2							2													
3. LFS140926LMLW-1A		092614	0950	2	2																			MS/MSD
4. LFS140926DUP-2A		092614	0955	1	1																			
5.																								
6.																								
7.																								
8.																								
9.																								
10.																								

Report Requirements

I. Routine Report: Method Blank, Surrogate, as required

II. Report Dup., MS, MSD as required

III. CLP Like Summary (no raw data)

IV. Data Validation Report

V. EDD

Invoice Information

P.O.# _____

Bill To: _____

Turnaround Requirements

___ 24 hr. ___ 48 hr.

5 Day Standard *

Requested Report Date _____

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Ti Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Ti Sn V Zn Hg

Special Instructions/Comments: *As per Contract

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other _____ (Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature: <u>Eliza Kercher</u>	Signature: _____	Signature: _____	Signature: <u>Karla Smith</u>	Signature: _____	Signature: _____
Printed Name: <u>Elizabeth Kercher</u>	Printed Name: _____	Printed Name: _____	Printed Name: <u>Karla Smith</u>	Printed Name: _____	Printed Name: _____
Firm: <u>Sealaska</u>	Firm: <u>MC Delivery</u>	Firm: <u>MC Delivery</u>	Firm: <u>ALS</u>	Firm: _____	Firm: _____
Date/Time: <u>9/26/14 1000</u>	Date/Time: _____	Date/Time: _____	Date/Time: <u>9/26/14 1130</u>	Date/Time: _____	Date/Time: _____



PC Hueg

Cooler Receipt and Preservation Form

Client / Project: SEAZASKA Service Request K14 10529

Received: 9/26/14 1130 Opened: 9/26/14 By: ML Unloaded: 9/26/14 By: BK/HSD

- 1. Samples were received via? Mail Fed Ex UPS DHL PDX Courier Hand Delivered Mc DEZIVER Y
- 2. Samples were received in: (circle) Cooler Box Envelope Other NA
- 3. Were custody seals on coolers? NA Y N If yes, how many and where? 1, front 1, back
If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
2.7	2.9	3.9	4.1	0.2	347	<u>NA</u>			<input checked="" type="checkbox"/>
6.7	0.6	3.5	3.4	-1	328				
-1.0	-1.1	0.3	0.2	-1	298				
2.8	2.7	1.7	1.6	-1	345				

- 4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves CHEDBOARD
- 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- 6. Did all bottles arrive in good condition (unbroken)? Indicate in the table below. NA Y N
- 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- 8. Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y N
- 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- 10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below. NA Y N
- 11. Were VOA vials received without headspace? Indicate in the table below. NA Y N
- 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:
<u>A</u>		

Sample ID	Bottle Count	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time
<u>A0C14092210A178</u>	<u>1</u>			<u>X</u>							

Notes, Discrepancies, & Resolutions: U6C140925SLAPH-1 is already on one of the chains (logged with the NWTPH-DX job)



Diesel and Residual Range Organics

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529

**Cover Page - Organic Analysis Data Package
 Diesel and Residual Range Organics**

Sample Name	Lab Code	Date Collected	Date Received
AOC1409224131MW04	K1410529-027	09/22/2014	09/26/2014
AOC1409224131MW05	K1410529-028	09/22/2014	09/26/2014
AOC1409224131MW02	K1410529-029	09/22/2014	09/26/2014
AOC1409224131MW03	K1410529-030	09/22/2014	09/26/2014
AOC140925AOC108B05	K1410529-037	09/23/2014	09/26/2014
AOC140925JPMW02	K1410529-038	09/23/2014	09/26/2014

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/22/2014
Date Received: 09/26/2014

Diesel and Residual Range Organics

Sample Name: AOC1409224131MW04
Lab Code: K1410529-027
Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	15	J	99	20	11	1	09/29/14	10/13/14	KWG1413200	
Residual Range Organics (RRO)	30	J	99	50	19	1	09/29/14	10/13/14	KWG1413200	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	111	50-150	10/13/14	Acceptable
n-Triacontane	113	50-150	10/13/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/22/2014
Date Received: 09/26/2014

Diesel and Residual Range Organics

Sample Name: AOC1409224131MW05
Lab Code: K1410529-028
Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	15	J	97	20	11	1	09/29/14	10/13/14	KWG1413200	
Residual Range Organics (RRO)	29	J	97	50	19	1	09/29/14	10/13/14	KWG1413200	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	117	50-150	10/13/14	Acceptable
n-Triacontane	119	50-150	10/13/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/22/2014
Date Received: 09/26/2014

Diesel and Residual Range Organics

Sample Name: AOC1409224131MW02
Lab Code: K1410529-029
Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	1400	Y	95	20	11	1	09/29/14	10/13/14	KWG1413200	
Residual Range Organics (RRO)	600	L	95	50	19	1	09/29/14	10/13/14	KWG1413200	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	113	50-150	10/13/14	Acceptable
n-Triacontane	114	50-150	10/13/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/22/2014
Date Received: 09/26/2014

Diesel and Residual Range Organics

Sample Name: AOC1409224131MW03
Lab Code: K1410529-030
Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	8100	Y	97	20	11	1	09/29/14	10/09/14	KWG1413200	
Residual Range Organics (RRO)	1600	L	97	50	19	1	09/29/14	10/09/14	KWG1413200	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	100	50-150	10/09/14	Acceptable
n-Triacontane	101	50-150	10/09/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/23/2014
Date Received: 09/26/2014

Diesel and Residual Range Organics

Sample Name: AOC140925AOC108B05
Lab Code: K1410529-037
Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	1700	Y	99	20	11	1	09/29/14	10/13/14	KWG1413200	
Residual Range Organics (RRO)	250	L	99	50	19	1	09/29/14	10/13/14	KWG1413200	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	103	50-150	10/13/14	Acceptable
n-Triacontane	107	50-150	10/13/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/23/2014
Date Received: 09/26/2014

Diesel and Residual Range Organics

Sample Name: AOC140925JPMW02
Lab Code: K1410529-038
Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	38	J	95	20	11	1	09/29/14	10/13/14	KWG1413200	
Residual Range Organics (RRO)	58	J	95	50	19	1	09/29/14	10/13/14	KWG1413200	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	113	50-150	10/13/14	Acceptable
n-Triacontane	116	50-150	10/13/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: NA
Date Received: NA

Diesel and Residual Range Organics

Sample Name: Method Blank **Units:** ug/L
Lab Code: KWG1413200-6 **Basis:** NA
Extraction Method: EPA 3510C **Level:** Low
Analysis Method: NWTPH-Dx

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	39	J	95	20	11	1	09/29/14	10/13/14	KWG1413200	
Residual Range Organics (RRO)	43	J	95	50	19	1	09/29/14	10/13/14	KWG1413200	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	105	50-150	10/13/14	Acceptable
n-Triacontane	107	50-150	10/13/14	Acceptable

Comments: _____

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529

**Surrogate Recovery Summary
 Diesel and Residual Range Organics**

Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Units: Percent
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>
AOC1409224131MW04	K1410529-027	111	113
AOC1409224131MW05	K1410529-028	117	119
AOC1409224131MW02	K1410529-029	113	114
AOC1409224131MW03	K1410529-030	100	101
AOC140925AOC108B05	K1410529-037	103	107
AOC140925JPMW02	K1410529-038	113	116
Method Blank	KWG1413200-6	105	107
Lab Control Sample	KWG1413200-4	104	104
Duplicate Lab Control Sample	KWG1413200-5	106	107

Surrogate Recovery Control Limits (%)

Sur1 = o-Terphenyl	50-150
Sur2 = n-Triacontane	50-150

Results flagged with an asterisk (*) indicate values outside control criteria.
 Results flagged with a pound (#) indicate the control criteria is not applicable.

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 09/29/2014
Date Analyzed: 10/08/2014

**Lab Control Spike/Duplicate Lab Control Spike Summary
 Diesel and Residual Range Organics**

Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1413200

Analyte Name	Lab Control Sample KWG1413200-4 Lab Control Spike			Duplicate Lab Control Sample KWG1413200-5 Duplicate Lab Control Spike			%Rec Limits	RPD	RPD Limit
	Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
Diesel Range Organics (DRO)	1810	1600	113	1670	1600	104	46-140	8	30
Residual Range Organics (RRO)	1160	800	145	1080	800	135	45-159	7	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 09/29/2014
Date Analyzed: 10/13/2014
Time Analyzed: 13:48

Method Blank Summary
Diesel and Residual Range Organics

Sample Name: Method Blank
Lab Code: KWG1413200-6
Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Instrument ID: GC21
File ID: J:\GC21\DATA\101314B\1013F031.D
Level: Low
Extraction Lot: KWG1413200

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1413200-4	J:\GC21\DATA\100814F\1008F048.D	10/08/14	22:03
Duplicate Lab Control Sample	KWG1413200-5	J:\GC21\DATA\100814F\1008F050.D	10/08/14	22:26
AOC1409224131MW03	K1410529-030	J:\GC21\DATA\100814F\1008F086.D	10/09/14	05:05
AOC1409224131MW04	K1410529-027	J:\GC21\DATA\101314B\1013F033.D	10/13/14	14:10
AOC1409224131MW05	K1410529-028	J:\GC21\DATA\101314B\1013F035.D	10/13/14	14:33
AOC1409224131MW02	K1410529-029	J:\GC21\DATA\101314B\1013F037.D	10/13/14	14:55
AOC140925JPMW02	K1410529-038	J:\GC21\DATA\101314B\1013F039.D	10/13/14	15:17
AOC140925AOC108B05	K1410529-037	J:\GC21\DATA\101314B\1013F041.D	10/13/14	15:39

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Calibration Date: 10/01/2014

Initial Calibration Summary
Diesel and Residual Range Organics

Calibration ID: CAL13586
Instrument ID: GC21

Column: ZB-1

Level ID	File ID	Level ID	File ID
A	J:\GC21\DATA\M00114F\1001F014.D	K	J:\GC21\DATA\M00114F\1001F040.D
B	J:\GC21\DATA\M00114F\1001F016.D	L	J:\GC21\DATA\M00114F\1001F042.D
C	J:\GC21\DATA\M00114F\1001F018.D	M	J:\GC21\DATA\M00114F\1001F044.D
D	J:\GC21\DATA\M00114F\1001F020.D	N	J:\GC21\DATA\M00114F\1001F054.D
E	J:\GC21\DATA\M00114F\1001F022.D	O	J:\GC21\DATA\M00114F\1001F056.D
F	J:\GC21\DATA\M00114F\1001F030.D	P	J:\GC21\DATA\M00114F\1001F058.D
G	J:\GC21\DATA\M00114F\1001F032.D	Q	J:\GC21\DATA\M00114F\1001F060.D
H	J:\GC21\DATA\M00114F\1001F034.D	R	J:\GC21\DATA\M00114F\1001F062.D
I	J:\GC21\DATA\M00114F\1001F036.D		
J	J:\GC21\DATA\M00114F\1001F038.D		

Analyte Name	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	
Diesel Range Organics (DRO)	F	20	1110	G	50	1070	H	200	1060	I	500	1220	J	2000	1220	
	K	5000	1260	L	20000	1240	M	50000	1180							
	Residual Range Organics (RRO)															
	P	500	632	Q	2000	722	R	5000	665	N	50	651	O	200	661	
o-Terphenyl	F	1.0	1690	G	2.5	1530	H	10	1550	I	25	1730	J	100	1780	
	K	250	1710													
n-Triacontane	F	1.0	1510	G	2.5	1350	H	10	1360	I	25	1490	J	100	1590	
	K	250	1500													

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Calibration Date: 10/01/2014

**Initial Calibration Summary
 Diesel and Residual Range Organics**

Calibration ID: CAL13586
Instrument ID: GC21

Column: ZB-1

Analyte Name	Compound Type	Calibration Evaluation				
		Fit Type	Eval.	Eval. Result	Q	Control Criteria
Diesel Range Organics (DRO)	MS	AverageRF	% RSD	6.8		≤ 20
Residual Range Organics (RRO)	MS	AverageRF	% RSD	5.0		≤ 20
o-Terphenyl	SURR	AverageRF	% RSD	6.2		≤ 20
n-Triacontane	SURR	AverageRF	% RSD	6.4		≤ 20

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Calibration Date: 10/01/2014
Date Analyzed: 10/01/2014 -
 10/02/2014

**Second Source Calibration Verification
 Diesel and Residual Range Organics**

Calibration Type: External Standard
Analysis Method: NWTPH-Dx

Calibration ID: CAL13586
Units: ppm

File ID: J:\GC21\DATA\100114F\1001F026.D
 J:\GC21\DATA\100114F\1001F048.D
 J:\GC21\DATA\100214F\1002F006.D

Column ID: ZB-1

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Diesel Range Organics (DRO)	1000	980	1170	1150	-2	NA	± 15 %	AverageRF
Residual Range Organics (RRO)	1000	1000	666	677	2	NA	± 15 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Calibration Date: 10/09/2014

Initial Calibration Summary
Diesel and Residual Range Organics

Calibration ID: CAL13602
Instrument ID: GC21

Column: ZB-1

Level ID	File ID
A	J:\GC21\DATA\100914B\1009F027.D
B	J:\GC21\DATA\100914B\1009F029.D
C	J:\GC21\DATA\100914B\1009F031.D
D	J:\GC21\DATA\100914B\1009F033.D
E	J:\GC21\DATA\100914B\1009F035.D
F	J:\GC21\DATA\100914B\1009F041.D
G	J:\GC21\DATA\100914B\1009F043.D
H	J:\GC21\DATA\100914B\1009F045.D
I	J:\GC21\DATA\100914B\1009F047.D
J	J:\GC21\DATA\100914B\1009F049.D

Level ID	File ID
K	J:\GC21\DATA\100914B\1009F051.D
L	J:\GC21\DATA\100914B\1009F053.D
M	J:\GC21\DATA\100914B\1009F055.D
N	J:\GC21\DATA\101014B\1010FX23.D
O	J:\GC21\DATA\101014B\1010FX24.D
P	J:\GC21\DATA\101014B\1010FX25.D
Q	J:\GC21\DATA\101014B\1010F023.D
R	J:\GC21\DATA\101014B\1010F025.D

Analyte Name	Level			Level			Level			Level			Level		
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF
Diesel Range Organics (DRO)	F	20	1470	G	50	1410	H	200	1310	I	500	1340	J	2000	1290
	K	5000	1310	L	20000	1210	M	50000	1240						
	Residual Range Organics (RRO)														
	P	500	622	Q	2000	586	R	5000	616	N	50	666	O	200	625
o-Terphenyl	F	1.0	1760	G	2.5	1770	H	10	1740	I	25	1770	J	100	1750
	K	250	1720												
	n-Triacontane														
F	1.0	1500	G	2.5	1510	H	10	1490	I	25	1520	J	100	1500	
K	250	1490													

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Calibration Date: 10/09/2014

Initial Calibration Summary
Diesel and Residual Range Organics

Calibration ID: CAL13602
Instrument ID: GC21

Column: ZB-1

Analyte Name	Compound Type	Calibration Evaluation				
		Fit Type	Eval.	Eval. Result	Q	Control Criteria
Diesel Range Organics (DRO)	MS	AverageRF	% RSD	6.5		≤ 20
Residual Range Organics (RRO)	MS	AverageRF	% RSD	4.6		≤ 20
o-Terphenyl	SURR	AverageRF	% RSD	1.1		≤ 20
n-Triacontane	SURR	AverageRF	% RSD	0.6		≤ 20

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Calibration Date: 10/09/2014
Date Analyzed: 10/09/2014 -
 10/10/2014

Second Source Calibration Verification
Diesel and Residual Range Organics

Calibration Type: External Standard
Analysis Method: NWTPH-Dx

Calibration ID: CAL13602
Units: ppm

File ID: J:\GC21\DATA\100914B\1009F039.D
 J:\GC21\DATA\100914B\1009F059.D
 J:\GC21\DATA\101014B\1010F029.D

Column ID: ZB-1

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Diesel Range Organics (DRO)	1000	950	1320	1260	-5	NA	± 15 %	AverageRF
Residual Range Organics (RRO)	1000	940	623	588	-6	NA	± 15 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Date Analyzed: 10/08/2014

Continuing Calibration Verification Summary
Diesel and Residual Range Organics

Calibration Type: External Standard
Analysis Method: NWTPH-Dx

Calibration Date: 10/01/2014
Calibration ID: CAL13586
Analysis Lot: KWG1413701
Units: ppm
Column ID: ZB-1

File ID: J:\GC21\DATA\100814F\1008F042.D
 J:\GC21\DATA\100814F\1008F044.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Diesel Range Organics (DRO)	1000	1100	1170	1320	13	NA	± 15 %	AverageRF
Residual Range Organics (RRO)	1000	1000	666	684	3	NA	± 15 %	AverageRF
o-Terphenyl	50	54	1670	1800	8	NA	± 15 %	AverageRF
n-Triacontane	50	53	1470	1560	6	NA	± 15 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Date Analyzed: 10/09/2014

Continuing Calibration Verification Summary
Diesel and Residual Range Organics

Calibration Type: External Standard
Analysis Method: NWTPH-Dx

Calibration Date: 10/01/2014
Calibration ID: CAL13586
Analysis Lot: KWG1413701
Units: ppm
Column ID: ZB-1

File ID: J:\GC21\DATA\100814F\1008F074.D
 J:\GC21\DATA\100814F\1008F076.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Diesel Range Organics (DRO)	1000	1000	1170	1220	4	NA	± 15 %	AverageRF
Residual Range Organics (RRO)	1000	980	666	653	-2	NA	± 15 %	AverageRF
o-Terphenyl	50	50	1670	1670	0	NA	± 15 %	AverageRF
n-Triacontane	50	48	1470	1400	-5	NA	± 15 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Date Analyzed: 10/09/2014

Continuing Calibration Verification Summary
Diesel and Residual Range Organics

Calibration Type: External Standard
Analysis Method: NWTPH-Dx

Calibration Date: 10/01/2014
Calibration ID: CAL13586
Analysis Lot: KWG1413701
Units: ppm
Column ID: ZB-1

File ID: J:\GC21\DATA\100814F\1008F088.D
 J:\GC21\DATA\100814F\1008F090.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Diesel Range Organics (DRO)	1000	1100	1170	1320	13	NA	± 15 %	AverageRF
Residual Range Organics (RRO)	1000	990	666	661	-1	NA	± 15 %	AverageRF
o-Terphenyl	50	54	1670	1800	8	NA	± 15 %	AverageRF
n-Triacontane	50	53	1470	1550	5	NA	± 15 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Date Analyzed: 10/13/2014

**Continuing Calibration Verification Summary
 Diesel and Residual Range Organics**

Calibration Type: External Standard
Analysis Method: NWTPH-Dx

Calibration Date: 10/09/2014
Calibration ID: CAL13602
Analysis Lot: KWG1413895
Units: ppm
Column ID: ZB-1

File ID: J:\GC21\DATA\101314B\1013F021.D
 J:\GC21\DATA\101314B\1013F023.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Diesel Range Organics (DRO)	1000	930	1320	1230	-7	NA	± 15 %	AverageRF
Residual Range Organics (RRO)	1000	980	623	613	-2	NA	± 15 %	AverageRF
o-Terphenyl	50	48	1750	1670	-5	NA	± 15 %	AverageRF
n-Triacontane	50	46	1500	1380	-8	NA	± 15 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Date Analyzed: 10/13/2014

Continuing Calibration Verification Summary
Diesel and Residual Range Organics

Calibration Type: External Standard
Analysis Method: NWTPH-Dx

Calibration Date: 10/09/2014
Calibration ID: CAL13602
Analysis Lot: KWG1413895
Units: ppm
Column ID: ZB-1

File ID: J:\GC21\DATA\101314B\1013F047.D
 J:\GC21\DATA\101314B\1013F049.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Diesel Range Organics (DRO)	1000	970	1320	1280	-3	NA	± 15 %	AverageRF
Residual Range Organics (RRO)	1000	1000	623	634	2	NA	± 15 %	AverageRF
o-Terphenyl	50	49	1750	1720	-2	NA	± 15 %	AverageRF
n-Triacontane	50	49	1500	1460	-3	NA	± 15 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529

Analysis Run Log
Diesel and Residual Range Organics

Analysis Method: NWTPH-Dx

Analysis Lot: KWG1413701
Instrument ID: GC21
Column: ZB-1

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
1008F008.D	Continuing Calibration Verification	KWG1413701-1	10/8/2014	14:41		10/8/2014	14:57
1008F010.D	Continuing Calibration Verification	KWG1413701-1	10/8/2014	15:03		10/8/2014	15:19
1008F014.D	Instrument Blank	KWG1413701-5	10/8/2014	15:47		10/8/2014	16:03
1008F016.D	ZZZZZZ	ZZZZZZ	10/8/2014	16:09		10/8/2014	16:25
1008F018.D	ZZZZZZ	ZZZZZZ	10/8/2014	16:31		10/8/2014	16:47
1008F020.D	ZZZZZZ	ZZZZZZ	10/8/2014	16:53		10/8/2014	17:09
1008F022.D	ZZZZZZ	ZZZZZZ	10/8/2014	17:15		10/8/2014	17:31
1008F024.D	ZZZZZZ	ZZZZZZ	10/8/2014	17:38		10/8/2014	17:54
1008F026.D	ZZZZZZ	ZZZZZZ	10/8/2014	18:00		10/8/2014	18:16
1008F028.D	ZZZZZZ	ZZZZZZ	10/8/2014	18:22		10/8/2014	18:38
1008F030.D	ZZZZZZ	ZZZZZZ	10/8/2014	18:44		10/8/2014	19:00
1008F032.D	ZZZZZZ	ZZZZZZ	10/8/2014	19:06		10/8/2014	19:22
1008F034.D	ZZZZZZ	ZZZZZZ	10/8/2014	19:28		10/8/2014	19:44
1008F036.D	ZZZZZZ	ZZZZZZ	10/8/2014	19:50		10/8/2014	20:06
1008F038.D	ZZZZZZ	ZZZZZZ	10/8/2014	20:13		10/8/2014	20:29
1008F040.D	ZZZZZZ	ZZZZZZ	10/8/2014	20:35		10/8/2014	20:51
1008F042.D	Continuing Calibration Verification	KWG1413701-2	10/8/2014	20:57		10/8/2014	21:13
1008F044.D	Continuing Calibration Verification	KWG1413701-2	10/8/2014	21:19		10/8/2014	21:35
1008F046.D	Instrument Blank	KWG1413701-6	10/8/2014	21:41		10/8/2014	21:57
1008F048.D	Lab Control Sample	KWG1413200-4	10/8/2014	22:03		10/8/2014	22:19
1008F050.D	Duplicate Lab Control Sample	KWG1413200-5	10/8/2014	22:26		10/8/2014	22:42
1008F054.D	ZZZZZZ	ZZZZZZ	10/8/2014	23:10		10/8/2014	23:26
1008F056.D	ZZZZZZ	ZZZZZZ	10/8/2014	23:32		10/8/2014	23:48
1008F058.D	ZZZZZZ	ZZZZZZ	10/8/2014	23:54		10/9/2014	00:10
1008F066.D	ZZZZZZ	ZZZZZZ	10/9/2014	01:23		10/9/2014	01:39
1008F068.D	ZZZZZZ	ZZZZZZ	10/9/2014	01:45		10/9/2014	02:01
1008F070.D	ZZZZZZ	ZZZZZZ	10/9/2014	02:08		10/9/2014	02:24
1008F074.D	Continuing Calibration Verification	KWG1413701-3	10/9/2014	02:52		10/9/2014	03:08
1008F076.D	Continuing Calibration Verification	KWG1413701-3	10/9/2014	03:14		10/9/2014	03:30
1008F078.D	Instrument Blank	KWG1413701-7	10/9/2014	03:36		10/9/2014	03:52
1008F082.D	ZZZZZZ	ZZZZZZ	10/9/2014	04:21		10/9/2014	04:37
1008F084.D	ZZZZZZ	ZZZZZZ	10/9/2014	04:43		10/9/2014	04:59
1008F086.D	AOC1409224131MW03	K1410529-030	10/9/2014	05:05		10/9/2014	05:21
1008F088.D	Continuing Calibration Verification	KWG1413701-4	10/9/2014	05:27		10/9/2014	05:43

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529

Analysis Run Log
Diesel and Residual Range Organics

Analysis Method: NWTPH-Dx

Analysis Lot: KWG1413701
Instrument ID: GC21
Column: ZB-1

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
1008F090.D	Continuing Calibration Verification	KWG1413701-4	10/9/2014	05:49		10/9/2014	06:05
1008F092.D	Instrument Blank	KWG1413701-8	10/9/2014	06:12		10/9/2014	06:28

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529

Analysis Run Log
Diesel and Residual Range Organics

Analysis Method: NWTPH-Dx

Analysis Lot: KWG1413895
Instrument ID: GC21
Column: ZB-1

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
1013F021.D	Continuing Calibration Verification	KWG1413895-1	10/13/2014	11:55		10/13/2014	12:11
1013F023.D	Continuing Calibration Verification	KWG1413895-1	10/13/2014	12:18		10/13/2014	12:34
1013F025.D	Instrument Blank	KWG1413895-6	10/13/2014	12:40		10/13/2014	12:56
1013F027.D	ZZZZZZ	ZZZZZZ	10/13/2014	13:03		10/13/2014	13:19
1013F029.D	ZZZZZZ	ZZZZZZ	10/13/2014	13:26		10/13/2014	13:42
1013F031.D	Method Blank	KWG1413200-6	10/13/2014	13:48		10/13/2014	14:04
1013F033.D	AOC1409224131MW04	K1410529-027	10/13/2014	14:10		10/13/2014	14:26
1013F035.D	AOC1409224131MW05	K1410529-028	10/13/2014	14:33		10/13/2014	14:49
1013F037.D	AOC1409224131MW02	K1410529-029	10/13/2014	14:55		10/13/2014	15:11
1013F039.D	AOC140925JPMW02	K1410529-038	10/13/2014	15:17		10/13/2014	15:33
1013F041.D	AOC140925AOC108B05	K1410529-037	10/13/2014	15:39		10/13/2014	15:55
1013F043.D	ZZZZZZ	ZZZZZZ	10/13/2014	16:01		10/13/2014	16:17
1013F045.D	ZZZZZZ	ZZZZZZ	10/13/2014	16:24		10/13/2014	16:40
1013F047.D	Continuing Calibration Verification	KWG1413895-2	10/13/2014	16:46		10/13/2014	17:02
1013F049.D	Continuing Calibration Verification	KWG1413895-2	10/13/2014	17:08		10/13/2014	17:24
1013F051.D	Instrument Blank	KWG1413895-7	10/13/2014	17:30		10/13/2014	17:46
1013F053.D	ZZZZZZ	ZZZZZZ	10/13/2014	17:52		10/13/2014	18:08
1013F055.D	ZZZZZZ	ZZZZZZ	10/13/2014	18:14		10/13/2014	18:30
1013F057.D	ZZZZZZ	ZZZZZZ	10/13/2014	18:37		10/13/2014	18:53
1013F059.D	ZZZZZZ	ZZZZZZ	10/13/2014	18:59		10/13/2014	19:15
1013F061.D	ZZZZZZ	ZZZZZZ	10/13/2014	19:21		10/13/2014	19:37
1013F063.D	ZZZZZZ	ZZZZZZ	10/13/2014	19:44		10/13/2014	20:00
1013F065.D	ZZZZZZ	ZZZZZZ	10/13/2014	20:06		10/13/2014	20:22
1013F067.D	ZZZZZZ	ZZZZZZ	10/13/2014	20:28		10/13/2014	20:44
1013F069.D	ZZZZZZ	ZZZZZZ	10/13/2014	20:51		10/13/2014	21:07
1013F071.D	ZZZZZZ	ZZZZZZ	10/13/2014	21:13		10/13/2014	21:29
1013F073.D	ZZZZZZ	ZZZZZZ	10/13/2014	21:36		10/13/2014	21:52
1013F075.D	ZZZZZZ	ZZZZZZ	10/13/2014	21:58		10/13/2014	22:14
1013F077.D	ZZZZZZ	ZZZZZZ	10/13/2014	22:21		10/13/2014	22:37
1013F079.D	Continuing Calibration Verification	KWG1413895-3	10/13/2014	22:43		10/13/2014	22:59
1013F081.D	Continuing Calibration Verification	KWG1413895-3	10/13/2014	23:06		10/13/2014	23:22
1013F083.D	Instrument Blank	KWG1413895-8	10/13/2014	23:29		10/13/2014	23:45
1013F085.D	ZZZZZZ	ZZZZZZ	10/13/2014	23:52		10/14/2014	00:08
1013F087.D	ZZZZZZ	ZZZZZZ	10/14/2014	00:14		10/14/2014	00:30

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529

Analysis Run Log
Diesel and Residual Range Organics

Analysis Method: NWTPH-Dx

Analysis Lot: KWG1413895
Instrument ID: GC21
Column: ZB-1

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
1013F089.D	ZZZZZZ	ZZZZZZ	10/14/2014	00:37		10/14/2014	00:53
1013F091.D	ZZZZZZ	ZZZZZZ	10/14/2014	01:00		10/14/2014	01:16
1013F093.D	ZZZZZZ	ZZZZZZ	10/14/2014	01:22		10/14/2014	01:38
1013F095.D	ZZZZZZ	ZZZZZZ	10/14/2014	01:44		10/14/2014	02:00
1013F097.D	ZZZZZZ	ZZZZZZ	10/14/2014	02:06		10/14/2014	02:22
1013F099.D	ZZZZZZ	ZZZZZZ	10/14/2014	02:29		10/14/2014	02:45
1013F101.D	ZZZZZZ	ZZZZZZ	10/14/2014	02:51		10/14/2014	03:07
1013F103.D	ZZZZZZ	ZZZZZZ	10/14/2014	03:13		10/14/2014	03:29
1013F105.D	ZZZZZZ	ZZZZZZ	10/14/2014	03:36		10/14/2014	03:52
1013F107.D	ZZZZZZ	ZZZZZZ	10/14/2014	03:58		10/14/2014	04:14
1013F109.D	ZZZZZZ	ZZZZZZ	10/14/2014	04:20		10/14/2014	04:36
1013F111.D	Continuing Calibration Verification	KWG1413895-4	10/14/2014	04:42		10/14/2014	04:58
1013F113.D	Continuing Calibration Verification	KWG1413895-4	10/14/2014	05:05		10/14/2014	05:21
1013F115.D	Instrument Blank	KWG1413895-9	10/14/2014	05:27		10/14/2014	05:43
1013F117.D	ZZZZZZ	ZZZZZZ	10/14/2014	05:49		10/14/2014	06:05
1013F119.D	ZZZZZZ	ZZZZZZ	10/14/2014	06:12		10/14/2014	06:28
1013F121.D	ZZZZZZ	ZZZZZZ	10/14/2014	06:34		10/14/2014	06:50
1013F123.D	ZZZZZZ	ZZZZZZ	10/14/2014	06:56		10/14/2014	07:12
1013F125.D	ZZZZZZ	ZZZZZZ	10/14/2014	07:19		10/14/2014	07:35
1013F127.D	ZZZZZZ	ZZZZZZ	10/14/2014	07:41		10/14/2014	07:57
1013F129.D	ZZZZZZ	ZZZZZZ	10/14/2014	08:03		10/14/2014	08:19
1013F131.D	ZZZZZZ	ZZZZZZ	10/14/2014	08:26		10/14/2014	08:42
1013F133.D	ZZZZZZ	ZZZZZZ	10/14/2014	08:48		10/14/2014	09:04
1013F135.D	ZZZZZZ	ZZZZZZ	10/14/2014	09:10		10/14/2014	09:26
1013F137.D	ZZZZZZ	ZZZZZZ	10/14/2014	09:33		10/14/2014	09:49
1013F139.D	ZZZZZZ	ZZZZZZ	10/14/2014	09:55		10/14/2014	10:11
1013F141.D	ZZZZZZ	ZZZZZZ	10/14/2014	10:17		10/14/2014	10:33
1013F143.D	Continuing Calibration Verification	KWG1413895-5	10/14/2014	10:40		10/14/2014	10:56
1013F145.D	Continuing Calibration Verification	KWG1413895-5	10/14/2014	11:02		10/14/2014	11:18
1013F147.D	Instrument Blank	KWG1413895-10	10/14/2014	11:24		10/14/2014	11:40

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 09/29/2014

Extraction Prep Log
Diesel and Residual Range Organics

Extraction Method: EPA 3510C
Analysis Method: NWTPH-Dx

Extraction Lot: KWG1413200
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
AOC1409224131MW04	K1410529-027	09/22/14	09/26/14	1020ml	2ml	NA	
AOC1409224131MW05	K1410529-028	09/22/14	09/26/14	1040ml	2ml	NA	
AOC1409224131MW02	K1410529-029	09/22/14	09/26/14	1060ml	2ml	NA	
AOC1409224131MW03	K1410529-030	09/22/14	09/26/14	1040ml	2ml	NA	
AOC140925AOC108B05	K1410529-037	09/23/14	09/26/14	1020ml	2ml	NA	
AOC140925JPMW02	K1410529-038	09/23/14	09/26/14	1060ml	2ml	NA	
Method Blank	KWG1413200-6	NA	NA	1060ml	2ml	NA	
Lab Control Sample	KWG1413200-4	NA	NA	1000ml	2ml	NA	
Duplicate Lab Control Sample	KWG1413200-5	NA	NA	1000ml	2ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis



Gasoline Range Organics

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529

**Cover Page - Organic Analysis Data Package
 Gasoline Range Organics**

Sample Name	Lab Code	Date Collected	Date Received
TB-140922	K1410529-031	09/22/2014	09/26/2014
AOC14092210A178	K1410529-032	09/22/2014	09/26/2014
AOC140922DUP2	K1410529-033	09/22/2014	09/26/2014
AOC14092295A172	K1410529-034	09/22/2014	09/26/2014
AOC14092307A177	K1410529-035	09/23/2014	09/26/2014
AOC14092395A173A	K1410529-036	09/23/2014	09/26/2014
AOC14092295A172	KWG1414020-1	09/22/2014	09/26/2014

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/22/2014
Date Received: 09/26/2014

Gasoline Range Organics

Sample Name: TB-140922
Lab Code: K1410529-031
Extraction Method: EPA 5030B
Analysis Method: NWTPH-Gx

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics-NWTPH	ND	U	250	25	13	1	10/02/14	10/02/14	KWG1414020	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	102	50-150	10/02/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/22/2014
Date Received: 09/26/2014

Gasoline Range Organics

Sample Name: AOC14092210A178
Lab Code: K1410529-032
Extraction Method: EPA 5030B
Analysis Method: NWTPH-Gx

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics-NWTPH	3500	Y	250	25	13	1	10/02/14	10/02/14	KWG1414020	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	105	50-150	10/02/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/22/2014
Date Received: 09/26/2014

Gasoline Range Organics

Sample Name: AOC140922DUP2 **Units:** ug/L
Lab Code: K1410529-033 **Basis:** NA
Extraction Method: EPA 5030B **Level:** Low
Analysis Method: NWTPH-Gx

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics-NWTPH	3700	Y	250	25	13	1	10/02/14	10/02/14	KWG1414020	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	105	50-150	10/02/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/22/2014
Date Received: 09/26/2014

Gasoline Range Organics

Sample Name: AOC14092295A172
Lab Code: K1410529-034
Extraction Method: EPA 5030B
Analysis Method: NWTPH-Gx

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics-NWTPH	ND	U	250	25	13	1	10/02/14	10/02/14	KWG1414020	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	104	50-150	10/02/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/23/2014
Date Received: 09/26/2014

Gasoline Range Organics

Sample Name: AOC14092307A177
Lab Code: K1410529-035
Extraction Method: EPA 5030B
Analysis Method: NWTPH-Gx

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics-NWTPH	ND	U	250	25	13	1	10/02/14	10/02/14	KWG1414020	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	103	50-150	10/02/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/23/2014
Date Received: 09/26/2014

Gasoline Range Organics

Sample Name: AOC14092395A173A
Lab Code: K1410529-036
Extraction Method: EPA 5030B
Analysis Method: NWTPH-Gx

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics-NWTPH	1400	Y	250	25	13	1	10/02/14	10/02/14	KWG1414020	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	107	50-150	10/02/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: NA
Date Received: NA

Gasoline Range Organics

Sample Name: Method Blank
Lab Code: KWG1414020-3
Extraction Method: EPA 5030B
Analysis Method: NWTPH-Gx

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics-NWTPH	ND	U	250	25	13	1	10/02/14	10/02/14	KWG1414020	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	100	50-150	10/02/14	Acceptable

Comments: _____

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529

**Surrogate Recovery Summary
 Gasoline Range Organics**

Extraction Method: EPA 5030B
Analysis Method: NWTPH-Gx

Units: Percent
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>
TB-140922	K1410529-031	102
AOC14092210A178	K1410529-032	105
AOC140922DUP2	K1410529-033	105
AOC14092295A172	K1410529-034	104
AOC14092307A177	K1410529-035	103
AOC14092395A173A	K1410529-036	107
AOC14092295A172DUP	KWG1414020-1	102
Method Blank	KWG1414020-3	100
Lab Control Sample	KWG1414020-2	99

Surrogate Recovery Control Limits (%)

Sur1 = 1,4-Difluorobenzene 50-150

Results flagged with an asterisk (*) indicate values outside control criteria.
 Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/02/2014
Date Analyzed: 10/02/2014

Duplicate Sample Summary
Gasoline Range Organics

Sample Name: AOC14092295A172
Lab Code: K1410529-034
Extraction Method: EPA 5030B
Analysis Method: NWTPH-Gx

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1414020

Analyte Name	LOQ	MDL	Sample Result	AOC14092295A172DUP KWG1414020-1 Duplicate Sample		Relative Percent Difference	RPD Limit
				Result	Average		
Gasoline Range Organics-NWTPH	250	13	ND	ND	ND	-	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/02/2014
Date Analyzed: 10/02/2014

Lab Control Spike Summary
Gasoline Range Organics

Extraction Method: EPA 5030B
Analysis Method: NWTPH-Gx

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1414020

Lab Control Sample
 KWG1414020-2
Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
Gasoline Range Organics-NWTPH	477	500	95	80-119

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/02/2014
Date Analyzed: 10/02/2014
Time Analyzed: 15:37

Method Blank Summary
Gasoline Range Organics

Sample Name: Method Blank
Lab Code: KWG1414020-3
Extraction Method: EPA 5030B
Analysis Method: NWTPH-Gx

Instrument ID: GC39
File ID: J:\GC39\DATA\100214\1002F016.D
Level: Low
Extraction Lot: KWG1414020

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
AOC14092395A173A	K1410529-036	J:\GC39\DATA\100214\1002F002.D	10/02/14	10:01
AOC14092295A172	K1410529-034	J:\GC39\DATA\100214\1002F008.D	10/02/14	12:25
AOC14092295A172DUP	KWG1414020-1	J:\GC39\DATA\100214\1002F009.D	10/02/14	12:49
AOC14092307A177	K1410529-035	J:\GC39\DATA\100214\1002F010.D	10/02/14	13:14
TB-140922	K1410529-031	J:\GC39\DATA\100214\1002F011.D	10/02/14	13:37
Lab Control Sample	KWG1414020-2	J:\GC39\DATA\100214\1002F015.D	10/02/14	15:13
AOC14092210A178	K1410529-032	J:\GC39\DATA\100214\1002F020.D	10/02/14	17:14
AOC140922DUP2	K1410529-033	J:\GC39\DATA\100214\1002F022.D	10/02/14	18:02

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Calibration Date: 07/08/2014

Initial Calibration Summary
Gasoline Range Organics

Calibration ID: CAL13430
Instrument ID: GC39

Column: DB-624

Level ID	File ID	Level ID	File ID
A	J:\GC39\Data\070814\0708F006.D	E	J:\GC39\Data\070814\0708F010.D
B	J:\GC39\Data\070814\0708F007.D	F	J:\GC39\Data\070814\0708F011.D
C	J:\GC39\Data\070814\0708F008.D	G	J:\GC39\Data\070814\0708F012.D
D	J:\GC39\Data\070814\0708F009.D		

Analyte Name	Level ID			Level ID			Level ID			Level ID					
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF			
Gasoline Range Organics-NWTPH	A	50	73900	B	100	78800	C	200	72100	D	500	71700	E	1000	65100
	F	5000	70600	G	10000	72300									
1,4-Difluorobenzene	A	100	1.25E+5	B	100	1.28E+5	C	100	1.25E+5	D	100	1.28E+5	E	100	1.28E+5

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Calibration Date: 07/08/2014

Initial Calibration Summary
Gasoline Range Organics

Calibration ID: CAL13430
Instrument ID: GC39

Column: DB-624

Analyte Name	Compound Type	Calibration Evaluation				Control Criteria
		Fit Type	Eval.	Eval. Result	Q	
Gasoline Range Organics-NWTPH	MS	AverageRF	% RSD	5.6		≤ 20
1,4-Difluorobenzene	SURR	AverageRF	% RSD	1.1		≤ 20

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Calibration Date: 07/08/2014
Date Analyzed: 07/08/2014

Second Source Calibration Verification
Gasoline Range Organics

Calibration Type: External Standard
Analysis Method: NWTPH-Gx

Calibration ID: CAL13430
Units: ug/L

File ID: J:\GC39\Data\070814\0708F016.D

Column ID: DB-624

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Gasoline Range Organics-NWTPH	500	480	72100	69600	-3	NA	± 15 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Date Analyzed: 10/02/2014

Continuing Calibration Verification Summary
Gasoline Range Organics

Calibration Type: External Standard
Analysis Method: NWTPH-Gx

Calibration Date: 07/08/2014
Calibration ID: CAL13430
Analysis Lot: KWG1414023
Units: ug/L
Column ID: DB-624

File ID: J:\GC39\DATA\100214\1001F055.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Gasoline Range Organics-NWTPH	500	460	72100	65800	-9	NA	± 20	AverageRF
1,4-Difluorobenzene	100	100	127000	128000	1	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Date Analyzed: 10/02/2014

Continuing Calibration Verification Summary
Gasoline Range Organics

Calibration Type: External Standard
Analysis Method: NWTPH-Gx

Calibration Date: 07/08/2014
Calibration ID: CAL13430
Analysis Lot: KWG1414023
Units: ug/L
Column ID: DB-624

File ID: J:\GC39\DATA\100214\1002F017.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Gasoline Range Organics-NWTPH	500	460	72100	67000	-7	NA	± 20	AverageRF
1,4-Difluorobenzene	100	100	127000	128000	0	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Date Analyzed: 10/03/2014

Continuing Calibration Verification Summary
Gasoline Range Organics

Calibration Type: External Standard
Analysis Method: NWTPH-Gx

Calibration Date: 07/08/2014
Calibration ID: CAL13430
Analysis Lot: KWG1414023
Units: ug/L
Column ID: DB-624

File ID: J:\GC39\DATA\100214\1002F040.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Gasoline Range Organics-NWTPH	500	470	72100	67600	-6	NA	± 20	AverageRF
1,4-Difluorobenzene	100	100	127000	128000	1	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529

Analysis Run Log
Gasoline Range Organics

Analysis Method: NWTPH-Gx

Analysis Lot: KWG1414023
Instrument ID: GC39
Column: DB-624

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
1001F055.D	Continuing Calibration Verification	KWG1414023-1	10/2/2014	06:01		10/2/2014	06:16
1001F056.D	Instrument Blank	KWG1414023-6	10/2/2014	06:25		10/2/2014	06:40
1002F002.D	AOC14092395A173A	K1410529-036	10/2/2014	10:01		10/2/2014	10:16
1002F008.D	AOC14092295A172	K1410529-034	10/2/2014	12:25		10/2/2014	12:40
1002F009.D	AOC14092295A172DUP	KWG1414020-1	10/2/2014	12:49		10/2/2014	13:04
1002F010.D	AOC14092307A177	K1410529-035	10/2/2014	13:14		10/2/2014	13:29
1002F011.D	TB-140922	K1410529-031	10/2/2014	13:37		10/2/2014	13:52
1002F012.D	ZZZZZZ	ZZZZZZ	10/2/2014	14:01		10/2/2014	14:16
1002F013.D	ZZZZZZ	ZZZZZZ	10/2/2014	14:25		10/2/2014	14:40
1002F014.D	ZZZZZZ	ZZZZZZ	10/2/2014	14:49		10/2/2014	15:04
1002F015.D	Lab Control Sample	KWG1414020-2	10/2/2014	15:13		10/2/2014	15:28
1002F016.D	Method Blank	KWG1414020-3	10/2/2014	15:37		10/2/2014	15:52
1002F017.D	Continuing Calibration Verification	KWG1414023-2	10/2/2014	16:01		10/2/2014	16:16
1002F019.D	Instrument Blank	KWG1414023-7	10/2/2014	16:49		10/2/2014	17:04
1002F020.D	AOC14092210A178	K1410529-032	10/2/2014	17:14		10/2/2014	17:29
1002F022.D	AOC140922DUP2	K1410529-033	10/2/2014	18:02		10/2/2014	18:17
1002F024.D	ZZZZZZ	ZZZZZZ	10/2/2014	18:49		10/2/2014	19:04
1002F026.D	ZZZZZZ	ZZZZZZ	10/2/2014	19:37		10/2/2014	19:52
1002F028.D	ZZZZZZ	ZZZZZZ	10/2/2014	20:26		10/2/2014	20:41
1002F029.D	ZZZZZZ	ZZZZZZ	10/2/2014	20:50		10/2/2014	21:05
1002F030.D	ZZZZZZ	ZZZZZZ	10/2/2014	21:14		10/2/2014	21:29
1002F032.D	ZZZZZZ	ZZZZZZ	10/2/2014	22:02		10/2/2014	22:17
1002F034.D	ZZZZZZ	ZZZZZZ	10/2/2014	22:49		10/2/2014	23:04
1002F036.D	ZZZZZZ	ZZZZZZ	10/2/2014	23:37		10/2/2014	23:52
1002F037.D	ZZZZZZ	ZZZZZZ	10/3/2014	00:01		10/3/2014	00:16
1002F038.D	ZZZZZZ	ZZZZZZ	10/3/2014	00:25		10/3/2014	00:40
1002F039.D	ZZZZZZ	ZZZZZZ	10/3/2014	00:49		10/3/2014	01:04
1002F040.D	Continuing Calibration Verification	KWG1414023-3	10/3/2014	01:14		10/3/2014	01:29
1002F041.D	Instrument Blank	KWG1414023-8	10/3/2014	01:37		10/3/2014	01:52
1002F042.D	ZZZZZZ	ZZZZZZ	10/3/2014	02:01		10/3/2014	02:16
1002F043.D	ZZZZZZ	ZZZZZZ	10/3/2014	02:25		10/3/2014	02:40
1002F044.D	ZZZZZZ	ZZZZZZ	10/3/2014	02:49		10/3/2014	03:04
1002F045.D	ZZZZZZ	ZZZZZZ	10/3/2014	03:13		10/3/2014	03:28
1002F047.D	ZZZZZZ	ZZZZZZ	10/3/2014	04:01		10/3/2014	04:16
1002F053.D	ZZZZZZ	ZZZZZZ	10/3/2014	06:25		10/3/2014	06:40

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529

Analysis Run Log
Gasoline Range Organics

Analysis Method: NWTPH-Gx

Analysis Lot: KWG1414023
Instrument ID: GC39
Column: DB-624

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
1002F054.D	ZZZZZZ	ZZZZZZ	10/3/2014	06:49		10/3/2014	07:04
1002F055.D	ZZZZZZ	ZZZZZZ	10/3/2014	07:12		10/3/2014	07:27
1002F056.D	Continuing Calibration Verification	KWG1414023-4	10/3/2014	07:36		10/3/2014	07:51
1002F057.D	Instrument Blank	KWG1414023-9	10/3/2014	08:00		10/3/2014	08:15
1002F058.D	ZZZZZZ	ZZZZZZ	10/3/2014	08:49		10/3/2014	09:04
1002F060.D	ZZZZZZ	ZZZZZZ	10/3/2014	09:37		10/3/2014	09:52
1002F064.D	ZZZZZZ	ZZZZZZ	10/3/2014	11:52		10/3/2014	12:07
1002F065.D	ZZZZZZ	ZZZZZZ	10/3/2014	13:45		10/3/2014	14:00
1002F066.D	ZZZZZZ	ZZZZZZ	10/3/2014	14:09		10/3/2014	14:24
1002F067.D	ZZZZZZ	ZZZZZZ	10/3/2014	14:33		10/3/2014	14:48
1002F068.D	ZZZZZZ	ZZZZZZ	10/3/2014	14:57		10/3/2014	15:12
1002F070.D	Continuing Calibration Verification	KWG1414023-5	10/3/2014	15:45		10/3/2014	16:00
1002F072.D	Instrument Blank	KWG1414023-10	10/3/2014	16:34		10/3/2014	16:49

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/02/2014

Extraction Prep Log
Gasoline Range Organics

Extraction Method: EPA 5030B
Analysis Method: NWTPH-Gx

Extraction Lot: KWG1414020
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
TB-140922	K1410529-031	09/22/14	09/26/14	10ml	10ml	NA	
AOC14092210A178	K1410529-032	09/22/14	09/26/14	10ml	10ml	NA	
AOC140922DUP2	K1410529-033	09/22/14	09/26/14	10ml	10ml	NA	
AOC14092295A172	K1410529-034	09/22/14	09/26/14	10ml	10ml	NA	
AOC14092307A177	K1410529-035	09/23/14	09/26/14	10ml	10ml	NA	
AOC14092395A173A	K1410529-036	09/23/14	09/26/14	10ml	10ml	NA	
AOC14092295A172DUP	KWG1414020-1	09/22/14	09/26/14	10ml	10ml	NA	
Method Blank	KWG1414020-3	NA	NA	10ml	10ml	NA	
Lab Control Sample	KWG1414020-2	NA	NA	10ml	10ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis



Volatile Organic Compounds

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Client: Sealaska Environmental Services, LLC
 Project: TO 01 JBLM

Service Request: K1410529

Cover Page - Organic Analysis Data Package
 Volatile Organic Compounds

Sample Name	Lab Code	Date Collected	Date Received
TB-140923	K1410529-001	09/23/2014	09/26/2014
LGC140923LC135-1	K1410529-002	09/23/2014	09/26/2014
LGC140923LC10830-1	K1410529-003	09/23/2014	09/26/2014
LGC140923LC10860-1	K1410529-004	09/23/2014	09/26/2014
LGC140923LC10885-1	K1410529-005	09/23/2014	09/26/2014
LGC140923MT4-1	K1410529-006	09/23/2014	09/26/2014
LGC140923MT3-1	K1410529-007	09/23/2014	09/26/2014
LGC140923MT2-1	K1410529-008	09/23/2014	09/26/2014
LGC140923MT1-1	K1410529-009	09/23/2014	09/26/2014
LGC140924FL1-1	K1410529-010	09/24/2014	09/26/2014
LGC140924LC218-1	K1410529-011	09/24/2014	09/26/2014
LGC140924LC224-1	K1410529-012	09/24/2014	09/26/2014
LGC140924LC01-1	K1410529-013	09/24/2014	09/26/2014
LGC140924LC116B-1	K1410529-014	09/24/2014	09/26/2014
LG140924LC111B-1	K1410529-015	09/24/2014	09/26/2014
LG14092485PA382-1	K1410529-016	09/24/2014	09/26/2014
LGC14092485PA384-1	K1410529-017	09/24/2014	09/26/2014
LGC140924LC124-1	K1410529-018	09/24/2014	09/26/2014
LGC140924DUP2-1	K1410529-019	09/24/2014	09/26/2014
LG140924LC122B-1	K1410529-020	09/24/2014	09/26/2014
LGC140924LC61B-1	K1410529-021	09/24/2014	09/26/2014
LGC140924LC226-1	K1410529-022	09/24/2014	09/26/2014
LGC140925SLAP5-1	K1410529-023	09/25/2014	09/26/2014
LG140925SLAP4-1	K1410529-024	09/25/2014	09/26/2014
LG140925SLAP3-1	K1410529-025	09/25/2014	09/26/2014
LG140925SLAP1-1	K1410529-026	09/25/2014	09/26/2014
TB-140922	K1410529-031	09/22/2014	09/26/2014
AOC14092210A178	K1410529-032	09/22/2014	09/26/2014
AOC140922DUP2	K1410529-033	09/22/2014	09/26/2014
AOC14092295A172	K1410529-034	09/22/2014	09/26/2014
AOC14092307A177	K1410529-035	09/23/2014	09/26/2014
AOC14092395A173A	K1410529-036	09/23/2014	09/26/2014
AOC14092295A172MS	KWG1413475-1	09/22/2014	09/26/2014
AOC14092295A172DMS	KWG1413475-2	09/22/2014	09/26/2014
LGC140924LC01-1MS	KWG1413516-6	09/24/2014	09/26/2014
LGC140924LC01-1DMS	KWG1413516-7	09/24/2014	09/26/2014

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/22/2014
Date Received: 09/26/2014

Volatile Organic Compounds

Sample Name: TB-140922
Lab Code: K1410529-031
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	0.20	0.13	1	10/03/14	10/03/14	KWG1413475	
Chloromethane	ND	U	0.50	0.20	0.068	1	10/03/14	10/03/14	KWG1413475	
Vinyl Chloride	ND	U	0.50	0.10	0.075	1	10/03/14	10/03/14	KWG1413475	
Bromomethane	ND	U	0.50	0.30	0.10	1	10/03/14	10/03/14	KWG1413475	*
Chloroethane	ND	U	0.50	0.20	0.16	1	10/03/14	10/03/14	KWG1413475	
Trichlorofluoromethane	ND	U	0.50	0.20	0.12	1	10/03/14	10/03/14	KWG1413475	
1,1-Dichloroethene	ND	U	0.50	0.20	0.080	1	10/03/14	10/03/14	KWG1413475	
Acetone	ND	U	20	10	3.3	1	10/03/14	10/03/14	KWG1413475	*
Carbon Disulfide	ND	U	0.50	0.20	0.069	1	10/03/14	10/03/14	KWG1413475	*
Methylene Chloride	0.32	J	2.0	0.20	0.10	1	10/03/14	10/03/14	KWG1413475	
Methyl tert-Butyl Ether	ND	U	0.50	0.30	0.11	1	10/03/14	10/03/14	KWG1413475	
trans-1,2-Dichloroethene	ND	U	0.50	0.20	0.072	1	10/03/14	10/03/14	KWG1413475	
1,1-Dichloroethane	ND	U	0.50	0.20	0.077	1	10/03/14	10/03/14	KWG1413475	
2,2-Dichloropropane	ND	U	0.50	0.20	0.060	1	10/03/14	10/03/14	KWG1413475	*
cis-1,2-Dichloroethene	ND	U	0.50	0.20	0.067	1	10/03/14	10/03/14	KWG1413475	
2-Butanone (MEK)	ND	U	20	4.0	1.9	1	10/03/14	10/03/14	KWG1413475	
Bromochloromethane	ND	U	0.50	0.20	0.16	1	10/03/14	10/03/14	KWG1413475	
Chloroform	ND	U	0.50	0.20	0.072	1	10/03/14	10/03/14	KWG1413475	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.20	0.075	1	10/03/14	10/03/14	KWG1413475	
Carbon Tetrachloride	ND	U	0.50	0.20	0.096	1	10/03/14	10/03/14	KWG1413475	
1,1-Dichloropropene	ND	U	0.50	0.20	0.089	1	10/03/14	10/03/14	KWG1413475	
Benzene	ND	U	0.50	0.10	0.062	1	10/03/14	10/03/14	KWG1413475	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.15	0.080	1	10/03/14	10/03/14	KWG1413475	
Trichloroethene (TCE)	ND	U	0.50	0.10	0.10	1	10/03/14	10/03/14	KWG1413475	
1,2-Dichloropropane	ND	U	0.50	0.20	0.095	1	10/03/14	10/03/14	KWG1413475	
Dibromomethane	ND	U	0.50	0.50	0.15	1	10/03/14	10/03/14	KWG1413475	
Bromodichloromethane	ND	U	0.50	0.30	0.091	1	10/03/14	10/03/14	KWG1413475	
cis-1,3-Dichloropropene	ND	U	0.50	0.20	0.18	1	10/03/14	10/03/14	KWG1413475	
4-Methyl-2-pentanone (MIBK)	ND	U	20	10	2.6	1	10/03/14	10/03/14	KWG1413475	
Toluene	ND	U	0.50	0.10	0.054	1	10/03/14	10/03/14	KWG1413475	
trans-1,3-Dichloropropene	ND	U	0.50	0.20	0.068	1	10/03/14	10/03/14	KWG1413475	
1,1,2-Trichloroethane	ND	U	0.50	0.40	0.14	1	10/03/14	10/03/14	KWG1413475	
Tetrachloroethene (PCE)	ND	U	0.50	0.20	0.099	1	10/03/14	10/03/14	KWG1413475	

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/22/2014
Date Received: 09/26/2014

Volatile Organic Compounds

Sample Name: TB-140922
Lab Code: K1410529-031
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
2-Hexanone	ND	U	20	10	2.7	1	10/03/14	10/03/14	KWG1413475	
1,3-Dichloropropane	ND	U	0.50	0.30	0.14	1	10/03/14	10/03/14	KWG1413475	
Dibromochloromethane	ND	U	0.50	0.50	0.14	1	10/03/14	10/03/14	KWG1413475	
1,2-Dibromoethane (EDB)	ND	U	2.0	0.20	0.10	1	10/03/14	10/03/14	KWG1413475	
Chlorobenzene	ND	U	0.50	0.20	0.11	1	10/03/14	10/03/14	KWG1413475	
Ethylbenzene	ND	U	0.50	0.10	0.050	1	10/03/14	10/03/14	KWG1413475	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.20	0.11	1	10/03/14	10/03/14	KWG1413475	
m,p-Xylenes	ND	U	0.50	0.20	0.11	1	10/03/14	10/03/14	KWG1413475	
o-Xylene	ND	U	0.50	0.20	0.074	1	10/03/14	10/03/14	KWG1413475	
Styrene	ND	U	0.50	0.20	0.089	1	10/03/14	10/03/14	KWG1413475	
Bromoform	ND	U	0.50	0.50	0.16	1	10/03/14	10/03/14	KWG1413475	
Isopropylbenzene	ND	U	2.0	0.20	0.051	1	10/03/14	10/03/14	KWG1413475	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.20	0.16	1	10/03/14	10/03/14	KWG1413475	
Bromobenzene	ND	U	2.0	0.20	0.12	1	10/03/14	10/03/14	KWG1413475	
n-Propylbenzene	ND	U	2.0	0.20	0.054	1	10/03/14	10/03/14	KWG1413475	
1,2,3-Trichloropropane	ND	U	0.50	0.50	0.20	1	10/03/14	10/03/14	KWG1413475	
2-Chlorotoluene	ND	U	2.0	0.20	0.10	1	10/03/14	10/03/14	KWG1413475	
1,3,5-Trimethylbenzene	ND	U	2.0	0.20	0.089	1	10/03/14	10/03/14	KWG1413475	
4-Chlorotoluene	ND	U	2.0	0.20	0.13	1	10/03/14	10/03/14	KWG1413475	
tert-Butylbenzene	ND	U	2.0	0.20	0.059	1	10/03/14	10/03/14	KWG1413475	
1,2,4-Trimethylbenzene	ND	U	2.0	0.20	0.069	1	10/03/14	10/03/14	KWG1413475	
sec-Butylbenzene	ND	U	2.0	0.10	0.062	1	10/03/14	10/03/14	KWG1413475	
4-Isopropyltoluene	ND	U	2.0	0.20	0.060	1	10/03/14	10/03/14	KWG1413475	
1,3-Dichlorobenzene	ND	U	0.50	0.20	0.10	1	10/03/14	10/03/14	KWG1413475	
1,4-Dichlorobenzene	ND	U	0.50	0.20	0.12	1	10/03/14	10/03/14	KWG1413475	
n-Butylbenzene	ND	U	2.0	0.10	0.054	1	10/03/14	10/03/14	KWG1413475	
1,2-Dichlorobenzene	ND	U	0.50	0.20	0.12	1	10/03/14	10/03/14	KWG1413475	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.80	0.20	1	10/03/14	10/03/14	KWG1413475	
1,2,4-Trichlorobenzene	ND	U	2.0	0.30	0.096	1	10/03/14	10/03/14	KWG1413475	
Hexachlorobutadiene	ND	U	2.0	0.30	0.11	1	10/03/14	10/03/14	KWG1413475	
Naphthalene	ND	U	2.0	0.30	0.088	1	10/03/14	10/03/14	KWG1413475	
1,2,3-Trichlorobenzene	ND	U	2.0	0.40	0.11	1	10/03/14	10/03/14	KWG1413475	

* See Case Narrative

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/22/2014
Date Received: 09/26/2014

Volatile Organic Compounds

Sample Name: TB-140922
Lab Code: K1410529-031

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	93	85-115	10/03/14	Acceptable
1,2-Dichloroethane-d4	107	70-120	10/03/14	Acceptable
Toluene-d8	96	85-120	10/03/14	Acceptable
4-Bromofluorobenzene	94	75-120	10/03/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/22/2014
Date Received: 09/26/2014

Volatile Organic Compounds

Sample Name: AOC14092210A178
Lab Code: K1410529-032
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	0.20	0.13	1	10/04/14	10/04/14	KWG1413475	
Chloromethane	ND	U	0.50	0.20	0.068	1	10/04/14	10/04/14	KWG1413475	
Vinyl Chloride	ND	U	0.50	0.10	0.075	1	10/04/14	10/04/14	KWG1413475	
Bromomethane	ND	U	0.50	0.30	0.10	1	10/04/14	10/04/14	KWG1413475	*
Chloroethane	ND	U	0.50	0.20	0.16	1	10/04/14	10/04/14	KWG1413475	
Trichlorofluoromethane	ND	U	0.50	0.20	0.12	1	10/04/14	10/04/14	KWG1413475	
1,1-Dichloroethene	ND	U	0.50	0.20	0.080	1	10/04/14	10/04/14	KWG1413475	
Acetone	7.2	J	20	10	3.3	1	10/04/14	10/04/14	KWG1413475	*
Carbon Disulfide	ND	U	0.50	0.20	0.069	1	10/04/14	10/04/14	KWG1413475	*
Methylene Chloride	ND	U	2.0	0.20	0.10	1	10/04/14	10/04/14	KWG1413475	
Methyl tert-Butyl Ether	ND	U	0.50	0.30	0.11	1	10/04/14	10/04/14	KWG1413475	
trans-1,2-Dichloroethene	ND	U	0.50	0.20	0.072	1	10/04/14	10/04/14	KWG1413475	
1,1-Dichloroethane	ND	U	0.50	0.20	0.077	1	10/04/14	10/04/14	KWG1413475	
2,2-Dichloropropane	ND	U	0.50	0.20	0.060	1	10/04/14	10/04/14	KWG1413475	*
cis-1,2-Dichloroethene	ND	U	0.50	0.20	0.067	1	10/04/14	10/04/14	KWG1413475	
2-Butanone (MEK)	2.4	J	20	4.0	1.9	1	10/04/14	10/04/14	KWG1413475	
Bromochloromethane	ND	U	0.50	0.20	0.16	1	10/04/14	10/04/14	KWG1413475	
Chloroform	ND	U	0.50	0.20	0.072	1	10/04/14	10/04/14	KWG1413475	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.20	0.075	1	10/04/14	10/04/14	KWG1413475	
Carbon Tetrachloride	ND	U	0.50	0.20	0.096	1	10/04/14	10/04/14	KWG1413475	
1,1-Dichloropropene	ND	U	0.50	0.20	0.089	1	10/04/14	10/04/14	KWG1413475	
Benzene	46		0.50	0.10	0.062	1	10/04/14	10/04/14	KWG1413475	
1,2-Dichloroethane (EDC)	0.26	J	0.50	0.15	0.080	1	10/04/14	10/04/14	KWG1413475	
Trichloroethene (TCE)	ND	U	0.50	0.10	0.10	1	10/04/14	10/04/14	KWG1413475	
1,2-Dichloropropane	ND	U	0.50	0.20	0.095	1	10/04/14	10/04/14	KWG1413475	
Dibromomethane	ND	U	0.50	0.50	0.15	1	10/04/14	10/04/14	KWG1413475	
Bromodichloromethane	ND	U	0.50	0.30	0.091	1	10/04/14	10/04/14	KWG1413475	
cis-1,3-Dichloropropene	ND	U	0.50	0.20	0.18	1	10/04/14	10/04/14	KWG1413475	
4-Methyl-2-pentanone (MIBK)	ND	U	20	10	2.6	1	10/04/14	10/04/14	KWG1413475	
Toluene	90	D	10	2.0	1.1	20	10/04/14	10/04/14	KWG1413475	
trans-1,3-Dichloropropene	ND	U	0.50	0.20	0.068	1	10/04/14	10/04/14	KWG1413475	
1,1,2-Trichloroethane	ND	U	0.50	0.40	0.14	1	10/04/14	10/04/14	KWG1413475	
Tetrachloroethene (PCE)	ND	U	0.50	0.20	0.099	1	10/04/14	10/04/14	KWG1413475	

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/22/2014
Date Received: 09/26/2014

Volatile Organic Compounds

Sample Name: AOC14092210A178
Lab Code: K1410529-032
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
2-Hexanone	ND	U	20	10	2.7	1	10/04/14	10/04/14	KWG1413475	
1,3-Dichloropropane	ND	U	0.50	0.30	0.14	1	10/04/14	10/04/14	KWG1413475	
Dibromochloromethane	ND	U	0.50	0.50	0.14	1	10/04/14	10/04/14	KWG1413475	
1,2-Dibromoethane (EDB)	ND	U	2.0	0.20	0.10	1	10/04/14	10/04/14	KWG1413475	
Chlorobenzene	ND	U	0.50	0.20	0.11	1	10/04/14	10/04/14	KWG1413475	
Ethylbenzene	61		0.50	0.10	0.050	1	10/04/14	10/04/14	KWG1413475	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.20	0.11	1	10/04/14	10/04/14	KWG1413475	
m,p-Xylenes	250	D	10	4.0	2.2	20	10/04/14	10/04/14	KWG1413475	
o-Xylene	160	D	10	4.0	1.5	20	10/04/14	10/04/14	KWG1413475	
Styrene	ND	U	0.50	0.20	0.089	1	10/04/14	10/04/14	KWG1413475	
Bromoform	ND	U	0.50	0.50	0.16	1	10/04/14	10/04/14	KWG1413475	
Isopropylbenzene	4.2		2.0	0.20	0.051	1	10/04/14	10/04/14	KWG1413475	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.20	0.16	1	10/04/14	10/04/14	KWG1413475	
Bromobenzene	ND	U	2.0	0.20	0.12	1	10/04/14	10/04/14	KWG1413475	
n-Propylbenzene	11		2.0	0.20	0.054	1	10/04/14	10/04/14	KWG1413475	
1,2,3-Trichloropropane	ND	U	0.50	0.50	0.20	1	10/04/14	10/04/14	KWG1413475	
2-Chlorotoluene	ND	U	2.0	0.20	0.10	1	10/04/14	10/04/14	KWG1413475	
1,3,5-Trimethylbenzene	80	D	40	4.0	1.8	20	10/04/14	10/04/14	KWG1413475	
4-Chlorotoluene	ND	U	2.0	0.20	0.13	1	10/04/14	10/04/14	KWG1413475	
tert-Butylbenzene	ND	U	2.0	0.20	0.059	1	10/04/14	10/04/14	KWG1413475	
1,2,4-Trimethylbenzene	150	D	40	4.0	1.4	20	10/04/14	10/04/14	KWG1413475	
sec-Butylbenzene	1.1	J	2.0	0.10	0.062	1	10/04/14	10/04/14	KWG1413475	
4-Isopropyltoluene	2.1		2.0	0.20	0.060	1	10/04/14	10/04/14	KWG1413475	
1,3-Dichlorobenzene	ND	U	0.50	0.20	0.10	1	10/04/14	10/04/14	KWG1413475	
1,4-Dichlorobenzene	ND	U	0.50	0.20	0.12	1	10/04/14	10/04/14	KWG1413475	
n-Butylbenzene	1.1	J	2.0	0.10	0.054	1	10/04/14	10/04/14	KWG1413475	
1,2-Dichlorobenzene	ND	U	0.50	0.20	0.12	1	10/04/14	10/04/14	KWG1413475	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.80	0.20	1	10/04/14	10/04/14	KWG1413475	
1,2,4-Trichlorobenzene	ND	U	2.0	0.30	0.096	1	10/04/14	10/04/14	KWG1413475	
Hexachlorobutadiene	ND	U	2.0	0.30	0.11	1	10/04/14	10/04/14	KWG1413475	
Naphthalene	44		2.0	0.30	0.088	1	10/04/14	10/04/14	KWG1413475	
1,2,3-Trichlorobenzene	ND	U	2.0	0.40	0.11	1	10/04/14	10/04/14	KWG1413475	

* See Case Narrative

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/22/2014
Date Received: 09/26/2014

Volatile Organic Compounds

Sample Name: AOC14092210A178
Lab Code: K1410529-032

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	91	85-115	10/04/14	Acceptable
1,2-Dichloroethane-d4	106	70-120	10/04/14	Acceptable
Toluene-d8	101	85-120	10/04/14	Acceptable
4-Bromofluorobenzene	94	75-120	10/04/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/22/2014
Date Received: 09/26/2014

Volatile Organic Compounds

Sample Name: AOC140922DUP2
Lab Code: K1410529-033
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	0.20	0.13	1	10/04/14	10/04/14	KWG1413488	
Chloromethane	ND	U	0.50	0.20	0.068	1	10/04/14	10/04/14	KWG1413488	
Vinyl Chloride	ND	U	0.50	0.10	0.075	1	10/04/14	10/04/14	KWG1413488	
Bromomethane	ND	U	0.50	0.30	0.10	1	10/04/14	10/04/14	KWG1413488	*
Chloroethane	ND	U	0.50	0.20	0.16	1	10/04/14	10/04/14	KWG1413488	
Trichlorofluoromethane	ND	U	0.50	0.20	0.12	1	10/04/14	10/04/14	KWG1413488	
1,1-Dichloroethene	ND	U	0.50	0.20	0.080	1	10/04/14	10/04/14	KWG1413488	
Acetone	6.2	J	20	10	3.3	1	10/04/14	10/04/14	KWG1413488	*
Carbon Disulfide	0.080	J	0.50	0.20	0.069	1	10/04/14	10/04/14	KWG1413488	*
Methylene Chloride	ND	U	2.0	0.20	0.10	1	10/04/14	10/04/14	KWG1413488	
Methyl tert-Butyl Ether	ND	U	0.50	0.30	0.11	1	10/04/14	10/04/14	KWG1413488	
trans-1,2-Dichloroethene	ND	U	0.50	0.20	0.072	1	10/04/14	10/04/14	KWG1413488	
1,1-Dichloroethane	ND	U	0.50	0.20	0.077	1	10/04/14	10/04/14	KWG1413488	
2,2-Dichloropropane	ND	U	0.50	0.20	0.060	1	10/04/14	10/04/14	KWG1413488	*
cis-1,2-Dichloroethene	ND	U	0.50	0.20	0.067	1	10/04/14	10/04/14	KWG1413488	
2-Butanone (MEK)	2.2	J	20	4.0	1.9	1	10/04/14	10/04/14	KWG1413488	
Bromochloromethane	ND	U	0.50	0.20	0.16	1	10/04/14	10/04/14	KWG1413488	
Chloroform	ND	U	0.50	0.20	0.072	1	10/04/14	10/04/14	KWG1413488	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.20	0.075	1	10/04/14	10/04/14	KWG1413488	
Carbon Tetrachloride	ND	U	0.50	0.20	0.096	1	10/04/14	10/04/14	KWG1413488	
1,1-Dichloropropene	ND	U	0.50	0.20	0.089	1	10/04/14	10/04/14	KWG1413488	
Benzene	50		0.50	0.10	0.062	1	10/04/14	10/04/14	KWG1413488	
1,2-Dichloroethane (EDC)	0.27	J	0.50	0.15	0.080	1	10/04/14	10/04/14	KWG1413488	
Trichloroethene (TCE)	0.15	J	0.50	0.10	0.10	1	10/04/14	10/04/14	KWG1413488	
1,2-Dichloropropane	ND	U	0.50	0.20	0.095	1	10/04/14	10/04/14	KWG1413488	
Dibromomethane	ND	U	0.50	0.50	0.15	1	10/04/14	10/04/14	KWG1413488	
Bromodichloromethane	ND	U	0.50	0.30	0.091	1	10/04/14	10/04/14	KWG1413488	
cis-1,3-Dichloropropene	ND	U	0.50	0.20	0.18	1	10/04/14	10/04/14	KWG1413488	
4-Methyl-2-pentanone (MIBK)	ND	U	20	10	2.6	1	10/04/14	10/04/14	KWG1413488	
Toluene	110	D	1.0	0.20	0.11	2	10/04/14	10/04/14	KWG1413475	
trans-1,3-Dichloropropene	ND	U	0.50	0.20	0.068	1	10/04/14	10/04/14	KWG1413488	
1,1,2-Trichloroethane	ND	U	0.50	0.40	0.14	1	10/04/14	10/04/14	KWG1413488	
Tetrachloroethene (PCE)	ND	U	0.50	0.20	0.099	1	10/04/14	10/04/14	KWG1413488	

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/22/2014
Date Received: 09/26/2014

Volatile Organic Compounds

Sample Name: AOC140922DUP2
Lab Code: K1410529-033
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
2-Hexanone	ND	U	20	10	2.7	1	10/04/14	10/04/14	KWG1413488	
1,3-Dichloropropane	ND	U	0.50	0.30	0.14	1	10/04/14	10/04/14	KWG1413488	
Dibromochloromethane	ND	U	0.50	0.50	0.14	1	10/04/14	10/04/14	KWG1413488	
1,2-Dibromoethane (EDB)	ND	U	2.0	0.20	0.10	1	10/04/14	10/04/14	KWG1413488	
Chlorobenzene	ND	U	0.50	0.20	0.11	1	10/04/14	10/04/14	KWG1413488	
Ethylbenzene	65		0.50	0.10	0.050	1	10/04/14	10/04/14	KWG1413488	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.20	0.11	1	10/04/14	10/04/14	KWG1413488	
m,p-Xylenes	280	D	1.0	0.40	0.22	2	10/04/14	10/04/14	KWG1413475	
o-Xylene	160	D	13	5.0	1.9	25	10/04/14	10/04/14	KWG1413475	
Styrene	ND	U	0.50	0.20	0.089	1	10/04/14	10/04/14	KWG1413488	
Bromoform	ND	U	0.50	0.50	0.16	1	10/04/14	10/04/14	KWG1413488	
Isopropylbenzene	4.3		2.0	0.20	0.051	1	10/04/14	10/04/14	KWG1413488	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.20	0.16	1	10/04/14	10/04/14	KWG1413488	
Bromobenzene	ND	U	2.0	0.20	0.12	1	10/04/14	10/04/14	KWG1413488	
n-Propylbenzene	11		2.0	0.20	0.054	1	10/04/14	10/04/14	KWG1413488	
1,2,3-Trichloropropane	ND	U	0.50	0.50	0.20	1	10/04/14	10/04/14	KWG1413488	
2-Chlorotoluene	ND	U	2.0	0.20	0.10	1	10/04/14	10/04/14	KWG1413488	
1,3,5-Trimethylbenzene	86	D	4.0	0.40	0.18	2	10/04/14	10/04/14	KWG1413475	
4-Chlorotoluene	ND	U	2.0	0.20	0.13	1	10/04/14	10/04/14	KWG1413488	
tert-Butylbenzene	ND	U	2.0	0.20	0.059	1	10/04/14	10/04/14	KWG1413488	
1,2,4-Trimethylbenzene	150	D	50	5.0	1.8	25	10/04/14	10/04/14	KWG1413475	
sec-Butylbenzene	1.2	J	2.0	0.10	0.062	1	10/04/14	10/04/14	KWG1413488	
4-Isopropyltoluene	2.1		2.0	0.20	0.060	1	10/04/14	10/04/14	KWG1413488	
1,3-Dichlorobenzene	ND	U	0.50	0.20	0.10	1	10/04/14	10/04/14	KWG1413488	
1,4-Dichlorobenzene	ND	U	0.50	0.20	0.12	1	10/04/14	10/04/14	KWG1413488	
n-Butylbenzene	1.2	J	2.0	0.10	0.054	1	10/04/14	10/04/14	KWG1413488	
1,2-Dichlorobenzene	ND	U	0.50	0.20	0.12	1	10/04/14	10/04/14	KWG1413488	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.80	0.20	1	10/04/14	10/04/14	KWG1413488	
1,2,4-Trichlorobenzene	ND	U	2.0	0.30	0.096	1	10/04/14	10/04/14	KWG1413488	
Hexachlorobutadiene	ND	U	2.0	0.30	0.11	1	10/04/14	10/04/14	KWG1413488	
Naphthalene	44		2.0	0.30	0.088	1	10/04/14	10/04/14	KWG1413488	
1,2,3-Trichlorobenzene	ND	U	2.0	0.40	0.11	1	10/04/14	10/04/14	KWG1413488	

* See Case Narrative

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/22/2014
Date Received: 09/26/2014

Volatile Organic Compounds

Sample Name: AOC140922DUP2
Lab Code: K1410529-033

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	91	85-115	10/04/14	Acceptable
1,2-Dichloroethane-d4	105	70-120	10/04/14	Acceptable
Toluene-d8	101	85-120	10/04/14	Acceptable
4-Bromofluorobenzene	96	75-120	10/04/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/22/2014
Date Received: 09/26/2014

Volatile Organic Compounds

Sample Name: AOC14092295A172
Lab Code: K1410529-034
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	0.20	0.13	1	10/03/14	10/03/14	KWG1413475	
Chloromethane	ND	U	0.50	0.20	0.068	1	10/03/14	10/03/14	KWG1413475	
Vinyl Chloride	ND	U	0.50	0.10	0.075	1	10/03/14	10/03/14	KWG1413475	
Bromomethane	ND	U	0.50	0.30	0.10	1	10/03/14	10/03/14	KWG1413475	*
Chloroethane	ND	U	0.50	0.20	0.16	1	10/03/14	10/03/14	KWG1413475	
Trichlorofluoromethane	ND	U	0.50	0.20	0.12	1	10/03/14	10/03/14	KWG1413475	
1,1-Dichloroethene	ND	U	0.50	0.20	0.080	1	10/03/14	10/03/14	KWG1413475	
Acetone	ND	U	20	10	3.3	1	10/03/14	10/03/14	KWG1413475	*
Carbon Disulfide	ND	U	0.50	0.20	0.069	1	10/03/14	10/03/14	KWG1413475	*
Methylene Chloride	0.11	J	2.0	0.20	0.10	1	10/03/14	10/03/14	KWG1413475	
Methyl tert-Butyl Ether	ND	U	0.50	0.30	0.11	1	10/03/14	10/03/14	KWG1413475	
trans-1,2-Dichloroethene	ND	U	0.50	0.20	0.072	1	10/03/14	10/03/14	KWG1413475	
1,1-Dichloroethane	ND	U	0.50	0.20	0.077	1	10/03/14	10/03/14	KWG1413475	
2,2-Dichloropropane	ND	U	0.50	0.20	0.060	1	10/03/14	10/03/14	KWG1413475	*
cis-1,2-Dichloroethene	ND	U	0.50	0.20	0.067	1	10/03/14	10/03/14	KWG1413475	
2-Butanone (MEK)	ND	U	20	4.0	1.9	1	10/03/14	10/03/14	KWG1413475	
Bromochloromethane	ND	U	0.50	0.20	0.16	1	10/03/14	10/03/14	KWG1413475	
Chloroform	ND	U	0.50	0.20	0.072	1	10/03/14	10/03/14	KWG1413475	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.20	0.075	1	10/03/14	10/03/14	KWG1413475	
Carbon Tetrachloride	ND	U	0.50	0.20	0.096	1	10/03/14	10/03/14	KWG1413475	
1,1-Dichloropropene	ND	U	0.50	0.20	0.089	1	10/03/14	10/03/14	KWG1413475	
Benzene	ND	U	0.50	0.10	0.062	1	10/03/14	10/03/14	KWG1413475	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.15	0.080	1	10/03/14	10/03/14	KWG1413475	
Trichloroethene (TCE)	ND	U	0.50	0.10	0.10	1	10/03/14	10/03/14	KWG1413475	
1,2-Dichloropropane	ND	U	0.50	0.20	0.095	1	10/03/14	10/03/14	KWG1413475	
Dibromomethane	ND	U	0.50	0.50	0.15	1	10/03/14	10/03/14	KWG1413475	
Bromodichloromethane	ND	U	0.50	0.30	0.091	1	10/03/14	10/03/14	KWG1413475	
cis-1,3-Dichloropropene	ND	U	0.50	0.20	0.18	1	10/03/14	10/03/14	KWG1413475	
4-Methyl-2-pentanone (MIBK)	ND	U	20	10	2.6	1	10/03/14	10/03/14	KWG1413475	
Toluene	0.080	J	0.50	0.10	0.054	1	10/03/14	10/03/14	KWG1413475	
trans-1,3-Dichloropropene	ND	U	0.50	0.20	0.068	1	10/03/14	10/03/14	KWG1413475	
1,1,2-Trichloroethane	ND	U	0.50	0.40	0.14	1	10/03/14	10/03/14	KWG1413475	
Tetrachloroethene (PCE)	ND	U	0.50	0.20	0.099	1	10/03/14	10/03/14	KWG1413475	

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/22/2014
Date Received: 09/26/2014

Volatile Organic Compounds

Sample Name: AOC14092295A172
Lab Code: K1410529-034
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
2-Hexanone	ND	U	20	10	2.7	1	10/03/14	10/03/14	KWG1413475	
1,3-Dichloropropane	ND	U	0.50	0.30	0.14	1	10/03/14	10/03/14	KWG1413475	
Dibromochloromethane	ND	U	0.50	0.50	0.14	1	10/03/14	10/03/14	KWG1413475	
1,2-Dibromoethane (EDB)	ND	U	2.0	0.20	0.10	1	10/03/14	10/03/14	KWG1413475	
Chlorobenzene	ND	U	0.50	0.20	0.11	1	10/03/14	10/03/14	KWG1413475	
Ethylbenzene	ND	U	0.50	0.10	0.050	1	10/03/14	10/03/14	KWG1413475	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.20	0.11	1	10/03/14	10/03/14	KWG1413475	
m,p-Xylenes	ND	U	0.50	0.20	0.11	1	10/03/14	10/03/14	KWG1413475	
o-Xylene	ND	U	0.50	0.20	0.074	1	10/03/14	10/03/14	KWG1413475	
Styrene	ND	U	0.50	0.20	0.089	1	10/03/14	10/03/14	KWG1413475	
Bromoform	ND	U	0.50	0.50	0.16	1	10/03/14	10/03/14	KWG1413475	
Isopropylbenzene	ND	U	2.0	0.20	0.051	1	10/03/14	10/03/14	KWG1413475	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.20	0.16	1	10/03/14	10/03/14	KWG1413475	
Bromobenzene	ND	U	2.0	0.20	0.12	1	10/03/14	10/03/14	KWG1413475	
n-Propylbenzene	ND	U	2.0	0.20	0.054	1	10/03/14	10/03/14	KWG1413475	
1,2,3-Trichloropropane	ND	U	0.50	0.50	0.20	1	10/03/14	10/03/14	KWG1413475	
2-Chlorotoluene	ND	U	2.0	0.20	0.10	1	10/03/14	10/03/14	KWG1413475	
1,3,5-Trimethylbenzene	ND	U	2.0	0.20	0.089	1	10/03/14	10/03/14	KWG1413475	
4-Chlorotoluene	ND	U	2.0	0.20	0.13	1	10/03/14	10/03/14	KWG1413475	
tert-Butylbenzene	ND	U	2.0	0.20	0.059	1	10/03/14	10/03/14	KWG1413475	
1,2,4-Trimethylbenzene	ND	U	2.0	0.20	0.069	1	10/03/14	10/03/14	KWG1413475	
sec-Butylbenzene	ND	U	2.0	0.10	0.062	1	10/03/14	10/03/14	KWG1413475	
4-Isopropyltoluene	ND	U	2.0	0.20	0.060	1	10/03/14	10/03/14	KWG1413475	
1,3-Dichlorobenzene	ND	U	0.50	0.20	0.10	1	10/03/14	10/03/14	KWG1413475	
1,4-Dichlorobenzene	ND	U	0.50	0.20	0.12	1	10/03/14	10/03/14	KWG1413475	
n-Butylbenzene	ND	U	2.0	0.10	0.054	1	10/03/14	10/03/14	KWG1413475	
1,2-Dichlorobenzene	ND	U	0.50	0.20	0.12	1	10/03/14	10/03/14	KWG1413475	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.80	0.20	1	10/03/14	10/03/14	KWG1413475	
1,2,4-Trichlorobenzene	ND	U	2.0	0.30	0.096	1	10/03/14	10/03/14	KWG1413475	
Hexachlorobutadiene	ND	U	2.0	0.30	0.11	1	10/03/14	10/03/14	KWG1413475	
Naphthalene	ND	U	2.0	0.30	0.088	1	10/03/14	10/03/14	KWG1413475	
1,2,3-Trichlorobenzene	ND	U	2.0	0.40	0.11	1	10/03/14	10/03/14	KWG1413475	

* See Case Narrative

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/22/2014
Date Received: 09/26/2014

Volatile Organic Compounds

Sample Name: AOC14092295A172
Lab Code: K1410529-034

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	96	85-115	10/03/14	Acceptable
1,2-Dichloroethane-d4	106	70-120	10/03/14	Acceptable
Toluene-d8	96	85-120	10/03/14	Acceptable
4-Bromofluorobenzene	95	75-120	10/03/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/23/2014
Date Received: 09/26/2014

Volatile Organic Compounds

Sample Name: AOC14092307A177
Lab Code: K1410529-035
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	0.20	0.13	1	10/04/14	10/04/14	KWG1413488	
Chloromethane	ND	U	0.50	0.20	0.068	1	10/04/14	10/04/14	KWG1413488	
Vinyl Chloride	ND	U	0.50	0.10	0.075	1	10/04/14	10/04/14	KWG1413488	
Bromomethane	ND	U	0.50	0.30	0.10	1	10/04/14	10/04/14	KWG1413488	*
Chloroethane	ND	U	0.50	0.20	0.16	1	10/04/14	10/04/14	KWG1413488	
Trichlorofluoromethane	ND	U	0.50	0.20	0.12	1	10/04/14	10/04/14	KWG1413488	
1,1-Dichloroethene	ND	U	0.50	0.20	0.080	1	10/04/14	10/04/14	KWG1413488	
Acetone	ND	U	20	10	3.3	1	10/04/14	10/04/14	KWG1413488	*
Carbon Disulfide	ND	U	0.50	0.20	0.069	1	10/04/14	10/04/14	KWG1413488	*
Methylene Chloride	ND	U	2.0	0.20	0.10	1	10/04/14	10/04/14	KWG1413488	
Methyl tert-Butyl Ether	ND	U	0.50	0.30	0.11	1	10/04/14	10/04/14	KWG1413488	
trans-1,2-Dichloroethene	ND	U	0.50	0.20	0.072	1	10/04/14	10/04/14	KWG1413488	
1,1-Dichloroethane	ND	U	0.50	0.20	0.077	1	10/04/14	10/04/14	KWG1413488	
2,2-Dichloropropane	ND	U	0.50	0.20	0.060	1	10/04/14	10/04/14	KWG1413488	*
cis-1,2-Dichloroethene	ND	U	0.50	0.20	0.067	1	10/04/14	10/04/14	KWG1413488	
2-Butanone (MEK)	ND	U	20	4.0	1.9	1	10/04/14	10/04/14	KWG1413488	
Bromochloromethane	ND	U	0.50	0.20	0.16	1	10/04/14	10/04/14	KWG1413488	
Chloroform	ND	U	0.50	0.20	0.072	1	10/04/14	10/04/14	KWG1413488	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.20	0.075	1	10/04/14	10/04/14	KWG1413488	
Carbon Tetrachloride	ND	U	0.50	0.20	0.096	1	10/04/14	10/04/14	KWG1413488	
1,1-Dichloropropene	ND	U	0.50	0.20	0.089	1	10/04/14	10/04/14	KWG1413488	
Benzene	ND	U	0.50	0.10	0.062	1	10/04/14	10/04/14	KWG1413488	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.15	0.080	1	10/04/14	10/04/14	KWG1413488	
Trichloroethene (TCE)	0.13	J	0.50	0.10	0.10	1	10/04/14	10/04/14	KWG1413488	
1,2-Dichloropropane	ND	U	0.50	0.20	0.095	1	10/04/14	10/04/14	KWG1413488	
Dibromomethane	ND	U	0.50	0.50	0.15	1	10/04/14	10/04/14	KWG1413488	
Bromodichloromethane	ND	U	0.50	0.30	0.091	1	10/04/14	10/04/14	KWG1413488	
cis-1,3-Dichloropropene	ND	U	0.50	0.20	0.18	1	10/04/14	10/04/14	KWG1413488	
4-Methyl-2-pentanone (MIBK)	ND	U	20	10	2.6	1	10/04/14	10/04/14	KWG1413488	
Toluene	ND	U	0.50	0.10	0.054	1	10/04/14	10/04/14	KWG1413488	
trans-1,3-Dichloropropene	ND	U	0.50	0.20	0.068	1	10/04/14	10/04/14	KWG1413488	
1,1,2-Trichloroethane	ND	U	0.50	0.40	0.14	1	10/04/14	10/04/14	KWG1413488	
Tetrachloroethene (PCE)	ND	U	0.50	0.20	0.099	1	10/04/14	10/04/14	KWG1413488	

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/23/2014
Date Received: 09/26/2014

Volatile Organic Compounds

Sample Name: AOC14092307A177
Lab Code: K1410529-035
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
2-Hexanone	ND	U	20	10	2.7	1	10/04/14	10/04/14	KWG1413488	
1,3-Dichloropropane	ND	U	0.50	0.30	0.14	1	10/04/14	10/04/14	KWG1413488	
Dibromochloromethane	ND	U	0.50	0.50	0.14	1	10/04/14	10/04/14	KWG1413488	
1,2-Dibromoethane (EDB)	ND	U	2.0	0.20	0.10	1	10/04/14	10/04/14	KWG1413488	
Chlorobenzene	ND	U	0.50	0.20	0.11	1	10/04/14	10/04/14	KWG1413488	
Ethylbenzene	ND	U	0.50	0.10	0.050	1	10/04/14	10/04/14	KWG1413488	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.20	0.11	1	10/04/14	10/04/14	KWG1413488	
m,p-Xylenes	ND	U	0.50	0.20	0.11	1	10/04/14	10/04/14	KWG1413488	
o-Xylene	ND	U	0.50	0.20	0.074	1	10/04/14	10/04/14	KWG1413488	
Styrene	ND	U	0.50	0.20	0.089	1	10/04/14	10/04/14	KWG1413488	
Bromoform	ND	U	0.50	0.50	0.16	1	10/04/14	10/04/14	KWG1413488	
Isopropylbenzene	ND	U	2.0	0.20	0.051	1	10/04/14	10/04/14	KWG1413488	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.20	0.16	1	10/04/14	10/04/14	KWG1413488	
Bromobenzene	ND	U	2.0	0.20	0.12	1	10/04/14	10/04/14	KWG1413488	
n-Propylbenzene	ND	U	2.0	0.20	0.054	1	10/04/14	10/04/14	KWG1413488	
1,2,3-Trichloropropane	ND	U	0.50	0.50	0.20	1	10/04/14	10/04/14	KWG1413488	
2-Chlorotoluene	ND	U	2.0	0.20	0.10	1	10/04/14	10/04/14	KWG1413488	
1,3,5-Trimethylbenzene	ND	U	2.0	0.20	0.089	1	10/04/14	10/04/14	KWG1413488	
4-Chlorotoluene	ND	U	2.0	0.20	0.13	1	10/04/14	10/04/14	KWG1413488	
tert-Butylbenzene	ND	U	2.0	0.20	0.059	1	10/04/14	10/04/14	KWG1413488	
1,2,4-Trimethylbenzene	ND	U	2.0	0.20	0.069	1	10/04/14	10/04/14	KWG1413488	
sec-Butylbenzene	ND	U	2.0	0.10	0.062	1	10/04/14	10/04/14	KWG1413488	
4-Isopropyltoluene	ND	U	2.0	0.20	0.060	1	10/04/14	10/04/14	KWG1413488	
1,3-Dichlorobenzene	ND	U	0.50	0.20	0.10	1	10/04/14	10/04/14	KWG1413488	
1,4-Dichlorobenzene	ND	U	0.50	0.20	0.12	1	10/04/14	10/04/14	KWG1413488	
n-Butylbenzene	ND	U	2.0	0.10	0.054	1	10/04/14	10/04/14	KWG1413488	
1,2-Dichlorobenzene	ND	U	0.50	0.20	0.12	1	10/04/14	10/04/14	KWG1413488	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.80	0.20	1	10/04/14	10/04/14	KWG1413488	
1,2,4-Trichlorobenzene	ND	U	2.0	0.30	0.096	1	10/04/14	10/04/14	KWG1413488	
Hexachlorobutadiene	ND	U	2.0	0.30	0.11	1	10/04/14	10/04/14	KWG1413488	
Naphthalene	ND	U	2.0	0.30	0.088	1	10/04/14	10/04/14	KWG1413488	
1,2,3-Trichlorobenzene	ND	U	2.0	0.40	0.11	1	10/04/14	10/04/14	KWG1413488	

* See Case Narrative

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/23/2014
Date Received: 09/26/2014

Volatile Organic Compounds

Sample Name: AOC14092307A177
Lab Code: K1410529-035

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	95	85-115	10/04/14	Acceptable
1,2-Dichloroethane-d4	108	70-120	10/04/14	Acceptable
Toluene-d8	97	85-120	10/04/14	Acceptable
4-Bromofluorobenzene	91	75-120	10/04/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/23/2014
Date Received: 09/26/2014

Volatile Organic Compounds

Sample Name: AOC14092395A173A
Lab Code: K1410529-036
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	0.20	0.13	1	10/04/14	10/04/14	KWG1413488	
Chloromethane	ND	U	0.50	0.20	0.068	1	10/04/14	10/04/14	KWG1413488	
Vinyl Chloride	ND	U	0.50	0.10	0.075	1	10/04/14	10/04/14	KWG1413488	
Bromomethane	ND	U	0.50	0.30	0.10	1	10/04/14	10/04/14	KWG1413488	*
Chloroethane	ND	U	0.50	0.20	0.16	1	10/04/14	10/04/14	KWG1413488	
Trichlorofluoromethane	ND	U	0.50	0.20	0.12	1	10/04/14	10/04/14	KWG1413488	
1,1-Dichloroethene	ND	U	0.50	0.20	0.080	1	10/04/14	10/04/14	KWG1413488	
Acetone	3.5	J	20	10	3.3	1	10/04/14	10/04/14	KWG1413488	*
Carbon Disulfide	ND	U	0.50	0.20	0.069	1	10/04/14	10/04/14	KWG1413488	*
Methylene Chloride	ND	U	2.0	0.20	0.10	1	10/04/14	10/04/14	KWG1413488	
Methyl tert-Butyl Ether	ND	U	0.50	0.30	0.11	1	10/04/14	10/04/14	KWG1413488	
trans-1,2-Dichloroethene	ND	U	0.50	0.20	0.072	1	10/04/14	10/04/14	KWG1413488	
1,1-Dichloroethane	ND	U	0.50	0.20	0.077	1	10/04/14	10/04/14	KWG1413488	
2,2-Dichloropropane	ND	U	0.50	0.20	0.060	1	10/04/14	10/04/14	KWG1413488	*
cis-1,2-Dichloroethene	ND	U	0.50	0.20	0.067	1	10/04/14	10/04/14	KWG1413488	
2-Butanone (MEK)	ND	U	20	4.0	1.9	1	10/04/14	10/04/14	KWG1413488	
Bromochloromethane	ND	U	0.50	0.20	0.16	1	10/04/14	10/04/14	KWG1413488	
Chloroform	ND	U	0.50	0.20	0.072	1	10/04/14	10/04/14	KWG1413488	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.20	0.075	1	10/04/14	10/04/14	KWG1413488	
Carbon Tetrachloride	ND	U	0.50	0.20	0.096	1	10/04/14	10/04/14	KWG1413488	
1,1-Dichloropropene	ND	U	0.50	0.20	0.089	1	10/04/14	10/04/14	KWG1413488	
Benzene	3.7		0.50	0.10	0.062	1	10/04/14	10/04/14	KWG1413488	
1,2-Dichloroethane (EDC)	0.16	J	0.50	0.15	0.080	1	10/04/14	10/04/14	KWG1413488	
Trichloroethene (TCE)	ND	U	0.50	0.10	0.10	1	10/04/14	10/04/14	KWG1413488	
1,2-Dichloropropane	ND	U	0.50	0.20	0.095	1	10/04/14	10/04/14	KWG1413488	
Dibromomethane	ND	U	0.50	0.50	0.15	1	10/04/14	10/04/14	KWG1413488	
Bromodichloromethane	ND	U	0.50	0.30	0.091	1	10/04/14	10/04/14	KWG1413488	
cis-1,3-Dichloropropene	ND	U	0.50	0.20	0.18	1	10/04/14	10/04/14	KWG1413488	
4-Methyl-2-pentanone (MIBK)	ND	U	20	10	2.6	1	10/04/14	10/04/14	KWG1413488	
Toluene	15		0.50	0.10	0.054	1	10/04/14	10/04/14	KWG1413488	
trans-1,3-Dichloropropene	ND	U	0.50	0.20	0.068	1	10/04/14	10/04/14	KWG1413488	
1,1,2-Trichloroethane	ND	U	0.50	0.40	0.14	1	10/04/14	10/04/14	KWG1413488	
Tetrachloroethene (PCE)	ND	U	0.50	0.20	0.099	1	10/04/14	10/04/14	KWG1413488	

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/23/2014
Date Received: 09/26/2014

Volatile Organic Compounds

Sample Name: AOC14092395A173A
Lab Code: K1410529-036
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
2-Hexanone	2.8	J	20	10	2.7	1	10/04/14	10/04/14	KWG1413488	
1,3-Dichloropropane	ND	U	0.50	0.30	0.14	1	10/04/14	10/04/14	KWG1413488	
Dibromochloromethane	ND	U	0.50	0.50	0.14	1	10/04/14	10/04/14	KWG1413488	
1,2-Dibromoethane (EDB)	ND	U	2.0	0.20	0.10	1	10/04/14	10/04/14	KWG1413488	
Chlorobenzene	ND	U	0.50	0.20	0.11	1	10/04/14	10/04/14	KWG1413488	
Ethylbenzene	16		0.50	0.10	0.050	1	10/04/14	10/04/14	KWG1413488	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.20	0.11	1	10/04/14	10/04/14	KWG1413488	
m,p-Xylenes	160		0.50	0.20	0.11	1	10/04/14	10/04/14	KWG1413488	
o-Xylene	56		0.50	0.20	0.074	1	10/04/14	10/04/14	KWG1413488	
Styrene	ND	U	0.50	0.20	0.089	1	10/04/14	10/04/14	KWG1413488	
Bromoform	ND	U	0.50	0.50	0.16	1	10/04/14	10/04/14	KWG1413488	
Isopropylbenzene	0.90	J	2.0	0.20	0.051	1	10/04/14	10/04/14	KWG1413488	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.20	0.16	1	10/04/14	10/04/14	KWG1413488	
Bromobenzene	ND	U	2.0	0.20	0.12	1	10/04/14	10/04/14	KWG1413488	
n-Propylbenzene	1.4	J	2.0	0.20	0.054	1	10/04/14	10/04/14	KWG1413488	
1,2,3-Trichloropropane	ND	U	0.50	0.50	0.20	1	10/04/14	10/04/14	KWG1413488	
2-Chlorotoluene	ND	U	2.0	0.20	0.10	1	10/04/14	10/04/14	KWG1413488	
1,3,5-Trimethylbenzene	36		2.0	0.20	0.089	1	10/04/14	10/04/14	KWG1413488	
4-Chlorotoluene	ND	U	2.0	0.20	0.13	1	10/04/14	10/04/14	KWG1413488	
tert-Butylbenzene	ND	U	2.0	0.20	0.059	1	10/04/14	10/04/14	KWG1413488	
1,2,4-Trimethylbenzene	79		2.0	0.20	0.069	1	10/04/14	10/04/14	KWG1413488	
sec-Butylbenzene	0.23	J	2.0	0.10	0.062	1	10/04/14	10/04/14	KWG1413488	
4-Isopropyltoluene	0.91	J	2.0	0.20	0.060	1	10/04/14	10/04/14	KWG1413488	
1,3-Dichlorobenzene	ND	U	0.50	0.20	0.10	1	10/04/14	10/04/14	KWG1413488	
1,4-Dichlorobenzene	ND	U	0.50	0.20	0.12	1	10/04/14	10/04/14	KWG1413488	
n-Butylbenzene	2.6		2.0	0.10	0.054	1	10/04/14	10/04/14	KWG1413488	
1,2-Dichlorobenzene	ND	U	0.50	0.20	0.12	1	10/04/14	10/04/14	KWG1413488	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.80	0.20	1	10/04/14	10/04/14	KWG1413488	
1,2,4-Trichlorobenzene	ND	U	2.0	0.30	0.096	1	10/04/14	10/04/14	KWG1413488	
Hexachlorobutadiene	ND	U	2.0	0.30	0.11	1	10/04/14	10/04/14	KWG1413488	
Naphthalene	13		2.0	0.30	0.088	1	10/04/14	10/04/14	KWG1413488	
1,2,3-Trichlorobenzene	ND	U	2.0	0.40	0.11	1	10/04/14	10/04/14	KWG1413488	

* See Case Narrative

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: 09/23/2014
Date Received: 09/26/2014

Volatile Organic Compounds

Sample Name: AOC14092395A173A
Lab Code: K1410529-036

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	91	85-115	10/04/14	Acceptable
1,2-Dichloroethane-d4	106	70-120	10/04/14	Acceptable
Toluene-d8	100	85-120	10/04/14	Acceptable
4-Bromofluorobenzene	94	75-120	10/04/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1413475-4
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	0.20	0.13	1	10/03/14	10/03/14	KWG1413475	
Chloromethane	ND	U	0.50	0.20	0.068	1	10/03/14	10/03/14	KWG1413475	
Vinyl Chloride	ND	U	0.50	0.10	0.075	1	10/03/14	10/03/14	KWG1413475	
Bromomethane	ND	U	0.50	0.30	0.10	1	10/03/14	10/03/14	KWG1413475	*
Chloroethane	ND	U	0.50	0.20	0.16	1	10/03/14	10/03/14	KWG1413475	
Trichlorofluoromethane	ND	U	0.50	0.20	0.12	1	10/03/14	10/03/14	KWG1413475	
1,1-Dichloroethene	ND	U	0.50	0.20	0.080	1	10/03/14	10/03/14	KWG1413475	
Acetone	ND	U	20	10	3.3	1	10/03/14	10/03/14	KWG1413475	*
Carbon Disulfide	ND	U	0.50	0.20	0.069	1	10/03/14	10/03/14	KWG1413475	*
Methylene Chloride	0.42	J	2.0	0.20	0.10	1	10/03/14	10/03/14	KWG1413475	
Methyl tert-Butyl Ether	ND	U	0.50	0.30	0.11	1	10/03/14	10/03/14	KWG1413475	
trans-1,2-Dichloroethene	ND	U	0.50	0.20	0.072	1	10/03/14	10/03/14	KWG1413475	
1,1-Dichloroethane	ND	U	0.50	0.20	0.077	1	10/03/14	10/03/14	KWG1413475	
2,2-Dichloropropane	ND	U	0.50	0.20	0.060	1	10/03/14	10/03/14	KWG1413475	*
cis-1,2-Dichloroethene	ND	U	0.50	0.20	0.067	1	10/03/14	10/03/14	KWG1413475	
2-Butanone (MEK)	ND	U	20	4.0	1.9	1	10/03/14	10/03/14	KWG1413475	
Bromochloromethane	ND	U	0.50	0.20	0.16	1	10/03/14	10/03/14	KWG1413475	
Chloroform	ND	U	0.50	0.20	0.072	1	10/03/14	10/03/14	KWG1413475	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.20	0.075	1	10/03/14	10/03/14	KWG1413475	
Carbon Tetrachloride	ND	U	0.50	0.20	0.096	1	10/03/14	10/03/14	KWG1413475	
1,1-Dichloropropene	ND	U	0.50	0.20	0.089	1	10/03/14	10/03/14	KWG1413475	
Benzene	ND	U	0.50	0.10	0.062	1	10/03/14	10/03/14	KWG1413475	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.15	0.080	1	10/03/14	10/03/14	KWG1413475	
Trichloroethene (TCE)	ND	U	0.50	0.10	0.10	1	10/03/14	10/03/14	KWG1413475	
1,2-Dichloropropane	ND	U	0.50	0.20	0.095	1	10/03/14	10/03/14	KWG1413475	
Dibromomethane	ND	U	0.50	0.50	0.15	1	10/03/14	10/03/14	KWG1413475	
Bromodichloromethane	ND	U	0.50	0.30	0.091	1	10/03/14	10/03/14	KWG1413475	
cis-1,3-Dichloropropene	ND	U	0.50	0.20	0.18	1	10/03/14	10/03/14	KWG1413475	
4-Methyl-2-pentanone (MIBK)	ND	U	20	10	2.6	1	10/03/14	10/03/14	KWG1413475	
Toluene	ND	U	0.50	0.10	0.054	1	10/03/14	10/03/14	KWG1413475	
trans-1,3-Dichloropropene	ND	U	0.50	0.20	0.068	1	10/03/14	10/03/14	KWG1413475	
1,1,2-Trichloroethane	ND	U	0.50	0.40	0.14	1	10/03/14	10/03/14	KWG1413475	
Tetrachloroethene (PCE)	ND	U	0.50	0.20	0.099	1	10/03/14	10/03/14	KWG1413475	

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1413475-4
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
2-Hexanone	ND	U	20	10	2.7	1	10/03/14	10/03/14	KWG1413475	
1,3-Dichloropropane	ND	U	0.50	0.30	0.14	1	10/03/14	10/03/14	KWG1413475	
Dibromochloromethane	ND	U	0.50	0.50	0.14	1	10/03/14	10/03/14	KWG1413475	
1,2-Dibromoethane (EDB)	ND	U	2.0	0.20	0.10	1	10/03/14	10/03/14	KWG1413475	
Chlorobenzene	ND	U	0.50	0.20	0.11	1	10/03/14	10/03/14	KWG1413475	
Ethylbenzene	ND	U	0.50	0.10	0.050	1	10/03/14	10/03/14	KWG1413475	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.20	0.11	1	10/03/14	10/03/14	KWG1413475	
m,p-Xylenes	ND	U	0.50	0.20	0.11	1	10/03/14	10/03/14	KWG1413475	
o-Xylene	ND	U	0.50	0.20	0.074	1	10/03/14	10/03/14	KWG1413475	
Styrene	ND	U	0.50	0.20	0.089	1	10/03/14	10/03/14	KWG1413475	
Bromoform	ND	U	0.50	0.50	0.16	1	10/03/14	10/03/14	KWG1413475	
Isopropylbenzene	ND	U	2.0	0.20	0.051	1	10/03/14	10/03/14	KWG1413475	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.20	0.16	1	10/03/14	10/03/14	KWG1413475	
Bromobenzene	ND	U	2.0	0.20	0.12	1	10/03/14	10/03/14	KWG1413475	
n-Propylbenzene	ND	U	2.0	0.20	0.054	1	10/03/14	10/03/14	KWG1413475	
1,2,3-Trichloropropane	ND	U	0.50	0.50	0.20	1	10/03/14	10/03/14	KWG1413475	
2-Chlorotoluene	ND	U	2.0	0.20	0.10	1	10/03/14	10/03/14	KWG1413475	
1,3,5-Trimethylbenzene	ND	U	2.0	0.20	0.089	1	10/03/14	10/03/14	KWG1413475	
4-Chlorotoluene	ND	U	2.0	0.20	0.13	1	10/03/14	10/03/14	KWG1413475	
tert-Butylbenzene	ND	U	2.0	0.20	0.059	1	10/03/14	10/03/14	KWG1413475	
1,2,4-Trimethylbenzene	ND	U	2.0	0.20	0.069	1	10/03/14	10/03/14	KWG1413475	
sec-Butylbenzene	ND	U	2.0	0.10	0.062	1	10/03/14	10/03/14	KWG1413475	
4-Isopropyltoluene	ND	U	2.0	0.20	0.060	1	10/03/14	10/03/14	KWG1413475	
1,3-Dichlorobenzene	ND	U	0.50	0.20	0.10	1	10/03/14	10/03/14	KWG1413475	
1,4-Dichlorobenzene	ND	U	0.50	0.20	0.12	1	10/03/14	10/03/14	KWG1413475	
n-Butylbenzene	0.060	J	2.0	0.10	0.054	1	10/03/14	10/03/14	KWG1413475	
1,2-Dichlorobenzene	ND	U	0.50	0.20	0.12	1	10/03/14	10/03/14	KWG1413475	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.80	0.20	1	10/03/14	10/03/14	KWG1413475	
1,2,4-Trichlorobenzene	0.17	J	2.0	0.30	0.096	1	10/03/14	10/03/14	KWG1413475	
Hexachlorobutadiene	0.12	J	2.0	0.30	0.11	1	10/03/14	10/03/14	KWG1413475	
Naphthalene	0.11	J	2.0	0.30	0.088	1	10/03/14	10/03/14	KWG1413475	
1,2,3-Trichlorobenzene	0.16	J	2.0	0.40	0.11	1	10/03/14	10/03/14	KWG1413475	

* See Case Narrative

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1413475-4

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	97	85-115	10/03/14	Acceptable
1,2-Dichloroethane-d4	109	70-120	10/03/14	Acceptable
Toluene-d8	99	85-120	10/03/14	Acceptable
4-Bromofluorobenzene	94	75-120	10/03/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1413488-4
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	0.20	0.13	1	10/04/14	10/04/14	KWG1413488	
Chloromethane	ND	U	0.50	0.20	0.068	1	10/04/14	10/04/14	KWG1413488	
Vinyl Chloride	ND	U	0.50	0.10	0.075	1	10/04/14	10/04/14	KWG1413488	
Bromomethane	ND	U	0.50	0.30	0.10	1	10/04/14	10/04/14	KWG1413488	*
Chloroethane	ND	U	0.50	0.20	0.16	1	10/04/14	10/04/14	KWG1413488	
Trichlorofluoromethane	ND	U	0.50	0.20	0.12	1	10/04/14	10/04/14	KWG1413488	
1,1-Dichloroethene	ND	U	0.50	0.20	0.080	1	10/04/14	10/04/14	KWG1413488	
Acetone	ND	U	20	10	3.3	1	10/04/14	10/04/14	KWG1413488	*
Carbon Disulfide	ND	U	0.50	0.20	0.069	1	10/04/14	10/04/14	KWG1413488	*
Methylene Chloride	0.25	J	2.0	0.20	0.10	1	10/04/14	10/04/14	KWG1413488	
Methyl tert-Butyl Ether	ND	U	0.50	0.30	0.11	1	10/04/14	10/04/14	KWG1413488	
trans-1,2-Dichloroethene	ND	U	0.50	0.20	0.072	1	10/04/14	10/04/14	KWG1413488	
1,1-Dichloroethane	ND	U	0.50	0.20	0.077	1	10/04/14	10/04/14	KWG1413488	
2,2-Dichloropropane	ND	U	0.50	0.20	0.060	1	10/04/14	10/04/14	KWG1413488	*
cis-1,2-Dichloroethene	ND	U	0.50	0.20	0.067	1	10/04/14	10/04/14	KWG1413488	
2-Butanone (MEK)	ND	U	20	4.0	1.9	1	10/04/14	10/04/14	KWG1413488	
Bromochloromethane	ND	U	0.50	0.20	0.16	1	10/04/14	10/04/14	KWG1413488	
Chloroform	ND	U	0.50	0.20	0.072	1	10/04/14	10/04/14	KWG1413488	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.20	0.075	1	10/04/14	10/04/14	KWG1413488	
Carbon Tetrachloride	ND	U	0.50	0.20	0.096	1	10/04/14	10/04/14	KWG1413488	
1,1-Dichloropropene	ND	U	0.50	0.20	0.089	1	10/04/14	10/04/14	KWG1413488	
Benzene	ND	U	0.50	0.10	0.062	1	10/04/14	10/04/14	KWG1413488	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.15	0.080	1	10/04/14	10/04/14	KWG1413488	
Trichloroethene (TCE)	0.11	J	0.50	0.10	0.10	1	10/04/14	10/04/14	KWG1413488	
1,2-Dichloropropane	ND	U	0.50	0.20	0.095	1	10/04/14	10/04/14	KWG1413488	
Dibromomethane	ND	U	0.50	0.50	0.15	1	10/04/14	10/04/14	KWG1413488	
Bromodichloromethane	ND	U	0.50	0.30	0.091	1	10/04/14	10/04/14	KWG1413488	
cis-1,3-Dichloropropene	ND	U	0.50	0.20	0.18	1	10/04/14	10/04/14	KWG1413488	
4-Methyl-2-pentanone (MIBK)	ND	U	20	10	2.6	1	10/04/14	10/04/14	KWG1413488	
Toluene	ND	U	0.50	0.10	0.054	1	10/04/14	10/04/14	KWG1413488	
trans-1,3-Dichloropropene	ND	U	0.50	0.20	0.068	1	10/04/14	10/04/14	KWG1413488	
1,1,2-Trichloroethane	ND	U	0.50	0.40	0.14	1	10/04/14	10/04/14	KWG1413488	
Tetrachloroethene (PCE)	ND	U	0.50	0.20	0.099	1	10/04/14	10/04/14	KWG1413488	

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1413488-4
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
2-Hexanone	ND	U	20	10	2.7	1	10/04/14	10/04/14	KWG1413488	
1,3-Dichloropropane	ND	U	0.50	0.30	0.14	1	10/04/14	10/04/14	KWG1413488	
Dibromochloromethane	ND	U	0.50	0.50	0.14	1	10/04/14	10/04/14	KWG1413488	
1,2-Dibromoethane (EDB)	ND	U	2.0	0.20	0.10	1	10/04/14	10/04/14	KWG1413488	
Chlorobenzene	ND	U	0.50	0.20	0.11	1	10/04/14	10/04/14	KWG1413488	
Ethylbenzene	ND	U	0.50	0.10	0.050	1	10/04/14	10/04/14	KWG1413488	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.20	0.11	1	10/04/14	10/04/14	KWG1413488	
m,p-Xylenes	ND	U	0.50	0.20	0.11	1	10/04/14	10/04/14	KWG1413488	
o-Xylene	ND	U	0.50	0.20	0.074	1	10/04/14	10/04/14	KWG1413488	
Styrene	ND	U	0.50	0.20	0.089	1	10/04/14	10/04/14	KWG1413488	
Bromoform	ND	U	0.50	0.50	0.16	1	10/04/14	10/04/14	KWG1413488	
Isopropylbenzene	ND	U	2.0	0.20	0.051	1	10/04/14	10/04/14	KWG1413488	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.20	0.16	1	10/04/14	10/04/14	KWG1413488	
Bromobenzene	ND	U	2.0	0.20	0.12	1	10/04/14	10/04/14	KWG1413488	
n-Propylbenzene	ND	U	2.0	0.20	0.054	1	10/04/14	10/04/14	KWG1413488	
1,2,3-Trichloropropane	ND	U	0.50	0.50	0.20	1	10/04/14	10/04/14	KWG1413488	
2-Chlorotoluene	ND	U	2.0	0.20	0.10	1	10/04/14	10/04/14	KWG1413488	
1,3,5-Trimethylbenzene	ND	U	2.0	0.20	0.089	1	10/04/14	10/04/14	KWG1413488	
4-Chlorotoluene	ND	U	2.0	0.20	0.13	1	10/04/14	10/04/14	KWG1413488	
tert-Butylbenzene	ND	U	2.0	0.20	0.059	1	10/04/14	10/04/14	KWG1413488	
1,2,4-Trimethylbenzene	ND	U	2.0	0.20	0.069	1	10/04/14	10/04/14	KWG1413488	
sec-Butylbenzene	ND	U	2.0	0.10	0.062	1	10/04/14	10/04/14	KWG1413488	
4-Isopropyltoluene	ND	U	2.0	0.20	0.060	1	10/04/14	10/04/14	KWG1413488	
1,3-Dichlorobenzene	ND	U	0.50	0.20	0.10	1	10/04/14	10/04/14	KWG1413488	
1,4-Dichlorobenzene	ND	U	0.50	0.20	0.12	1	10/04/14	10/04/14	KWG1413488	
n-Butylbenzene	ND	U	2.0	0.10	0.054	1	10/04/14	10/04/14	KWG1413488	
1,2-Dichlorobenzene	ND	U	0.50	0.20	0.12	1	10/04/14	10/04/14	KWG1413488	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.80	0.20	1	10/04/14	10/04/14	KWG1413488	
1,2,4-Trichlorobenzene	ND	U	2.0	0.30	0.096	1	10/04/14	10/04/14	KWG1413488	
Hexachlorobutadiene	0.11	J	2.0	0.30	0.11	1	10/04/14	10/04/14	KWG1413488	
Naphthalene	ND	U	2.0	0.30	0.088	1	10/04/14	10/04/14	KWG1413488	
1,2,3-Trichlorobenzene	0.13	J	2.0	0.40	0.11	1	10/04/14	10/04/14	KWG1413488	

* See Case Narrative

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1413488-4

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	94	85-115	10/04/14	Acceptable
1,2-Dichloroethane-d4	108	70-120	10/04/14	Acceptable
Toluene-d8	95	85-120	10/04/14	Acceptable
4-Bromofluorobenzene	92	75-120	10/04/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1413516-3
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	0.20	0.13	1	10/06/14	10/06/14	KWG1413516	
Chloromethane	ND	U	0.50	0.20	0.068	1	10/06/14	10/06/14	KWG1413516	
Vinyl Chloride	ND	U	0.50	0.10	0.075	1	10/06/14	10/06/14	KWG1413516	
Bromomethane	ND	U	0.50	0.30	0.10	1	10/06/14	10/06/14	KWG1413516	
Chloroethane	ND	U	0.50	0.20	0.16	1	10/06/14	10/06/14	KWG1413516	
Trichlorofluoromethane	ND	U	0.50	0.20	0.12	1	10/06/14	10/06/14	KWG1413516	
1,1-Dichloroethene	ND	U	0.50	0.20	0.080	1	10/06/14	10/06/14	KWG1413516	
Acetone	3.5	J	20	10	3.3	1	10/06/14	10/06/14	KWG1413516	*
Carbon Disulfide	ND	U	0.50	0.20	0.069	1	10/06/14	10/06/14	KWG1413516	*
Methylene Chloride	0.48	J	2.0	0.20	0.10	1	10/06/14	10/06/14	KWG1413516	
Methyl tert-Butyl Ether	ND	U	0.50	0.30	0.11	1	10/06/14	10/06/14	KWG1413516	
trans-1,2-Dichloroethene	ND	U	0.50	0.20	0.072	1	10/06/14	10/06/14	KWG1413516	
1,1-Dichloroethane	ND	U	0.50	0.20	0.077	1	10/06/14	10/06/14	KWG1413516	
2,2-Dichloropropane	ND	U	0.50	0.20	0.060	1	10/06/14	10/06/14	KWG1413516	*
cis-1,2-Dichloroethene	ND	U	0.50	0.20	0.067	1	10/06/14	10/06/14	KWG1413516	
2-Butanone (MEK)	2.1	J	20	4.0	1.9	1	10/06/14	10/06/14	KWG1413516	
Bromochloromethane	ND	U	0.50	0.20	0.16	1	10/06/14	10/06/14	KWG1413516	
Chloroform	ND	U	0.50	0.20	0.072	1	10/06/14	10/06/14	KWG1413516	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.20	0.075	1	10/06/14	10/06/14	KWG1413516	
Carbon Tetrachloride	ND	U	0.50	0.20	0.096	1	10/06/14	10/06/14	KWG1413516	
1,1-Dichloropropene	ND	U	0.50	0.20	0.089	1	10/06/14	10/06/14	KWG1413516	
Benzene	ND	U	0.50	0.10	0.062	1	10/06/14	10/06/14	KWG1413516	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.15	0.080	1	10/06/14	10/06/14	KWG1413516	
Trichloroethene (TCE)	ND	U	0.50	0.10	0.10	1	10/06/14	10/06/14	KWG1413516	
1,2-Dichloropropane	ND	U	0.50	0.20	0.095	1	10/06/14	10/06/14	KWG1413516	
Dibromomethane	ND	U	0.50	0.50	0.15	1	10/06/14	10/06/14	KWG1413516	
Bromodichloromethane	ND	U	0.50	0.30	0.091	1	10/06/14	10/06/14	KWG1413516	
cis-1,3-Dichloropropene	ND	U	0.50	0.20	0.18	1	10/06/14	10/06/14	KWG1413516	
4-Methyl-2-pentanone (MIBK)	ND	U	20	10	2.6	1	10/06/14	10/06/14	KWG1413516	
Toluene	ND	U	0.50	0.10	0.054	1	10/06/14	10/06/14	KWG1413516	
trans-1,3-Dichloropropene	ND	U	0.50	0.20	0.068	1	10/06/14	10/06/14	KWG1413516	
1,1,2-Trichloroethane	ND	U	0.50	0.40	0.14	1	10/06/14	10/06/14	KWG1413516	
Tetrachloroethene (PCE)	ND	U	0.50	0.20	0.099	1	10/06/14	10/06/14	KWG1413516	

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1413516-3
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
2-Hexanone	ND	U	20	10	2.7	1	10/06/14	10/06/14	KWG1413516	
1,3-Dichloropropane	ND	U	0.50	0.30	0.14	1	10/06/14	10/06/14	KWG1413516	
Dibromochloromethane	ND	U	0.50	0.50	0.14	1	10/06/14	10/06/14	KWG1413516	
1,2-Dibromoethane (EDB)	ND	U	2.0	0.20	0.10	1	10/06/14	10/06/14	KWG1413516	
Chlorobenzene	ND	U	0.50	0.20	0.11	1	10/06/14	10/06/14	KWG1413516	
Ethylbenzene	ND	U	0.50	0.10	0.050	1	10/06/14	10/06/14	KWG1413516	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.20	0.11	1	10/06/14	10/06/14	KWG1413516	
m,p-Xylenes	ND	U	0.50	0.20	0.11	1	10/06/14	10/06/14	KWG1413516	
o-Xylene	ND	U	0.50	0.20	0.074	1	10/06/14	10/06/14	KWG1413516	
Styrene	ND	U	0.50	0.20	0.089	1	10/06/14	10/06/14	KWG1413516	
Bromoform	ND	U	0.50	0.50	0.16	1	10/06/14	10/06/14	KWG1413516	
Isopropylbenzene	ND	U	2.0	0.20	0.051	1	10/06/14	10/06/14	KWG1413516	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.20	0.16	1	10/06/14	10/06/14	KWG1413516	
Bromobenzene	ND	U	2.0	0.20	0.12	1	10/06/14	10/06/14	KWG1413516	
n-Propylbenzene	ND	U	2.0	0.20	0.054	1	10/06/14	10/06/14	KWG1413516	
1,2,3-Trichloropropane	ND	U	0.50	0.50	0.20	1	10/06/14	10/06/14	KWG1413516	
2-Chlorotoluene	ND	U	2.0	0.20	0.10	1	10/06/14	10/06/14	KWG1413516	
1,3,5-Trimethylbenzene	ND	U	2.0	0.20	0.089	1	10/06/14	10/06/14	KWG1413516	
4-Chlorotoluene	ND	U	2.0	0.20	0.13	1	10/06/14	10/06/14	KWG1413516	
tert-Butylbenzene	ND	U	2.0	0.20	0.059	1	10/06/14	10/06/14	KWG1413516	
1,2,4-Trimethylbenzene	ND	U	2.0	0.20	0.069	1	10/06/14	10/06/14	KWG1413516	
sec-Butylbenzene	ND	U	2.0	0.10	0.062	1	10/06/14	10/06/14	KWG1413516	
4-Isopropyltoluene	ND	U	2.0	0.20	0.060	1	10/06/14	10/06/14	KWG1413516	
1,3-Dichlorobenzene	ND	U	0.50	0.20	0.10	1	10/06/14	10/06/14	KWG1413516	
1,4-Dichlorobenzene	ND	U	0.50	0.20	0.12	1	10/06/14	10/06/14	KWG1413516	
n-Butylbenzene	ND	U	2.0	0.10	0.054	1	10/06/14	10/06/14	KWG1413516	
1,2-Dichlorobenzene	ND	U	0.50	0.20	0.12	1	10/06/14	10/06/14	KWG1413516	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.80	0.20	1	10/06/14	10/06/14	KWG1413516	
1,2,4-Trichlorobenzene	ND	U	2.0	0.30	0.096	1	10/06/14	10/06/14	KWG1413516	
Hexachlorobutadiene	ND	U	2.0	0.30	0.11	1	10/06/14	10/06/14	KWG1413516	
Naphthalene	ND	U	2.0	0.30	0.088	1	10/06/14	10/06/14	KWG1413516	
1,2,3-Trichlorobenzene	ND	U	2.0	0.40	0.11	1	10/06/14	10/06/14	KWG1413516	

* See Case Narrative

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1413516-3

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	94	85-115	10/06/14	Acceptable
1,2-Dichloroethane-d4	108	70-120	10/06/14	Acceptable
Toluene-d8	96	85-120	10/06/14	Acceptable
4-Bromofluorobenzene	91	75-120	10/06/14	Acceptable

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1413535-5
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Dichlorodifluoromethane	ND	U	0.50	0.20	0.13	1	10/06/14	10/06/14	KWG1413535	
Chloromethane	ND	U	0.50	0.20	0.068	1	10/06/14	10/06/14	KWG1413535	
Vinyl Chloride	ND	U	0.50	0.10	0.075	1	10/06/14	10/06/14	KWG1413535	
Bromomethane	ND	U	0.50	0.30	0.10	1	10/06/14	10/06/14	KWG1413535	
Chloroethane	ND	U	0.50	0.20	0.16	1	10/06/14	10/06/14	KWG1413535	
Trichlorofluoromethane	ND	U	0.50	0.20	0.12	1	10/06/14	10/06/14	KWG1413535	
1,1-Dichloroethene	ND	U	0.50	0.20	0.080	1	10/06/14	10/06/14	KWG1413535	
Acetone	ND	U	20	10	3.3	1	10/06/14	10/06/14	KWG1413535	*
Carbon Disulfide	ND	U	0.50	0.20	0.069	1	10/06/14	10/06/14	KWG1413535	*
Methylene Chloride	0.22	J	2.0	0.20	0.10	1	10/06/14	10/06/14	KWG1413535	
Methyl tert-Butyl Ether	ND	U	0.50	0.30	0.11	1	10/06/14	10/06/14	KWG1413535	
trans-1,2-Dichloroethene	ND	U	0.50	0.20	0.072	1	10/06/14	10/06/14	KWG1413535	
1,1-Dichloroethane	ND	U	0.50	0.20	0.077	1	10/06/14	10/06/14	KWG1413535	
2,2-Dichloropropane	ND	U	0.50	0.20	0.060	1	10/06/14	10/06/14	KWG1413535	*
cis-1,2-Dichloroethene	ND	U	0.50	0.20	0.067	1	10/06/14	10/06/14	KWG1413535	
2-Butanone (MEK)	ND	U	20	4.0	1.9	1	10/06/14	10/06/14	KWG1413535	
Bromochloromethane	ND	U	0.50	0.20	0.16	1	10/06/14	10/06/14	KWG1413535	
Chloroform	ND	U	0.50	0.20	0.072	1	10/06/14	10/06/14	KWG1413535	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.20	0.075	1	10/06/14	10/06/14	KWG1413535	
Carbon Tetrachloride	ND	U	0.50	0.20	0.096	1	10/06/14	10/06/14	KWG1413535	
1,1-Dichloropropene	ND	U	0.50	0.20	0.089	1	10/06/14	10/06/14	KWG1413535	
Benzene	ND	U	0.50	0.10	0.062	1	10/06/14	10/06/14	KWG1413535	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.15	0.080	1	10/06/14	10/06/14	KWG1413535	
Trichloroethene (TCE)	ND	U	0.50	0.10	0.10	1	10/06/14	10/06/14	KWG1413535	
1,2-Dichloropropane	ND	U	0.50	0.20	0.095	1	10/06/14	10/06/14	KWG1413535	
Dibromomethane	ND	U	0.50	0.50	0.15	1	10/06/14	10/06/14	KWG1413535	
Bromodichloromethane	ND	U	0.50	0.30	0.091	1	10/06/14	10/06/14	KWG1413535	
cis-1,3-Dichloropropene	ND	U	0.50	0.20	0.18	1	10/06/14	10/06/14	KWG1413535	
4-Methyl-2-pentanone (MIBK)	ND	U	20	10	2.6	1	10/06/14	10/06/14	KWG1413535	
Toluene	ND	U	0.50	0.10	0.054	1	10/06/14	10/06/14	KWG1413535	
trans-1,3-Dichloropropene	ND	U	0.50	0.20	0.068	1	10/06/14	10/06/14	KWG1413535	*
1,1,2-Trichloroethane	ND	U	0.50	0.40	0.14	1	10/06/14	10/06/14	KWG1413535	
Tetrachloroethene (PCE)	ND	U	0.50	0.20	0.099	1	10/06/14	10/06/14	KWG1413535	

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1413535-5
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
2-Hexanone	ND	U	20	10	2.7	1	10/06/14	10/06/14	KWG1413535	
1,3-Dichloropropane	ND	U	0.50	0.30	0.14	1	10/06/14	10/06/14	KWG1413535	
Dibromochloromethane	ND	U	0.50	0.50	0.14	1	10/06/14	10/06/14	KWG1413535	
1,2-Dibromoethane (EDB)	ND	U	2.0	0.20	0.10	1	10/06/14	10/06/14	KWG1413535	
Chlorobenzene	ND	U	0.50	0.20	0.11	1	10/06/14	10/06/14	KWG1413535	
Ethylbenzene	ND	U	0.50	0.10	0.050	1	10/06/14	10/06/14	KWG1413535	
1,1,1,2-Tetrachloroethane	ND	U	0.50	0.20	0.11	1	10/06/14	10/06/14	KWG1413535	
m,p-Xylenes	ND	U	0.50	0.20	0.11	1	10/06/14	10/06/14	KWG1413535	
o-Xylene	ND	U	0.50	0.20	0.074	1	10/06/14	10/06/14	KWG1413535	
Styrene	ND	U	0.50	0.20	0.089	1	10/06/14	10/06/14	KWG1413535	
Bromoform	ND	U	0.50	0.50	0.16	1	10/06/14	10/06/14	KWG1413535	
Isopropylbenzene	ND	U	2.0	0.20	0.051	1	10/06/14	10/06/14	KWG1413535	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.20	0.16	1	10/06/14	10/06/14	KWG1413535	
Bromobenzene	ND	U	2.0	0.20	0.12	1	10/06/14	10/06/14	KWG1413535	
n-Propylbenzene	ND	U	2.0	0.20	0.054	1	10/06/14	10/06/14	KWG1413535	
1,2,3-Trichloropropane	ND	U	0.50	0.50	0.20	1	10/06/14	10/06/14	KWG1413535	
2-Chlorotoluene	ND	U	2.0	0.20	0.10	1	10/06/14	10/06/14	KWG1413535	
1,3,5-Trimethylbenzene	ND	U	2.0	0.20	0.089	1	10/06/14	10/06/14	KWG1413535	
4-Chlorotoluene	ND	U	2.0	0.20	0.13	1	10/06/14	10/06/14	KWG1413535	
tert-Butylbenzene	ND	U	2.0	0.20	0.059	1	10/06/14	10/06/14	KWG1413535	
1,2,4-Trimethylbenzene	ND	U	2.0	0.20	0.069	1	10/06/14	10/06/14	KWG1413535	
sec-Butylbenzene	ND	U	2.0	0.10	0.062	1	10/06/14	10/06/14	KWG1413535	
4-Isopropyltoluene	ND	U	2.0	0.20	0.060	1	10/06/14	10/06/14	KWG1413535	
1,3-Dichlorobenzene	ND	U	0.50	0.20	0.10	1	10/06/14	10/06/14	KWG1413535	
1,4-Dichlorobenzene	ND	U	0.50	0.20	0.12	1	10/06/14	10/06/14	KWG1413535	
n-Butylbenzene	ND	U	2.0	0.10	0.054	1	10/06/14	10/06/14	KWG1413535	
1,2-Dichlorobenzene	ND	U	0.50	0.20	0.12	1	10/06/14	10/06/14	KWG1413535	
1,2-Dibromo-3-chloropropane	ND	U	2.0	0.80	0.20	1	10/06/14	10/06/14	KWG1413535	
1,2,4-Trichlorobenzene	0.11	J	2.0	0.30	0.096	1	10/06/14	10/06/14	KWG1413535	
Hexachlorobutadiene	ND	U	2.0	0.30	0.11	1	10/06/14	10/06/14	KWG1413535	
Naphthalene	ND	U	2.0	0.30	0.088	1	10/06/14	10/06/14	KWG1413535	
1,2,3-Trichlorobenzene	ND	U	2.0	0.40	0.11	1	10/06/14	10/06/14	KWG1413535	

* See Case Narrative

Comments: _____

Analytical Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1413535-5

Units: ug/L
Basis: NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Dibromofluoromethane	95	85-115	10/06/14	Acceptable
1,2-Dichloroethane-d4	106	70-120	10/06/14	Acceptable
Toluene-d8	96	85-120	10/06/14	Acceptable
4-Bromofluorobenzene	93	75-120	10/06/14	Acceptable

Comments: _____

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529

**Surrogate Recovery Summary
 Volatile Organic Compounds**

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: Percent
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>	<u>Sur4</u>
TB-140923	K1410529-001	95	108	96	92
LGC140923LC135-1	K1410529-002	96	108	97	92
LGC140923LC10830-1	K1410529-003	94	107	95	93
LGC140923LC10860-1	K1410529-004	98	108	97	89
LGC140923LC10885-1	K1410529-005	94	109	96	93
LGC140923MT4-1	K1410529-006	92	112	96	92
LGC140923MT3-1	K1410529-007	94	107	97	92
LGC140923MT2-1	K1410529-008	91	109	97	90
LGC140923MT1-1	K1410529-009	93	107	97	91
LGC140924FL1-1	K1410529-010	93	109	96	93
LGC140924LC218-1	K1410529-011	94	108	99	89
LGC140924LC224-1	K1410529-012	95	110	98	91
LGC140924LC01-1	K1410529-013	95	109	98	89
LGC140924LC116B-1	K1410529-014	94	111	95	92
LG140924LC111B-1	K1410529-015	94	109	94	89
LG14092485PA382-1	K1410529-016	96	109	97	91
LGC14092485PA384-1	K1410529-017	95	112	97	91
LGC140924LC124-1	K1410529-018	93	108	96	91
LGC140924DUP2-1	K1410529-019	94	110	97	92
LG140924LC122B-1	K1410529-020	96	111	99	93
LGC140924LC61B-1	K1410529-021	96	115	99	91
LGC140924LC226-1	K1410529-022	96	110	97	93
LGC140925SLAP5-1	K1410529-023	98	112	98	90
LG140925SLAP4-1	K1410529-024	94	109	97	93
LG140925SLAP3-1	K1410529-025	97	112	97	91
LG140925SLAP1-1	K1410529-026	100	109	96	92
TB-140922	K1410529-031	93	107	96	94
AOC14092210A178	K1410529-032	91	106	101	94
AOC140922DUP2	K1410529-033	91	105	101	96
AOC14092295A172	K1410529-034	96	106	96	95
AOC14092307A177	K1410529-035	95	108	97	91
AOC14092395A173A	K1410529-036	91	106	100	94
Method Blank	KWG1413475-4	97	109	99	94
Method Blank	KWG1413488-4	94	108	95	92

Surrogate Recovery Control Limits (%)

Sur1 = Dibromofluoromethane	85-115
Sur2 = 1,2-Dichloroethane-d4	70-120
Sur3 = Toluene-d8	85-120
Sur4 = 4-Bromofluorobenzene	75-120

Results flagged with an asterisk (*) indicate values outside control criteria.
 Results flagged with a pound (#) indicate the control criteria is not applicable.

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529

**Surrogate Recovery Summary
 Volatile Organic Compounds**

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: Percent
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>	<u>Sur2</u>	<u>Sur3</u>	<u>Sur4</u>
Method Blank	KWG1413516-3	94	108	96	91
Method Blank	KWG1413535-5	95	106	96	93
AOC14092295A172MS	KWG1413475-1	100	102	99	97
AOC14092295A172DMS	KWG1413475-2	97	105	98	96
LGC140924LC01-1MS	KWG1413516-6	102	106	99	93
LGC140924LC01-1DMS	KWG1413516-7	99	104	98	97
Lab Control Sample	KWG1413475-3	98	104	99	93
Lab Control Sample	KWG1413488-3	101	103	99	95
Lab Control Sample	KWG1413516-1	97	105	98	96
Lab Control Sample	KWG1413535-3	96	104	98	97

Surrogate Recovery Control Limits (%)

Sur1 = Dibromofluoromethane	85-115
Sur2 = 1,2-Dichloroethane-d4	70-120
Sur3 = Toluene-d8	85-120
Sur4 = 4-Bromofluorobenzene	75-120

Results flagged with an asterisk (*) indicate values outside control criteria.
 Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Date Analyzed: 10/03/2014
Time Analyzed: 15:41

Internal Standard Area and RT Summary
Volatile Organic Compounds

File ID: J:\MS18\DATA\100314\1003F008.D
Instrument ID: GC-MS 18
Analysis Method: 8260C

Lab Code: KWG1413468-2
Analysis Lot: KWG1413468

	Fluorobenzene		Chlorobenzene-d5	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	286,758	6.31	120,363	9.64
Upper Limit ==>	573,516	6.81	240,726	10.14
Lower Limit ==>	143,379	5.81	60,182	9.14
ICAL Result ==>	325,249	6.32	135,589	9.64

Associated Analyses

Lab Control Sample	KWG1413475-3	285,934	6.32	123,431	9.64
AOC14092295A172MS	KWG1413475-1	285,604	6.32	119,017	9.64
AOC14092295A172DMS	KWG1413475-2	286,414	6.32	119,491	9.64
Method Blank	KWG1413475-4	264,787	6.32	114,189	9.64
TB-140922	K1410529-031	271,332	6.32	112,866	9.64
AOC14092295A172	K1410529-034	265,007	6.32	110,175	9.64
AOC14092210A178DL	K1410529-032	259,171	6.32	108,982	9.64
AOC140922DUP2DL	K1410529-033	260,569	6.32	110,043	9.64
AOC140922DUP2DL	K1410529-033	263,720	6.32	115,568	9.64
AOC14092210A178	K1410529-032	277,194	6.32	119,987	9.64

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Date Analyzed: 10/04/2014
Time Analyzed: 13:04

Internal Standard Area and RT Summary
Volatile Organic Compounds

File ID: J:\MS18\DATA\100414\1004F009.D
Instrument ID: GC-MS 18
Analysis Method: 8260C

Lab Code: KWG1413485-3
Analysis Lot: KWG1413485

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	319,571	6.32	135,914	9.64	130,722	12.05
Upper Limit ==>	639,142	6.82	271,828	10.14	261,444	12.55
Lower Limit ==>	159,786	5.82	67,957	9.14	65,361	11.55
ICAL Result ==>	325,249	6.32	135,589	9.64	130,777	12.05

Associated Analyses

Lab Control Sample	KWG1413488-3	317,598	6.32	135,732	9.64	129,418	12.05
Method Blank	KWG1413488-4	305,866	6.32	128,946	9.64	116,018	12.05
TB-140923	K1410529-001	304,946	6.32	128,567	9.64	116,317	12.05
LGC140923LC135-1	K1410529-002	298,280	6.32	125,975	9.64	115,544	12.05
LGC140923LC10830-1	K1410529-003	300,001	6.32	127,049	9.64	116,481	12.05
LGC140923LC10860-1	K1410529-004	293,888	6.32	127,608	9.64	111,381	12.05
LGC140923LC10885-1	K1410529-005	294,219	6.32	125,719	9.64	112,206	12.05
LGC140923MT4-1	K1410529-006	291,981	6.32	124,509	9.64	112,439	12.05
LGC140923MT3-1	K1410529-007	293,148	6.32	125,285	9.64	112,972	12.05
LGC140923MT2-1	K1410529-008	292,941	6.32	124,353	9.64	110,017	12.05
LGC140923MT1-1	K1410529-009	292,682	6.32	125,735	9.64	112,177	12.05
AOC14092307A177	K1410529-035	290,932	6.32	124,986	9.64	110,675	12.05
AOC14092395A173A	K1410529-036	301,981	6.32	129,628	9.64	124,845	12.05
AOC140922DUP2	K1410529-033	311,950	6.32	131,350	9.64	132,367	12.05

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Date Analyzed: 10/06/2014
Time Analyzed: 09:31

Internal Standard Area and RT Summary
Volatile Organic Compounds

File ID: J:\MS18\DATA\100614\1006F003.D
Instrument ID: GC-MS 18
Analysis Method: 8260C

Lab Code: KWG1413506-2
Analysis Lot: KWG1413506

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	307,377	6.31	129,922	9.64	123,555	12.05
Upper Limit ==>	614,754	6.81	259,844	10.14	247,110	12.55
Lower Limit ==>	153,689	5.81	64,961	9.14	61,778	11.55
ICAL Result ==>	325,249	6.32	135,589	9.64	130,777	12.05

Associated Analyses

Sample Name	ID	Area	RT	Area	RT	Area	RT
Lab Control Sample	KWG1413516-1	313,865	6.31	130,928	9.64	124,122	12.05
Method Blank	KWG1413516-3	299,670	6.32	126,223	9.64	115,012	12.05
LGC140924FL1-1	K1410529-010	293,745	6.32	123,568	9.64	112,596	12.05
LGC140924LC218-1	K1410529-011	285,223	6.32	125,478	9.64	108,695	12.05
LGC140924LC224-1	K1410529-012	286,750	6.32	122,481	9.64	109,341	12.05
LGC140924LC01-1	K1410529-013	287,198	6.32	124,316	9.64	109,310	12.05
LG140924LC111B-1	K1410529-015	296,755	6.32	124,653	9.64	111,277	12.05
LG14092485PA382-1	K1410529-016	283,995	6.32	121,002	9.64	106,557	12.05
LGC14092485PA384-1	K1410529-017	285,256	6.32	122,431	9.64	108,773	12.05
LGC140924LC124-1	K1410529-018	288,154	6.32	121,083	9.64	108,538	12.05
LGC140924DUP2-1	K1410529-019	284,663	6.32	122,778	9.64	109,241	12.05
LG140924LC122B-1	K1410529-020	286,783	6.32	121,906	9.64	107,918	12.05
LGC140924LC61B-1	K1410529-021	277,624	6.32	118,188	9.64	104,814	12.05
LGC140924LC226-1	K1410529-022	285,358	6.32	120,059	9.64	108,075	12.05
LGC140925SLAP5-1	K1410529-023	277,803	6.32	118,750	9.64	106,490	12.05
LGC140924LC116B-1	K1410529-014	284,732	6.32	120,974	9.64	106,107	12.05
LGC140924LC01-1MS	KWG1413516-6	298,488	6.32	125,230	9.64	122,208	12.05
LGC140924LC01-1DMS	KWG1413516-7	307,246	6.32	131,225	9.64	126,134	12.05

Results flagged with an asterisk (*) indicate values outside control criteria.

QA/QC Report

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Date Analyzed: 10/06/2014
Time Analyzed: 21:27

Internal Standard Area and RT Summary
Volatile Organic Compounds

File ID: J:\MS18\DATA\100614\1006F035.D
Instrument ID: GC-MS 18
Analysis Method: 8260C

Lab Code: KWG1413536-2
Analysis Lot: KWG1413536

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>	<u>Area</u>	<u>RT</u>
Results ==>	301,811	6.32	130,439	9.64	122,453	12.05
Upper Limit ==>	603,622	6.82	260,878	10.14	244,906	12.55
Lower Limit ==>	150,906	5.82	65,220	9.14	61,227	11.55
ICAL Result ==>	325,249	6.32	135,589	9.64	130,777	12.05

Associated Analyses

Lab Control Sample	KWG1413535-3	308,648	6.32	128,402	9.64	124,107	12.05
Method Blank	KWG1413535-5	294,367	6.32	122,184	9.64	111,974	12.05
LG140925SLAP4-1	K1410529-024	288,671	6.32	121,682	9.64	109,157	12.05
LG140925SLAP3-1	K1410529-025	286,219	6.32	122,711	9.64	109,858	12.05
LG140925SLAP1-1	K1410529-026	288,498	6.32	121,522	9.64	113,009	12.05

Results flagged with an asterisk (*) indicate values outside control criteria.

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/03/2014
Date Analyzed: 10/03/2014

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name: AOC14092295A172
Lab Code: K1410529-034
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1413475

Analyte Name	Sample Result	AOC14092295A172MS KWG1413475-1 Matrix Spike			AOC14092295A172DMS KWG1413475-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
Dichlorodifluoromethane	ND	6.45	10.0	65	6.12	10.0	61	30-155	5	30
Chloromethane	ND	8.84	10.0	88	8.63	10.0	86	40-125	2	30
Vinyl Chloride	ND	9.50	10.0	95	9.24	10.0	92	50-145	3	30
Bromomethane	ND	3.93	10.0	39	3.86	10.0	39	30-145	2	30
Chloroethane	ND	11.3	10.0	113	11.4	10.0	114	60-135	1	30
Trichlorofluoromethane	ND	8.15	10.0	82	8.06	10.0	81	60-145	1	30
1,1-Dichloroethene	ND	10.5	10.0	105	10.0	10.0	100	70-130	5	30
Acetone	ND	54.3	50.0	109	54.8	50.0	110	40-140	1	30
Carbon Disulfide	ND	19.4	20.0	97	18.9	20.0	94	35-160	3	30
Methylene Chloride	0.11	8.78	10.0	87	8.89	10.0	88	55-140	1	30
Methyl tert-Butyl Ether	ND	7.92	10.0	79	8.42	10.0	84	65-125	6	30
trans-1,2-Dichloroethene	ND	9.87	10.0	99	9.58	10.0	96	60-140	3	30
1,1-Dichloroethane	ND	10.7	10.0	107	10.4	10.0	104	70-135	3	30
2,2-Dichloropropane	ND	6.43	10.0	64 *	6.08	10.0	61 *	70-135	6	30
cis-1,2-Dichloroethene	ND	9.67	10.0	97	9.21	10.0	92	70-125	5	30
2-Butanone (MEK)	ND	50.9	50.0	102	56.4	50.0	113	30-150	10	30
Bromochloromethane	ND	9.91	10.0	99	10.1	10.0	101	65-130	2	30
Chloroform	ND	9.80	10.0	98	9.53	10.0	95	65-135	3	30
1,1,1-Trichloroethane (TCA)	ND	8.29	10.0	83	7.94	10.0	79	65-130	4	30
Carbon Tetrachloride	ND	8.42	10.0	84	8.45	10.0	85	65-140	0	30
1,1-Dichloropropene	ND	10.4	10.0	104	10.3	10.0	103	75-130	1	30
Benzene	ND	9.89	10.0	99	9.72	10.0	97	80-120	2	30
1,2-Dichloroethane (EDC)	ND	10.3	10.0	103	10.3	10.0	103	70-130	0	30
Trichloroethene (TCE)	ND	9.44	10.0	94	9.29	10.0	93	70-125	2	30
1,2-Dichloropropane	ND	9.65	10.0	97	9.51	10.0	95	75-125	1	30
Dibromomethane	ND	9.56	10.0	96	9.52	10.0	95	75-125	0	30
Bromodichloromethane	ND	9.07	10.0	91	8.99	10.0	90	75-120	1	30
cis-1,3-Dichloropropene	ND	7.94	10.0	79	7.94	10.0	79	70-130	0	30
4-Methyl-2-pentanone (MIBK)	ND	50.3	50.0	101	54.9	50.0	110	60-135	9	30
Toluene	0.080	9.74	10.0	97	9.52	10.0	94	75-120	2	30
trans-1,3-Dichloropropene	ND	6.68	10.0	67	6.85	10.0	69	55-140	3	30
1,1,2-Trichloroethane	ND	9.73	10.0	97	9.92	10.0	99	75-125	2	30
Tetrachloroethene (PCE)	ND	9.31	10.0	93	9.02	10.0	90	45-150	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/03/2014
Date Analyzed: 10/03/2014

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name: AOC14092295A172
Lab Code: K1410529-034
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1413475

Analyte Name	Sample Result	AOC14092295A172MS KWG1413475-1 Matrix Spike			AOC14092295A172DMS KWG1413475-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
2-Hexanone	ND	48.4	50.0	97	53.4	50.0	107	55-130	10	30
1,3-Dichloropropane	ND	10.2	10.0	102	10.4	10.0	104	75-125	2	30
Dibromochloromethane	ND	8.76	10.0	88	9.04	10.0	90	60-135	3	30
1,2-Dibromoethane (EDB)	ND	9.33	10.0	93	9.72	10.0	97	80-120	4	30
Chlorobenzene	ND	9.59	10.0	96	9.79	10.0	98	80-120	2	30
Ethylbenzene	ND	9.47	10.0	95	9.47	10.0	95	75-125	0	30
1,1,1,2-Tetrachloroethane	ND	8.39	10.0	84	8.40	10.0	84	80-130	0	30
m,p-Xylenes	ND	19.5	20.0	97	19.2	20.0	96	75-130	1	30
o-Xylene	ND	9.53	10.0	95	9.75	10.0	98	80-120	2	30
Styrene	ND	10.0	10.0	100	9.83	10.0	98	65-135	2	30
Bromoform	ND	7.68	10.0	77	7.90	10.0	79	70-130	3	30
Isopropylbenzene	ND	9.57	10.0	96	9.46	10.0	95	75-125	1	30
1,1,2,2-Tetrachloroethane	ND	9.94	10.0	99	10.7	10.0	107	65-130	7	30
Bromobenzene	ND	9.53	10.0	95	9.51	10.0	95	75-125	0	30
n-Propylbenzene	ND	9.57	10.0	96	9.47	10.0	95	70-130	1	30
1,2,3-Trichloropropane	ND	9.55	10.0	96	9.82	10.0	98	75-125	3	30
2-Chlorotoluene	ND	9.54	10.0	95	9.68	10.0	97	75-125	1	30
1,3,5-Trimethylbenzene	ND	9.87	10.0	99	9.88	10.0	99	75-130	0	30
4-Chlorotoluene	ND	9.63	10.0	96	9.75	10.0	98	75-130	1	30
tert-Butylbenzene	ND	9.48	10.0	95	9.66	10.0	97	70-130	2	30
1,2,4-Trimethylbenzene	ND	9.82	10.0	98	9.85	10.0	99	75-130	0	30
sec-Butylbenzene	ND	9.42	10.0	94	9.58	10.0	96	70-125	2	30
4-Isopropyltoluene	ND	9.65	10.0	97	9.93	10.0	99	75-130	3	30
1,3-Dichlorobenzene	ND	9.71	10.0	97	9.72	10.0	97	75-125	0	30
1,4-Dichlorobenzene	ND	9.45	10.0	95	9.80	10.0	98	75-125	4	30
n-Butylbenzene	ND	9.74	10.0	97	9.97	10.0	100	70-135	2	30
1,2-Dichlorobenzene	ND	9.85	10.0	99	9.99	10.0	100	70-120	1	30
1,2-Dibromo-3-chloropropane	ND	8.22	10.0	82	8.38	10.0	84	50-130	2	30
1,2,4-Trichlorobenzene	ND	9.47	10.0	95	10.1	10.0	101	65-135	6	30
Hexachlorobutadiene	ND	8.89	10.0	89	9.52	10.0	95	50-140	7	30
Naphthalene	ND	10.5	10.0	105	11.4	10.0	114	55-140	8	30
1,2,3-Trichlorobenzene	ND	9.69	10.0	97	10.5	10.0	105	55-140	8	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/06/2014
Date Analyzed: 10/06/2014

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name: LGC140924LC01-1
Lab Code: K1410529-013
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1413516

Analyte Name	Sample Result	LGC140924LC01-1MS KWG1413516-6 Matrix Spike			LGC140924LC01-1DMS KWG1413516-7 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
Dichlorodifluoromethane	ND	10.2	10.0	102	9.76	10.0	98	30-155	4	30
Chloromethane	ND	11.5	10.0	115	11.0	10.0	110	40-125	4	30
Vinyl Chloride	ND	13.2	10.0	132	12.7	10.0	127	50-145	4	30
Bromomethane	ND	6.51	10.0	65	6.93	10.0	69	30-145	6	30
Chloroethane	ND	15.3	10.0	153 *	14.5	10.0	145 *	60-135	6	30
Trichlorofluoromethane	ND	10.8	10.0	108	10.4	10.0	104	60-145	3	30
1,1-Dichloroethene	ND	13.9	10.0	139 *	13.6	10.0	136 *	70-130	2	30
Acetone	ND	69.0	50.0	138	69.9	50.0	140	40-140	1	30
Carbon Disulfide	ND	26.2	20.0	131	25.4	20.0	127	35-160	3	30
Methylene Chloride	ND	10.2	10.0	102	10.1	10.0	101	55-140	1	30
Methyl tert-Butyl Ether	ND	9.12	10.0	91	9.10	10.0	91	65-125	0	30
trans-1,2-Dichloroethene	ND	12.5	10.0	125	12.4	10.0	124	60-140	1	30
1,1-Dichloroethane	ND	13.0	10.0	130	13.2	10.0	132	70-135	1	30
2,2-Dichloropropane	ND	6.85	10.0	69 *	6.85	10.0	69 *	70-135	0	30
cis-1,2-Dichloroethene	ND	11.9	10.0	119	11.4	10.0	114	70-125	4	30
2-Butanone (MEK)	ND	64.1	50.0	128	64.1	50.0	128	30-150	0	30
Bromochloromethane	ND	11.7	10.0	117	11.8	10.0	118	65-130	1	30
Chloroform	ND	11.9	10.0	119	11.7	10.0	117	65-135	2	30
1,1,1-Trichloroethane (TCA)	ND	10.8	10.0	108	10.7	10.0	107	65-130	0	30
Carbon Tetrachloride	ND	11.3	10.0	113	11.2	10.0	112	65-140	1	30
1,1-Dichloropropene	ND	13.6	10.0	136 *	13.1	10.0	131 *	75-130	4	30
Benzene	ND	12.5	10.0	125 *	12.2	10.0	122 *	80-120	3	30
1,2-Dichloroethane (EDC)	ND	12.1	10.0	121	12.2	10.0	122	70-130	1	30
Trichloroethene (TCE)	ND	12.4	10.0	124	11.8	10.0	118	70-125	4	30
1,2-Dichloropropane	ND	11.9	10.0	119	11.8	10.0	118	75-125	1	30
Dibromomethane	ND	11.7	10.0	117	11.7	10.0	117	75-125	0	30
Bromodichloromethane	ND	11.1	10.0	111	10.9	10.0	109	75-120	2	30
cis-1,3-Dichloropropene	ND	9.02	10.0	90	9.32	10.0	93	70-130	3	30
4-Methyl-2-pentanone (MIBK)	ND	64.6	50.0	129	64.3	50.0	129	60-135	0	30
Toluene	ND	12.0	10.0	120	11.6	10.0	116	75-120	3	30
trans-1,3-Dichloropropene	ND	7.54	10.0	75	7.60	10.0	76	55-140	1	30
1,1,2-Trichloroethane	ND	11.9	10.0	119	11.3	10.0	113	75-125	5	30
Tetrachloroethene (PCE)	ND	11.8	10.0	118	11.3	10.0	113	45-150	5	30

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Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/06/2014
Date Analyzed: 10/06/2014

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name: LGC140924LC01-1
Lab Code: K1410529-013
Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1413516

Analyte Name	Sample Result	LGC140924LC01-1MS KWG1413516-6 Matrix Spike			LGC140924LC01-1DMS KWG1413516-7 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
2-Hexanone	ND	63.1	50.0	126	59.4	50.0	119	55-130	6	30
1,3-Dichloropropane	ND	12.4	10.0	124	11.8	10.0	118	75-125	5	30
Dibromochloromethane	ND	10.8	10.0	108	10.6	10.0	106	60-135	2	30
1,2-Dibromoethane (EDB)	ND	11.5	10.0	115	10.7	10.0	107	80-120	7	30
Chlorobenzene	ND	12.0	10.0	120	11.3	10.0	113	80-120	5	30
Ethylbenzene	ND	11.6	10.0	116	11.5	10.0	115	75-125	1	30
1,1,1,2-Tetrachloroethane	ND	10.1	10.0	101	9.95	10.0	100	80-130	1	30
m,p-Xylenes	ND	24.4	20.0	122	23.4	20.0	117	75-130	4	30
o-Xylene	ND	11.7	10.0	117	11.3	10.0	113	80-120	4	30
Styrene	ND	12.1	10.0	121	11.3	10.0	113	65-135	7	30
Bromoform	ND	9.47	10.0	95	9.17	10.0	92	70-130	3	30
Isopropylbenzene	ND	12.2	10.0	122	11.7	10.0	117	75-125	4	30
1,1,2,2-Tetrachloroethane	ND	12.6	10.0	126	12.4	10.0	124	65-130	2	30
Bromobenzene	ND	11.4	10.0	114	10.9	10.0	109	75-125	4	30
n-Propylbenzene	ND	12.1	10.0	121	11.9	10.0	119	70-130	1	30
1,2,3-Trichloropropane	ND	11.8	10.0	118	11.1	10.0	111	75-125	6	30
2-Chlorotoluene	ND	12.0	10.0	120	11.6	10.0	116	75-125	3	30
1,3,5-Trimethylbenzene	ND	12.4	10.0	124	12.2	10.0	122	75-130	1	30
4-Chlorotoluene	ND	11.9	10.0	119	11.7	10.0	117	75-130	1	30
tert-Butylbenzene	ND	12.2	10.0	122	12.0	10.0	120	70-130	2	30
1,2,4-Trimethylbenzene	ND	12.2	10.0	122	11.9	10.0	119	75-130	2	30
sec-Butylbenzene	ND	12.2	10.0	122	12.0	10.0	120	70-125	2	30
4-Isopropyltoluene	ND	12.3	10.0	123	12.1	10.0	121	75-130	1	30
1,3-Dichlorobenzene	ND	11.5	10.0	115	11.3	10.0	113	75-125	1	30
1,4-Dichlorobenzene	ND	11.5	10.0	115	11.3	10.0	113	75-125	2	30
n-Butylbenzene	ND	12.3	10.0	123	12.2	10.0	122	70-135	1	30
1,2-Dichlorobenzene	ND	11.7	10.0	117	11.6	10.0	116	70-120	1	30
1,2-Dibromo-3-chloropropane	ND	9.03	10.0	90	9.66	10.0	97	50-130	7	30
1,2,4-Trichlorobenzene	ND	11.1	10.0	111	11.1	10.0	111	65-135	0	30
Hexachlorobutadiene	ND	11.2	10.0	112	11.3	10.0	113	50-140	1	30
Naphthalene	ND	12.5	10.0	125	12.4	10.0	124	55-140	1	30
1,2,3-Trichlorobenzene	ND	11.9	10.0	119	11.6	10.0	116	55-140	2	30

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Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/03/2014
Date Analyzed: 10/03/2014

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1413475

Lab Control Sample
 KWG1413475-3
Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
Dichlorodifluoromethane	6.30	10.0	63	30-155
Chloromethane	8.88	10.0	89	40-125
Vinyl Chloride	9.75	10.0	98	50-145
Bromomethane	3.68	10.0	37	30-145
Chloroethane	12.2	10.0	122	60-135
Trichlorofluoromethane	8.37	10.0	84	60-145
1,1-Dichloroethene	10.8	10.0	108	70-130
Acetone	70.6	50.0	141 *	40-140
Carbon Disulfide	19.8	20.0	99	35-160
Methylene Chloride	9.10	10.0	91	55-140
Methyl tert-Butyl Ether	8.68	10.0	87	65-125
trans-1,2-Dichloroethene	10.3	10.0	103	60-140
1,1-Dichloroethane	10.9	10.0	109	70-135
2,2-Dichloropropane	6.35	10.0	64 *	70-135
cis-1,2-Dichloroethene	9.73	10.0	97	70-125
2-Butanone (MEK)	62.8	50.0	126	30-150
Bromochloromethane	10.5	10.0	105	65-130
Chloroform	9.77	10.0	98	65-135
1,1,1-Trichloroethane (TCA)	8.52	10.0	85	65-130
Carbon Tetrachloride	8.65	10.0	87	65-140
1,1-Dichloropropene	10.6	10.0	106	75-130
Benzene	10.1	10.0	101	80-120
1,2-Dichloroethane (EDC)	10.0	10.0	100	70-130
Trichloroethene (TCE)	9.79	10.0	98	70-125
1,2-Dichloropropane	9.81	10.0	98	75-125
Dibromomethane	10.1	10.0	101	75-125
Bromodichloromethane	9.26	10.0	93	75-120
cis-1,3-Dichloropropene	8.09	10.0	81	70-130
4-Methyl-2-pentanone (MIBK)	57.4	50.0	115	60-135
Toluene	9.93	10.0	99	75-120
trans-1,3-Dichloropropene	6.77	10.0	68	55-140
1,1,2-Trichloroethane	9.89	10.0	99	75-125
Tetrachloroethene (PCE)	9.50	10.0	95	45-150
2-Hexanone	57.2	50.0	114	55-130
1,3-Dichloropropane	10.2	10.0	102	75-125

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Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/03/2014
Date Analyzed: 10/03/2014

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1413475

Lab Control Sample
 KWG1413475-3
Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
Dibromochloromethane	8.94	10.0	89	60-135
1,2-Dibromoethane (EDB)	9.72	10.0	97	80-120
Chlorobenzene	9.56	10.0	96	80-120
Ethylbenzene	9.43	10.0	94	75-125
1,1,1,2-Tetrachloroethane	8.21	10.0	82	80-130
m,p-Xylenes	19.5	20.0	98	75-130
o-Xylene	9.51	10.0	95	80-120
Styrene	9.74	10.0	97	65-135
Bromoform	7.78	10.0	78	70-130
Isopropylbenzene	9.51	10.0	95	75-125
1,1,2,2-Tetrachloroethane	10.4	10.0	104	65-130
Bromobenzene	9.48	10.0	95	75-125
n-Propylbenzene	9.68	10.0	97	70-130
1,2,3-Trichloropropane	10.1	10.0	101	75-125
2-Chlorotoluene	9.70	10.0	97	75-125
1,3,5-Trimethylbenzene	9.89	10.0	99	75-130
4-Chlorotoluene	9.71	10.0	97	75-130
tert-Butylbenzene	9.86	10.0	99	70-130
1,2,4-Trimethylbenzene	9.85	10.0	99	75-130
sec-Butylbenzene	9.60	10.0	96	70-125
4-Isopropyltoluene	9.95	10.0	100	75-130
1,3-Dichlorobenzene	9.68	10.0	97	75-125
1,4-Dichlorobenzene	9.64	10.0	96	75-125
n-Butylbenzene	10.0	10.0	100	70-135
1,2-Dichlorobenzene	9.81	10.0	98	70-120
1,2-Dibromo-3-chloropropane	8.43	10.0	84	50-130
1,2,4-Trichlorobenzene	9.88	10.0	99	65-135
Hexachlorobutadiene	9.49	10.0	95	50-140
Naphthalene	10.9	10.0	109	55-140
1,2,3-Trichlorobenzene	10.6	10.0	106	55-140

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/04/2014
Date Analyzed: 10/04/2014

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1413488

Lab Control Sample
 KWG1413488-3
Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
Dichlorodifluoromethane	8.53	10.0	85	30-155
Chloromethane	9.82	10.0	98	40-125
Vinyl Chloride	10.6	10.0	106	50-145
Bromomethane	4.27	10.0	43	30-145
Chloroethane	12.5	10.0	125	60-135
Trichlorofluoromethane	9.12	10.0	91	60-145
1,1-Dichloroethene	11.7	10.0	117	70-130
Acetone	70.4	50.0	141 *	40-140
Carbon Disulfide	21.8	20.0	109	35-160
Methylene Chloride	9.75	10.0	98	55-140
Methyl tert-Butyl Ether	9.02	10.0	90	65-125
trans-1,2-Dichloroethene	11.1	10.0	111	60-140
1,1-Dichloroethane	11.7	10.0	117	70-135
2,2-Dichloropropane	7.26	10.0	73	70-135
cis-1,2-Dichloroethene	10.6	10.0	106	70-125
2-Butanone (MEK)	64.4	50.0	129	30-150
Bromochloromethane	10.7	10.0	107	65-130
Chloroform	10.9	10.0	109	65-135
1,1,1-Trichloroethane (TCA)	9.52	10.0	95	65-130
Carbon Tetrachloride	9.59	10.0	96	65-140
1,1-Dichloropropene	11.1	10.0	111	75-130
Benzene	11.0	10.0	110	80-120
1,2-Dichloroethane (EDC)	11.0	10.0	110	70-130
Trichloroethene (TCE)	10.5	10.0	105	70-125
1,2-Dichloropropane	10.9	10.0	109	75-125
Dibromomethane	10.6	10.0	106	75-125
Bromodichloromethane	10.1	10.0	101	75-120
cis-1,3-Dichloropropene	9.30	10.0	93	70-130
4-Methyl-2-pentanone (MIBK)	59.8	50.0	120	60-135
Toluene	10.7	10.0	107	75-120
trans-1,3-Dichloropropene	7.61	10.0	76	55-140
1,1,2-Trichloroethane	10.5	10.0	105	75-125
Tetrachloroethene (PCE)	10.0	10.0	100	45-150
2-Hexanone	57.4	50.0	115	55-130
1,3-Dichloropropane	11.0	10.0	110	75-125

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Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/04/2014
Date Analyzed: 10/04/2014

**Lab Control Spike Summary
 Volatile Organic Compounds**

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1413488

Lab Control Sample
 KWG1413488-3
Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
Dibromochloromethane	9.82	10.0	98	60-135
1,2-Dibromoethane (EDB)	10.4	10.0	104	80-120
Chlorobenzene	10.5	10.0	105	80-120
Ethylbenzene	10.2	10.0	102	75-125
1,1,1,2-Tetrachloroethane	9.28	10.0	93	80-130
m,p-Xylenes	21.0	20.0	105	75-130
o-Xylene	10.3	10.0	103	80-120
Styrene	10.6	10.0	106	65-135
Bromoform	8.78	10.0	88	70-130
Isopropylbenzene	10.4	10.0	104	75-125
1,1,2,2-Tetrachloroethane	11.0	10.0	110	65-130
Bromobenzene	10.5	10.0	105	75-125
n-Propylbenzene	10.6	10.0	106	70-130
1,2,3-Trichloropropane	10.4	10.0	104	75-125
2-Chlorotoluene	10.5	10.0	105	75-125
1,3,5-Trimethylbenzene	10.9	10.0	109	75-130
4-Chlorotoluene	10.8	10.0	108	75-130
tert-Butylbenzene	10.8	10.0	108	70-130
1,2,4-Trimethylbenzene	10.8	10.0	108	75-130
sec-Butylbenzene	10.6	10.0	106	70-125
4-Isopropyltoluene	10.8	10.0	108	75-130
1,3-Dichlorobenzene	10.7	10.0	107	75-125
1,4-Dichlorobenzene	10.6	10.0	106	75-125
n-Butylbenzene	11.1	10.0	111	70-135
1,2-Dichlorobenzene	10.6	10.0	106	70-120
1,2-Dibromo-3-chloropropane	9.28	10.0	93	50-130
1,2,4-Trichlorobenzene	10.6	10.0	106	65-135
Hexachlorobutadiene	9.90	10.0	99	50-140
Naphthalene	11.6	10.0	116	55-140
1,2,3-Trichlorobenzene	10.9	10.0	109	55-140

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Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/06/2014
Date Analyzed: 10/06/2014

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1413516

Lab Control Sample
 KWG1413516-1
Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
Dichlorodifluoromethane	9.27	10.0	93	30-155
Chloromethane	10.6	10.0	106	40-125
Vinyl Chloride	11.6	10.0	116	50-145
Bromomethane	5.44	10.0	54	30-145
Chloroethane	13.5	10.0	135	60-135
Trichlorofluoromethane	10.0	10.0	100	60-145
1,1-Dichloroethene	12.8	10.0	128	70-130
Acetone	75.0	50.0	150 *	40-140
Carbon Disulfide	24.5	20.0	123	35-160
Methylene Chloride	10.2	10.0	102	55-140
Methyl tert-Butyl Ether	9.10	10.0	91	65-125
trans-1,2-Dichloroethene	11.8	10.0	118	60-140
1,1-Dichloroethane	12.3	10.0	123	70-135
2,2-Dichloropropane	7.88	10.0	79	70-135
cis-1,2-Dichloroethene	10.8	10.0	108	70-125
2-Butanone (MEK)	65.6	50.0	131	30-150
Bromochloromethane	11.5	10.0	115	65-130
Chloroform	11.2	10.0	112	65-135
1,1,1-Trichloroethane (TCA)	10.3	10.0	103	65-130
Carbon Tetrachloride	10.3	10.0	103	65-140
1,1-Dichloropropene	12.4	10.0	124	75-130
Benzene	11.4	10.0	114	80-120
1,2-Dichloroethane (EDC)	11.6	10.0	116	70-130
Trichloroethene (TCE)	11.5	10.0	115	70-125
1,2-Dichloropropane	11.0	10.0	110	75-125
Dibromomethane	11.1	10.0	111	75-125
Bromodichloromethane	10.9	10.0	109	75-120
cis-1,3-Dichloropropene	9.44	10.0	94	70-130
4-Methyl-2-pentanone (MIBK)	59.9	50.0	120	60-135
Toluene	11.1	10.0	111	75-120
trans-1,3-Dichloropropene	8.07	10.0	81	55-140
1,1,2-Trichloroethane	11.0	10.0	110	75-125
Tetrachloroethene (PCE)	10.5	10.0	105	45-150
2-Hexanone	57.9	50.0	116	55-130
1,3-Dichloropropane	11.4	10.0	114	75-125

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Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/06/2014
Date Analyzed: 10/06/2014

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1413516

Lab Control Sample
 KWG1413516-1
Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
Dibromochloromethane	10.6	10.0	106	60-135
1,2-Dibromoethane (EDB)	10.4	10.0	104	80-120
Chlorobenzene	10.9	10.0	109	80-120
Ethylbenzene	10.9	10.0	109	75-125
1,1,1,2-Tetrachloroethane	9.87	10.0	99	80-130
m,p-Xylenes	22.1	20.0	111	75-130
o-Xylene	11.0	10.0	110	80-120
Styrene	11.3	10.0	113	65-135
Bromoform	9.16	10.0	92	70-130
Isopropylbenzene	11.0	10.0	110	75-125
1,1,2,2-Tetrachloroethane	11.3	10.0	113	65-130
Bromobenzene	10.9	10.0	109	75-125
n-Propylbenzene	11.5	10.0	115	70-130
1,2,3-Trichloropropane	10.8	10.0	108	75-125
2-Chlorotoluene	11.1	10.0	111	75-125
1,3,5-Trimethylbenzene	11.8	10.0	118	75-130
4-Chlorotoluene	11.3	10.0	113	75-130
tert-Butylbenzene	11.6	10.0	116	70-130
1,2,4-Trimethylbenzene	11.6	10.0	116	75-130
sec-Butylbenzene	11.5	10.0	115	70-125
4-Isopropyltoluene	11.8	10.0	118	75-130
1,3-Dichlorobenzene	11.1	10.0	111	75-125
1,4-Dichlorobenzene	11.1	10.0	111	75-125
n-Butylbenzene	11.8	10.0	118	70-135
1,2-Dichlorobenzene	11.1	10.0	111	70-120
1,2-Dibromo-3-chloropropane	9.59	10.0	96	50-130
1,2,4-Trichlorobenzene	10.9	10.0	109	65-135
Hexachlorobutadiene	10.8	10.0	108	50-140
Naphthalene	11.7	10.0	117	55-140
1,2,3-Trichlorobenzene	11.6	10.0	116	55-140

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/06/2014
Date Analyzed: 10/06/2014

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1413535

Lab Control Sample
 KWG1413535-3
Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
Dichlorodifluoromethane	8.56	10.0	86	30-155
Chloromethane	10.4	10.0	104	40-125
Vinyl Chloride	11.3	10.0	113	50-145
Bromomethane	6.36	10.0	64	30-145
Chloroethane	13.0	10.0	130	60-135
Trichlorofluoromethane	9.59	10.0	96	60-145
1,1-Dichloroethene	12.3	10.0	123	70-130
Acetone	72.7	50.0	145 *	40-140
Carbon Disulfide	22.3	20.0	111	35-160
Methylene Chloride	9.90	10.0	99	55-140
Methyl tert-Butyl Ether	8.54	10.0	85	65-125
trans-1,2-Dichloroethene	11.1	10.0	111	60-140
1,1-Dichloroethane	12.4	10.0	124	70-135
2,2-Dichloropropane	6.17	10.0	62 *	70-135
cis-1,2-Dichloroethene	10.8	10.0	108	70-125
2-Butanone (MEK)	62.0	50.0	124	30-150
Bromochloromethane	11.5	10.0	115	65-130
Chloroform	11.0	10.0	110	65-135
1,1,1-Trichloroethane (TCA)	9.72	10.0	97	65-130
Carbon Tetrachloride	9.86	10.0	99	65-140
1,1-Dichloropropene	12.0	10.0	120	75-130
Benzene	11.3	10.0	113	80-120
1,2-Dichloroethane (EDC)	11.4	10.0	114	70-130
Trichloroethene (TCE)	11.1	10.0	111	70-125
1,2-Dichloropropane	10.9	10.0	109	75-125
Dibromomethane	11.0	10.0	110	75-125
Bromodichloromethane	10.2	10.0	102	75-120
cis-1,3-Dichloropropene	8.87	10.0	89	70-130
4-Methyl-2-pentanone (MIBK)	59.8	50.0	120	60-135
Toluene	10.7	10.0	107	75-120
trans-1,3-Dichloropropene	7.39	10.0	74	55-140
1,1,2-Trichloroethane	11.4	10.0	114	75-125
Tetrachloroethene (PCE)	10.3	10.0	103	45-150
2-Hexanone	58.8	50.0	118	55-130
1,3-Dichloropropane	11.8	10.0	118	75-125

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/06/2014
Date Analyzed: 10/06/2014

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260C

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1413535

Lab Control Sample
 KWG1413535-3
Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
Dibromochloromethane	9.94	10.0	99	60-135
1,2-Dibromoethane (EDB)	10.7	10.0	107	80-120
Chlorobenzene	10.8	10.0	108	80-120
Ethylbenzene	10.8	10.0	108	75-125
1,1,1,2-Tetrachloroethane	9.45	10.0	95	80-130
m,p-Xylenes	21.7	20.0	109	75-130
o-Xylene	10.8	10.0	108	80-120
Styrene	11.1	10.0	111	65-135
Bromoform	8.80	10.0	88	70-130
Isopropylbenzene	10.8	10.0	108	75-125
1,1,2,2-Tetrachloroethane	11.6	10.0	116	65-130
Bromobenzene	10.3	10.0	103	75-125
n-Propylbenzene	10.9	10.0	109	70-130
1,2,3-Trichloropropane	10.6	10.0	106	75-125
2-Chlorotoluene	10.8	10.0	108	75-125
1,3,5-Trimethylbenzene	11.2	10.0	112	75-130
4-Chlorotoluene	10.8	10.0	108	75-130
tert-Butylbenzene	11.1	10.0	111	70-130
1,2,4-Trimethylbenzene	11.2	10.0	112	75-130
sec-Butylbenzene	10.9	10.0	109	70-125
4-Isopropyltoluene	11.0	10.0	110	75-130
1,3-Dichlorobenzene	10.6	10.0	106	75-125
1,4-Dichlorobenzene	10.7	10.0	107	75-125
n-Butylbenzene	11.2	10.0	112	70-135
1,2-Dichlorobenzene	11.0	10.0	110	70-120
1,2-Dibromo-3-chloropropane	9.06	10.0	91	50-130
1,2,4-Trichlorobenzene	10.5	10.0	105	65-135
Hexachlorobutadiene	10.2	10.0	102	50-140
Naphthalene	12.1	10.0	121	55-140
1,2,3-Trichlorobenzene	11.0	10.0	110	55-140

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/03/2014
Date Analyzed: 10/03/2014
Time Analyzed: 18:17

Method Blank Summary
Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1413475-4
Extraction Method: EPA 5030B
Analysis Method: 8260C
Instrument ID: GC-MS 18
File ID: J:\MS18\DATA\100314\1003F015.D
Level: Low
Extraction Lot: KWG1413475

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1413475-3	J:\MS18\DATA\100314\1003F009.D	10/03/14	16:02
AOC14092295A172MS	KWG1413475-1	J:\MS18\DATA\100314\1003F010.D	10/03/14	16:31
AOC14092295A172DMS	KWG1413475-2	J:\MS18\DATA\100314\1003F011.D	10/03/14	16:52
TB-140922	K1410529-031	J:\MS18\DATA\100314\1003F016.D	10/03/14	18:38
AOC14092295A172	K1410529-034	J:\MS18\DATA\100314\1003F018.D	10/03/14	19:21
AOC14092210A178	K1410529-032	J:\MS18\DATA\100314\1003F034.D	10/04/14	01:03
AOC140922DUP2	K1410529-033	J:\MS18\DATA\100314\1003F035.D	10/04/14	01:24
AOC140922DUP2	K1410529-033	J:\MS18\DATA\100314\1003F036.D	10/04/14	01:46
AOC14092210A178	K1410529-032	J:\MS18\DATA\100314\1003F037.D	10/04/14	02:07

QA/QC Report

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/04/2014
Date Analyzed: 10/04/2014
Time Analyzed: 15:24

Method Blank Summary
Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1413488-4
Extraction Method: EPA 5030B
Analysis Method: 8260C

Instrument ID: GC-MS 18
File ID: J:\MS18\DATA\100414\1004F015.D
Level: Low
Extraction Lot: KWG1413488

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1413488-3	J:\MS18\DATA\100414\1004F010.D	10/04/14	13:38
TB-140923	K1410529-001	J:\MS18\DATA\100414\1004F017.D	10/04/14	16:06
LGC140923LC135-1	K1410529-002	J:\MS18\DATA\100414\1004F018.D	10/04/14	16:28
LGC140923LC10830-1	K1410529-003	J:\MS18\DATA\100414\1004F019.D	10/04/14	16:49
LGC140923LC10860-1	K1410529-004	J:\MS18\DATA\100414\1004F020.D	10/04/14	17:10
LGC140923LC10885-1	K1410529-005	J:\MS18\DATA\100414\1004F021.D	10/04/14	17:31
LGC140923MT4-1	K1410529-006	J:\MS18\DATA\100414\1004F022.D	10/04/14	17:53
LGC140923MT3-1	K1410529-007	J:\MS18\DATA\100414\1004F023.D	10/04/14	18:14
LGC140923MT2-1	K1410529-008	J:\MS18\DATA\100414\1004F024.D	10/04/14	18:37
LGC140923MT1-1	K1410529-009	J:\MS18\DATA\100414\1004F025.D	10/04/14	18:58
AOC14092307A177	K1410529-035	J:\MS18\DATA\100414\1004F026.D	10/04/14	19:20
AOC14092395A173A	K1410529-036	J:\MS18\DATA\100414\1004F032.D	10/04/14	21:27
AOC140922DUP2	K1410529-033	J:\MS18\DATA\100414\1004F034.D	10/04/14	22:10

QA/QC Report

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/06/2014
Date Analyzed: 10/06/2014
Time Analyzed: 11:50

Method Blank Summary
Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1413516-3
Extraction Method: EPA 5030B
Analysis Method: 8260C

Instrument ID: GC-MS 18
File ID: J:\MS18\DATA\100614\1006F008.D
Level: Low
Extraction Lot: KWG1413516

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1413516-1	J:\MS18\DATA\100614\1006F004.D	10/06/14	10:14
LGC140924FL1-1	K1410529-010	J:\MS18\DATA\100614\1006F014.D	10/06/14	13:58
LGC140924LC218-1	K1410529-011	J:\MS18\DATA\100614\1006F015.D	10/06/14	14:20
LGC140924LC224-1	K1410529-012	J:\MS18\DATA\100614\1006F016.D	10/06/14	14:41
LGC140924LC01-1	K1410529-013	J:\MS18\DATA\100614\1006F017.D	10/06/14	15:02
LG140924LC111B-1	K1410529-015	J:\MS18\DATA\100614\1006F018.D	10/06/14	15:24
LG14092485PA382-1	K1410529-016	J:\MS18\DATA\100614\1006F019.D	10/06/14	15:45
LGC14092485PA384-1	K1410529-017	J:\MS18\DATA\100614\1006F020.D	10/06/14	16:06
LGC140924LC124-1	K1410529-018	J:\MS18\DATA\100614\1006F021.D	10/06/14	16:28
LGC140924DUP2-1	K1410529-019	J:\MS18\DATA\100614\1006F022.D	10/06/14	16:49
LG140924LC122B-1	K1410529-020	J:\MS18\DATA\100614\1006F023.D	10/06/14	17:10
LGC140924LC61B-1	K1410529-021	J:\MS18\DATA\100614\1006F024.D	10/06/14	17:32
LGC140924LC226-1	K1410529-022	J:\MS18\DATA\100614\1006F025.D	10/06/14	17:53
LGC140925SLAP5-1	K1410529-023	J:\MS18\DATA\100614\1006F026.D	10/06/14	18:15
LGC140924LC116B-1	K1410529-014	J:\MS18\DATA\100614\1006F027.D	10/06/14	18:36
LGC140924LC01-1MS	KWG1413516-6	J:\MS18\DATA\100614\1006F028.D	10/06/14	18:57
LGC140924LC01-1DMS	KWG1413516-7	J:\MS18\DATA\100614\1006F029.D	10/06/14	19:19

QA/QC Report

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/06/2014
Date Analyzed: 10/06/2014
Time Analyzed: 23:57

Method Blank Summary
Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1413535-5
Extraction Method: EPA 5030B
Analysis Method: 8260C
Instrument ID: GC-MS 18
File ID: J:\MS18\DATA\100614\1006F042.D
Level: Low
Extraction Lot: KWG1413535

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1413535-3	J:\MS18\DATA\100614\1006F037.D	10/06/14	22:10
LG140925SLAP4-1	K1410529-024	J:\MS18\DATA\100614\1006F043.D	10/07/14	00:19
LG140925SLAP3-1	K1410529-025	J:\MS18\DATA\100614\1006F044.D	10/07/14	00:40
LG140925SLAP1-1	K1410529-026	J:\MS18\DATA\100614\1006F045.D	10/07/14	01:02

QA/QC Report

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/06/2014
Date Analyzed: 10/06/2014
Time Analyzed: 10:14

Lab Control Sample Summary
Volatile Organic Compounds

Sample Name: Lab Control Sample **Instrument ID:** GC-MS 18
Lab Code: KWG1413516-1 **File ID:** J:\MS18\DATA\100614\1006F004.D
Extraction Method: EPA 5030B **Level:** Low
Analysis Method: 8260C **Extraction Lot:** KWG1413516

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG1413516-3	J:\MS18\DATA\100614\1006F008.D	10/06/14	11:50
LGC140924FL1-1	K1410529-010	J:\MS18\DATA\100614\1006F014.D	10/06/14	13:58
LGC140924LC218-1	K1410529-011	J:\MS18\DATA\100614\1006F015.D	10/06/14	14:20
LGC140924LC224-1	K1410529-012	J:\MS18\DATA\100614\1006F016.D	10/06/14	14:41
LGC140924LC01-1	K1410529-013	J:\MS18\DATA\100614\1006F017.D	10/06/14	15:02
LG140924LC111B-1	K1410529-015	J:\MS18\DATA\100614\1006F018.D	10/06/14	15:24
LG14092485PA382-1	K1410529-016	J:\MS18\DATA\100614\1006F019.D	10/06/14	15:45
LGC14092485PA384-1	K1410529-017	J:\MS18\DATA\100614\1006F020.D	10/06/14	16:06
LGC140924LC124-1	K1410529-018	J:\MS18\DATA\100614\1006F021.D	10/06/14	16:28
LGC140924DUP2-1	K1410529-019	J:\MS18\DATA\100614\1006F022.D	10/06/14	16:49
LG140924LC122B-1	K1410529-020	J:\MS18\DATA\100614\1006F023.D	10/06/14	17:10
LGC140924LC61B-1	K1410529-021	J:\MS18\DATA\100614\1006F024.D	10/06/14	17:32
LGC140924LC226-1	K1410529-022	J:\MS18\DATA\100614\1006F025.D	10/06/14	17:53
LGC140925SLAP5-1	K1410529-023	J:\MS18\DATA\100614\1006F026.D	10/06/14	18:15
LGC140924LC116B-1	K1410529-014	J:\MS18\DATA\100614\1006F027.D	10/06/14	18:36
LGC140924LC01-1MS	KWG1413516-6	J:\MS18\DATA\100614\1006F028.D	10/06/14	18:57
LGC140924LC01-1DMS	KWG1413516-7	J:\MS18\DATA\100614\1006F029.D	10/06/14	19:19

QA/QC Report

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/06/2014
Date Analyzed: 10/06/2014
Time Analyzed: 22:10

Lab Control Sample Summary
Volatile Organic Compounds

Sample Name: Lab Control Sample
Lab Code: KWG1413535-3
Extraction Method: EPA 5030B
Analysis Method: 8260C

Instrument ID: GC-MS 18
File ID: J:\MS18\DATA\100614\1006F037.D
Level: Low
Extraction Lot: KWG1413535

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG1413535-5	J:\MS18\DATA\100614\1006F042.D	10/06/14	23:57
LG140925SLAP4-1	K1410529-024	J:\MS18\DATA\100614\1006F043.D	10/07/14	00:19
LG140925SLAP3-1	K1410529-025	J:\MS18\DATA\100614\1006F044.D	10/07/14	00:40
LG140925SLAP1-1	K1410529-026	J:\MS18\DATA\100614\1006F045.D	10/07/14	01:02

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Date Analyzed: 10/03/2014
Time Analyzed: 14:35

Tune Summary
Volatile Organic Compounds

File ID: J:\MS18\DATA\100314\1003F006.D
Instrument ID: GC-MS 18
Column:

Analysis Method: 8260C
Analysis Lot: KWG1413468

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
50	95	15	40	20.4	11319	PASS
75	95	30	60	51.2	28448	PASS
95	95	100	100	100.0	55581	PASS
96	95	5	9	6.9	3822	PASS
173	174	0	2	0.9	409	PASS
174	95	50	120	80.8	44904	PASS
175	174	5	9	6.0	2700	PASS
176	174	95	101	96.2	43208	PASS
177	176	5	9	6.3	2729	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1413468-2	J:\MS18\DATA\100314\1003F008.D	10/03/2014	15:41	
Lab Control Sample	KWG1413475-3	J:\MS18\DATA\100314\1003F009.D	10/03/2014	16:02	
AOC14092295A172MS	KWG1413475-1	J:\MS18\DATA\100314\1003F010.D	10/03/2014	16:31	
AOC14092295A172DMS	KWG1413475-2	J:\MS18\DATA\100314\1003F011.D	10/03/2014	16:52	
Method Blank	KWG1413475-4	J:\MS18\DATA\100314\1003F015.D	10/03/2014	18:17	
TB-140922	K1410529-031	J:\MS18\DATA\100314\1003F016.D	10/03/2014	18:38	
AOC14092295A172	K1410529-034	J:\MS18\DATA\100314\1003F018.D	10/03/2014	19:21	
AOC14092210A178	K1410529-032	J:\MS18\DATA\100314\1003F034.D	10/04/2014	01:03	
AOC140922DUP2	K1410529-033	J:\MS18\DATA\100314\1003F035.D	10/04/2014	01:24	
AOC140922DUP2	K1410529-033	J:\MS18\DATA\100314\1003F036.D	10/04/2014	01:46	
AOC14092210A178	K1410529-032	J:\MS18\DATA\100314\1003F037.D	10/04/2014	02:07	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Date Analyzed: 10/04/2014
Time Analyzed: 12:16

Tune Summary
Volatile Organic Compounds

File ID: J:\MS18\DATA\100414\1004F007.D
Instrument ID: GC-MS 18
Column:

Analysis Method: 8260C
Analysis Lot: KWG1413485

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
50	95	15	40	19.0	12610	PASS
75	95	30	60	50.8	33664	PASS
95	95	100	100	100.0	66290	PASS
96	95	5	9	7.0	4651	PASS
173	174	0	2	0.5	243	PASS
174	95	50	120	76.2	50482	PASS
175	174	5	9	6.9	3492	PASS
176	174	95	101	95.6	48269	PASS
177	176	5	9	6.5	3146	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1413485-3	J:\MS18\DATA\100414\1004F009.D	10/04/2014	13:04	
Lab Control Sample	KWG1413488-3	J:\MS18\DATA\100414\1004F010.D	10/04/2014	13:38	
Method Blank	KWG1413488-4	J:\MS18\DATA\100414\1004F015.D	10/04/2014	15:24	
TB-140923	K1410529-001	J:\MS18\DATA\100414\1004F017.D	10/04/2014	16:06	
LGC140923LC135-1	K1410529-002	J:\MS18\DATA\100414\1004F018.D	10/04/2014	16:28	
LGC140923LC10830-1	K1410529-003	J:\MS18\DATA\100414\1004F019.D	10/04/2014	16:49	
LGC140923LC10860-1	K1410529-004	J:\MS18\DATA\100414\1004F020.D	10/04/2014	17:10	
LGC140923LC10885-1	K1410529-005	J:\MS18\DATA\100414\1004F021.D	10/04/2014	17:31	
LGC140923MT4-1	K1410529-006	J:\MS18\DATA\100414\1004F022.D	10/04/2014	17:53	
LGC140923MT3-1	K1410529-007	J:\MS18\DATA\100414\1004F023.D	10/04/2014	18:14	
LGC140923MT2-1	K1410529-008	J:\MS18\DATA\100414\1004F024.D	10/04/2014	18:37	
LGC140923MT1-1	K1410529-009	J:\MS18\DATA\100414\1004F025.D	10/04/2014	18:58	
AOC14092307A177	K1410529-035	J:\MS18\DATA\100414\1004F026.D	10/04/2014	19:20	
AOC14092395A173A	K1410529-036	J:\MS18\DATA\100414\1004F032.D	10/04/2014	21:27	
AOC140922DUP2	K1410529-033	J:\MS18\DATA\100414\1004F034.D	10/04/2014	22:10	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Date Analyzed: 10/06/2014
Time Analyzed: 08:58

Tune Summary
Volatile Organic Compounds

File ID: J:\MS18\DATA\100614\1006F002.D
Instrument ID: GC-MS 18
Column:

Analysis Method: 8260C
Analysis Lot: KWG1413506

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
50	95	15	40	20.6	12443	PASS
75	95	30	60	52.6	31712	PASS
95	95	100	100	100.0	60301	PASS
96	95	5	9	7.0	4207	PASS
173	174	0	2	0.5	212	PASS
174	95	50	120	77.9	46954	PASS
175	174	5	9	6.5	3065	PASS
176	174	95	101	98.0	46034	PASS
177	176	5	9	6.7	3089	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1413506-2	J:\MS18\DATA\100614\1006F003.D	10/06/2014	09:31	
Lab Control Sample	KWG1413516-1	J:\MS18\DATA\100614\1006F004.D	10/06/2014	10:14	
Method Blank	KWG1413516-3	J:\MS18\DATA\100614\1006F008.D	10/06/2014	11:50	
LGC140924FL1-1	K1410529-010	J:\MS18\DATA\100614\1006F014.D	10/06/2014	13:58	
LGC140924LC218-1	K1410529-011	J:\MS18\DATA\100614\1006F015.D	10/06/2014	14:20	
LGC140924LC224-1	K1410529-012	J:\MS18\DATA\100614\1006F016.D	10/06/2014	14:41	
LGC140924LC01-1	K1410529-013	J:\MS18\DATA\100614\1006F017.D	10/06/2014	15:02	
LG140924LC111B-1	K1410529-015	J:\MS18\DATA\100614\1006F018.D	10/06/2014	15:24	
LG14092485PA382-1	K1410529-016	J:\MS18\DATA\100614\1006F019.D	10/06/2014	15:45	
LGC14092485PA384-1	K1410529-017	J:\MS18\DATA\100614\1006F020.D	10/06/2014	16:06	
LGC140924LC124-1	K1410529-018	J:\MS18\DATA\100614\1006F021.D	10/06/2014	16:28	
LGC140924DUP2-1	K1410529-019	J:\MS18\DATA\100614\1006F022.D	10/06/2014	16:49	
LG140924LC122B-1	K1410529-020	J:\MS18\DATA\100614\1006F023.D	10/06/2014	17:10	
LGC140924LC61B-1	K1410529-021	J:\MS18\DATA\100614\1006F024.D	10/06/2014	17:32	
LGC140924LC226-1	K1410529-022	J:\MS18\DATA\100614\1006F025.D	10/06/2014	17:53	
LGC140925SLAP5-1	K1410529-023	J:\MS18\DATA\100614\1006F026.D	10/06/2014	18:15	
LGC140924LC116B-1	K1410529-014	J:\MS18\DATA\100614\1006F027.D	10/06/2014	18:36	
LGC140924LC01-1MS	KWG1413516-6	J:\MS18\DATA\100614\1006F028.D	10/06/2014	18:57	
LGC140924LC01-1DMS	KWG1413516-7	J:\MS18\DATA\100614\1006F029.D	10/06/2014	19:19	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Date Analyzed: 10/06/2014
Time Analyzed: 21:06

Tune Summary
Volatile Organic Compounds

File ID: J:\MS18\DATA\100614\1006F034.D
Instrument ID: GC-MS 18
Column:

Analysis Method: 8260C
Analysis Lot: KWG1413536

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
50	95	15	40	22.0	11264	PASS
75	95	30	60	55.6	28501	PASS
95	95	100	100	100.0	51306	PASS
96	95	5	9	7.6	3879	PASS
173	174	0	2	0.3	127	PASS
174	95	50	120	78.5	40261	PASS
175	174	5	9	7.7	3086	PASS
176	174	95	101	96.1	38709	PASS
177	176	5	9	7.0	2727	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1413536-2	J:\MS18\DATA\100614\1006F035.D	10/06/2014	21:27	
Lab Control Sample	KWG1413535-3	J:\MS18\DATA\100614\1006F037.D	10/06/2014	22:10	
Method Blank	KWG1413535-5	J:\MS18\DATA\100614\1006F042.D	10/06/2014	23:57	
LG140925SLAP4-1	K1410529-024	J:\MS18\DATA\100614\1006F043.D	10/07/2014	00:19	
LG140925SLAP3-1	K1410529-025	J:\MS18\DATA\100614\1006F044.D	10/07/2014	00:40	
LG140925SLAP1-1	K1410529-026	J:\MS18\DATA\100614\1006F045.D	10/07/2014	01:02	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

Client: Sealaska Environmental Services, LLC
 Project: TO 01 JBLM

Service Request: K1410529
 Calibration Date: 09/17/2014

Initial Calibration Summary
 Volatile Organic Compounds

Calibration ID: CAL13556
 Instrument ID: GC-MS 18

Column: MS

Level ID	File ID	Level ID	File ID
A	J:\MS18\DATA\091714\0917F008.D	G	J:\MS18\DATA\091714\0917F014.D
B	J:\MS18\DATA\091714\0917F009.D	H	J:\MS18\DATA\091714\0917F015.D
C	J:\MS18\DATA\091714\0917F010.D	I	J:\MS18\DATA\091714\0917F016.D
D	J:\MS18\DATA\091714\0917F011.D	J	J:\MS18\DATA\091714\0917F017.D
E	J:\MS18\DATA\091714\0917F012.D	K	J:\MS18\DATA\091714\0917F018.D
F	J:\MS18\DATA\091714\0917F013.D		

Analyte Name	Level ID			Level ID			Level ID			Level ID			Level ID		
	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF
Dichlorodifluoromethane				B	0.20	0.247	C	0.50	0.320	D	1.0	0.335	E	2.0	0.303
	F	5.0	0.416	G	10	0.365	H	20	0.349	I	40	0.347	J	60	0.360
	K	80	0.365												
Chloromethane	A	0.10	0.453	B	0.20	0.416	C	0.50	0.373	D	1.0	0.394	E	2.0	0.343
	F	5.0	0.426	G	10	0.366	H	20	0.356	I	40	0.380	J	60	0.391
	K	80	0.395												
Vinyl Chloride	A	0.10	0.268	B	0.20	0.358	C	0.50	0.363	D	1.0	0.368	E	2.0	0.343
	F	5.0	0.462	G	10	0.397	H	20	0.388	I	40	0.384	J	60	0.397
	K	80	0.395												
Bromomethane							C	0.50	0.373	D	1.0	0.355	E	2.0	0.288
	F	5.0	0.336	G	10	0.250	H	20	0.214	I	40	0.232	J	60	0.254
	K	80	0.272												
Chloroethane							C	0.50	0.222	D	1.0	0.216	E	2.0	0.186
	F	5.0	0.251	G	10	0.210	H	20	0.203	I	40	0.208	J	60	0.210
	K	80	0.212												
Trichlorofluoromethane	A	0.10	0.386	B	0.20	0.443	C	0.50	0.471	D	1.0	0.528	E	2.0	0.459
	F	5.0	0.634	G	10	0.540	H	20	0.526	I	40	0.520	J	60	0.543
	K	80	0.562												
1,1-Dichloroethene	A	0.10	0.164	B	0.20	0.204	C	0.50	0.213	D	1.0	0.225	E	2.0	0.197
	F	5.0	0.264	G	10	0.224	H	20	0.218	I	40	0.223	J	60	0.236
	K	80	0.236												
Acetone				B	8.0	0.0487	C	20	0.0484	D	40	0.0477	E	80	0.0448
	F	100	0.0419	G	200	0.0490	H	400	0.0491	I	800	0.0462	J	1600	0.0496
	K	2000	0.0501												
Carbon Disulfide	A	0.10	0.541	B	0.20	0.611	C	0.50	0.695	D	1.0	0.695	E	2.0	0.624
	F	5.0	0.877	G	10	0.769	H	20	0.790	I	40	0.831	J	60	0.878
	K	80	0.884												
Methylene Chloride							C	0.50	0.411	D	1.0	0.356	E	2.0	0.289
	F	5.0	0.351	G	10	0.284	H	20	0.276	I	40	0.286	J	60	0.291
	K	80	0.293												

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Sealaska Environmental Services, LLC
 Project: TO 01 JBLM

Service Request: K1410529
 Calibration Date: 09/17/2014

Initial Calibration Summary
 Volatile Organic Compounds

Calibration ID: CAL13556
 Instrument ID: GC-MS 18

Column: MS

Analyte Name	Level			Level			Level			Level			Level		
	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF
Methyl tert-Butyl Ether	A	0.20	0.630	B	0.40	0.655	C	1.0	0.594	D	2.0	0.670	E	4.0	0.611
	F	10	0.796	G	20	0.669	H	40	0.696	I	80	0.692	J	120	0.738
	K	160	0.733												
trans-1,2-Dichloroethene	A	0.10	0.271	B	0.20	0.264	C	0.50	0.250	D	1.0	0.269	E	2.0	0.237
	F	5.0	0.317	G	10	0.270	H	20	0.266	I	40	0.280	J	60	0.285
	K	80	0.290												
1,1-Dichloroethane	A	0.10	0.421	B	0.20	0.438	C	0.50	0.478	D	1.0	0.468	E	2.0	0.416
	F	5.0	0.567	G	10	0.484	H	20	0.485	I	40	0.493	J	60	0.506
	K	80	0.506												
2,2-Dichloropropane				B	0.20	0.360	C	0.50	0.370	D	1.0	0.353	E	2.0	0.338
	F	5.0	0.445	G	10	0.385	H	20	0.384	I	40	0.406	J	60	0.425
	K	80	0.430												
cis-1,2-Dichloroethene				B	0.20	0.285	C	0.50	0.303	D	1.0	0.331	E	2.0	0.293
	F	5.0	0.361	G	10	0.311	H	20	0.323	I	40	0.334	J	60	0.335
	K	80	0.336												
2-Butanone (MEK)	A	4.0	0.0150	B	8.0	0.0185	C	20	0.0186	D	40	0.0196	E	80	0.0180
	F	100	0.0176	G	200	0.0203	H	400	0.0208	I	800	0.0199	J	1600	0.0222
	K	2000	0.0221												
Bromochloromethane				B	0.20	0.114	C	0.50	0.135	D	1.0	0.137	E	2.0	0.120
	F	5.0	0.167	G	10	0.143	H	20	0.144	I	40	0.141	J	60	0.136
	K	80	0.129												
Chloroform				B	0.20	0.444	C	0.50	0.485	D	1.0	0.488	E	2.0	0.439
	F	5.0	0.592	G	10	0.505	H	20	0.508	I	40	0.531	J	60	0.534
	K	80	0.535												
1,1,1-Trichloroethane (TCA)	A	0.10	0.316	B	0.20	0.347	C	0.50	0.398	D	1.0	0.402	E	2.0	0.354
	F	5.0	0.512	G	10	0.431	H	20	0.439	I	40	0.460	J	60	0.481
	K	80	0.483												
Carbon Tetrachloride	A	0.10	0.242	B	0.20	0.284	C	0.50	0.327	D	1.0	0.334	E	2.0	0.304
	F	5.0	0.434	G	10	0.372	H	20	0.375	I	40	0.398	J	60	0.412
	K	80	0.428												
1,1-Dichloropropene	A	0.10	0.288	B	0.20	0.342	C	0.50	0.367	D	1.0	0.372	E	2.0	0.346
	F	5.0	0.462	G	10	0.395	H	20	0.392	I	40	0.400	J	60	0.417
	K	80	0.412												
Benzene	A	0.10	1.11	B	0.20	1.22	C	0.50	1.21	D	1.0	1.20	E	2.0	1.11
	F	5.0	1.46	G	10	1.23	H	20	1.22	I	40	1.27	J	60	1.30
	K	80	1.30												

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† SPCC Compound

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Sealaska Environmental Services, LLC
 Project: TO 01 JBLM

Service Request: K1410529
 Calibration Date: 09/17/2014

Initial Calibration Summary
 Volatile Organic Compounds

Calibration ID: CAL13556
 Instrument ID: GC-MS 18

Column: MS

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
1,2-Dichloroethane (EDC)				B	0.20	0.373	C	0.50	0.367	D	1.0	0.378	E	2.0	0.355
	F	5.0	0.461	G	10	0.393	H	20	0.386	I	40	0.395	J	60	0.402
	K	80	0.400												
Trichloroethene (TCE)	A	0.10	0.220	B	0.20	0.275	C	0.50	0.247	D	1.0	0.294	E	2.0	0.254
	F	5.0	0.356	G	10	0.290	H	20	0.302	I	40	0.311	J	60	0.319
	K	80	0.312												
1,2-Dichloropropane				B	0.20	0.293	C	0.50	0.270	D	1.0	0.285	E	2.0	0.257
	F	5.0	0.344	G	10	0.303	H	20	0.301	I	40	0.318	J	60	0.320
	K	80	0.321												
Dibromomethane				B	0.20	0.143	C	0.50	0.139	D	1.0	0.155	E	2.0	0.152
	F	5.0	0.188	G	10	0.155	H	20	0.158	I	40	0.164	J	60	0.171
	K	80	0.171												
Bromodichloromethane	A	0.10	0.351	B	0.20	0.269	C	0.50	0.310	D	1.0	0.290	E	2.0	0.292
	F	5.0	0.404	G	10	0.349	H	20	0.368	I	40	0.394	J	60	0.402
	K	80	0.409												
cis-1,3-Dichloropropene	A	0.10	0.312	B	0.20	0.322	C	0.50	0.377	D	1.0	0.369	E	2.0	0.357
	F	5.0	0.494	G	10	0.442	H	20	0.463	I	40	0.494	J	60	0.506
	K	80	0.517												
4-Methyl-2-pentanone (MIBK)	A	4.0	0.0523	B	8.0	0.0585	C	20	0.0641	D	40	0.0650	E	80	0.0612
	F	100	0.0602	G	200	0.0712	H	400	0.0752	I	800	0.0714			
Toluene	A	0.10	0.798	B	0.20	0.776	C	0.50	0.743	D	1.0	0.784	E	2.0	0.714
	F	5.0	0.986	G	10	0.832	H	20	0.839	I	40	0.868	J	60	0.898
	K	80	0.898												
trans-1,3-Dichloropropene	A	0.10	0.675	B	0.20	0.627	C	0.50	0.745	D	1.0	0.742	E	2.0	0.670
	F	5.0	0.976	G	10	0.843	H	20	0.910	I	40	0.985	J	60	1.03
	K	80	1.06												
1,1,2-Trichloroethane	A	0.10	0.442	B	0.20	0.497	C	0.50	0.473	D	1.0	0.468	E	2.0	0.406
	F	5.0	0.552	G	10	0.467	H	20	0.482	I	40	0.491	J	60	0.503
	K	80	0.507												
Tetrachloroethene (PCE)	A	0.10	0.558	B	0.20	0.566	C	0.50	0.542	D	1.0	0.597	E	2.0	0.533
	F	5.0	0.709	G	10	0.615	H	20	0.620	I	40	0.664	J	60	0.665
	K	80	0.668												
2-Hexanone				B	8.0	0.0448	C	20	0.0496	D	40	0.0521	E	80	0.0494
	F	100	0.0488	G	200	0.0578	H	400	0.0598	I	800	0.0575			

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ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Sealaska Environmental Services, LLC
 Project: TO 01 JBLM

Service Request: K1410529
 Calibration Date: 09/17/2014

Initial Calibration Summary
 Volatile Organic Compounds

Calibration ID: CAL13556
 Instrument ID: GC-MS 18

Column: MS

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
1,3-Dichloropropane	A	0.10	0.849	B	0.20	1.02	C	0.50	0.977	D	1.0	1.07	E	2.0	0.914
	F	5.0	1.23	G	10	1.07	H	20	1.07	I	40	1.10	J	60	1.11
	K	80	1.11												
Dibromochloromethane				B	0.20	0.400	C	0.50	0.476	D	1.0	0.483	E	2.0	0.435
	F	5.0	0.634	G	10	0.560	H	20	0.611	I	40	0.679			
1,2-Dibromoethane (EDB)	A	0.10	0.456	B	0.20	0.477	C	0.50	0.527	D	1.0	0.498	E	2.0	0.456
	F	5.0	0.625	G	10	0.538	H	20	0.558	I	40	0.579	J	60	0.595
	K	80	0.598												
Chlorobenzene	A	0.10	1.90	B	0.20	1.90	C	0.50	2.10	D	1.0	2.18	E	2.0	1.92
	F	5.0	2.66	G	10	2.25	H	20	2.27	I	40	2.39	J	60	2.39
	K	80	2.40												
Ethylbenzene	A	0.10	0.858	B	0.20	1.01	C	0.50	1.16	D	1.0	1.19	E	2.0	1.05
	F	5.0	1.48	G	10	1.25	H	20	1.26	I	40	1.32	J	60	1.34
	K	80	1.36												
1,1,1,2-Tetrachloroethane	A	0.10	0.577	B	0.20	0.626	C	0.50	0.545	D	1.0	0.615	E	2.0	0.555
	F	5.0	0.796	G	10	0.715	H	20	0.735	I	40	0.805	J	60	0.822
	K	80	0.839												
m,p-Xylenes	A	0.20	1.19	B	0.40	1.29	C	1.0	1.37	D	2.0	1.41	E	4.0	1.24
	F	10	1.79	G	20	1.55	H	40	1.55	I	80	1.64	J	120	1.67
	K	160	1.68												
o-Xylene	A	0.10	1.31	B	0.20	1.26	C	0.50	1.33	D	1.0	1.39	E	2.0	1.21
	F	5.0	1.77	G	10	1.48	H	20	1.52	I	40	1.60	J	60	1.61
	K	80	1.62												
Styrene				B	0.20	0.804	C	0.50	0.950	D	1.0	0.928	E	2.0	0.864
	F	5.0	1.29	G	10	1.14	H	20	1.17	I	40	1.26	J	60	1.28
	K	80	1.29												
Bromoform							C	0.50	0.247	D	1.0	0.224	E	2.0	0.221
	F	5.0	0.316	G	10	0.285	H	20	0.323	I	40	0.361	J	60	0.399
Isopropylbenzene	A	0.10	2.85	B	0.20	3.09	C	0.50	3.29	D	1.0	3.56	E	2.0	3.17
	F	5.0	4.53	G	10	3.87	H	20	3.88	I	40	4.09	J	60	4.15
	K	80	4.20												
1,1,2,2-Tetrachloroethane				B	0.20	0.558	C	0.50	0.552	D	1.0	0.601	E	2.0	0.543
	F	5.0	0.735	G	10	0.632	H	20	0.613	I	40	0.623	J	60	0.642
	K	80	0.633												

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Sealaska Environmental Services, LLC
 Project: TO 01 JBLM

Service Request: K1410529
 Calibration Date: 09/17/2014

Initial Calibration Summary
 Volatile Organic Compounds

Calibration ID: CAL13556
 Instrument ID: GC-MS 18

Column: MS

Analyte Name	Level			Level			Level			Level			Level		
	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF	ID	Amt	RRF
Bromobenzene	A	0.10	0.812	B	0.20	0.899	C	0.50	0.960	D	1.0	0.903	E	2.0	0.868
	F	5.0	1.13	G	10	0.976	H	20	0.971	I	40	1.01	J	60	1.01
	K	80	0.989												
n-Propylbenzene				B	0.20	3.88	C	0.50	4.11	D	1.0	4.22	E	2.0	3.86
	F	5.0	5.45	G	10	4.65	H	20	4.53	I	40	4.71	J	60	4.73
	K	80	4.69												
1,2,3-Trichloropropane							C	0.50	0.224	D	1.0	0.223	E	2.0	0.183
	F	5.0	0.240	G	10	0.215	H	20	0.199	I	40	0.206	J	60	0.213
	K	80	0.209												
2-Chlorotoluene							C	0.50	2.65	D	1.0	2.73	E	2.0	2.46
	F	5.0	3.25	G	10	2.75	H	20	2.67	I	40	2.79	J	60	2.76
	K	80	2.72												
1,3,5-Trimethylbenzene	A	0.10	2.35	B	0.20	2.51	C	0.50	2.72	D	1.0	2.98	E	2.0	2.67
	F	5.0	3.85	G	10	3.32	H	20	3.24	I	40	3.42	J	60	3.42
	K	80	3.41												
4-Chlorotoluene	A	0.10	2.81	B	0.20	2.78	C	0.50	3.07	D	1.0	3.13	E	2.0	2.84
	F	5.0	3.83	G	10	3.25	H	20	3.19	I	40	3.32	J	60	3.31
	K	80	3.28												
tert-Butylbenzene	A	0.10	2.08	B	0.20	2.36	C	0.50	2.69	D	1.0	2.67	E	2.0	2.55
	F	5.0	3.48	G	10	3.00	H	20	2.89	I	40	3.01	J	60	3.01
	K	80	2.99												
1,2,4-Trimethylbenzene	A	0.10	2.49	B	0.20	2.52	C	0.50	2.78	D	1.0	2.96	E	2.0	2.69
	F	5.0	3.94	G	10	3.35	H	20	3.29	I	40	3.47	J	60	3.49
	K	80	3.47												
sec-Butylbenzene	A	0.10	3.19	B	0.20	3.27	C	0.50	3.52	D	1.0	3.80	E	2.0	3.39
	F	5.0	4.91	G	10	4.23	H	20	4.10	I	40	4.26	J	60	4.31
	K	80	4.31												
4-Isopropyltoluene				B	0.20	2.23	C	0.50	2.63	D	1.0	2.92	E	2.0	2.74
	F	5.0	4.05	G	10	3.50	H	20	3.42	I	40	3.61	J	60	3.64
	K	80	3.64												
1,3-Dichlorobenzene	A	0.10	1.82	B	0.20	1.65	C	0.50	1.76	D	1.0	1.80	E	2.0	1.58
	F	5.0	2.17	G	10	1.85	H	20	1.81	I	40	1.92	J	60	1.90
	K	80	1.90												
1,4-Dichlorobenzene				B	0.20	1.80	C	0.50	1.80	D	1.0	1.78	E	2.0	1.65
	F	5.0	2.22	G	10	1.91	H	20	1.87	I	40	1.95	J	60	1.96
	K	80	1.92												

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Sealaska Environmental Services, LLC
 Project: TO 01 JBLM

Service Request: K1410529
 Calibration Date: 09/17/2014

Initial Calibration Summary
 Volatile Organic Compounds

Calibration ID: CAL13556
 Instrument ID: GC-MS 18

Column: MS

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
n-Butylbenzene	A	0.10	2.53	B	0.20	2.24	C	0.50	2.42	D	1.0	2.50	E	2.0	2.27
	F	5.0	3.40	G	10	2.95	H	20	2.90	I	40	3.06	J	60	3.13
	K	80	3.16												
1,2-Dichlorobenzene	A	0.10	1.49	B	0.20	1.51	C	0.50	1.65	D	1.0	1.70	E	2.0	1.53
	F	5.0	2.04	G	10	1.75	H	20	1.71	I	40	1.79	J	60	1.80
	K	80	1.79												
1,2-Dibromo-3-chloropropane							C	0.50	0.0510	D	1.0	0.0643	E	2.0	0.0551
	F	5.0	0.0747	G	10	0.0690	H	20	0.0697	I	40	0.0787	J	60	0.0849
	K	80	0.0868												
1,2,4-Trichlorobenzene				B	0.20	1.10	C	0.50	0.881	D	1.0	0.869	E	2.0	0.782
	F	5.0	1.06	G	10	0.928	H	20	0.907	I	40	0.968	J	60	0.987
	K	80	0.991												
Hexachlorobutadiene				B	0.20	0.449	C	0.50	0.400	D	1.0	0.411	E	2.0	0.356
	F	5.0	0.470	G	10	0.403	H	20	0.393	I	40	0.427	J	60	0.435
	K	80	0.445												
Naphthalene				B	0.20	1.31	C	0.50	1.28	D	1.0	1.36	E	2.0	1.21
	F	5.0	1.75	G	10	1.53	H	20	1.54	I	40	1.64	J	60	1.72
	K	80	1.75												
1,2,3-Trichlorobenzene				B	0.20	0.637	C	0.50	0.651	D	1.0	0.685	E	2.0	0.558
	F	5.0	0.766	G	10	0.671	H	20	0.669	I	40	0.691	J	60	0.739
	K	80	0.741												
Dibromofluoromethane	A	10	0.213	B	10	0.215	C	10	0.205	D	10	0.212	E	10	0.221
	F	10	0.219	G	10	0.217	H	10	0.227	I	10	0.226	J	10	0.226
	K	10	0.233												
1,2-Dichloroethane-d4	A	10	0.263	B	10	0.265	C	10	0.252	D	10	0.260	E	10	0.262
	F	10	0.262	G	10	0.263	H	10	0.258	I	10	0.243	J	10	0.254
	K	10	0.261												
Toluene-d8	A	10	1.00	B	10	1.00	C	10	0.972	D	10	1.01	E	10	1.01
	F	10	0.988	G	10	1.02	H	10	1.02	I	10	1.02	J	10	1.03
	K	10	1.03												
4-Bromofluorobenzene	A	10	0.886	B	10	0.891	C	10	0.885	D	10	0.876	E	10	0.877
	F	10	0.897	G	10	0.907	H	10	0.910	I	10	0.925	J	10	0.935
	K	10	0.931												

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

Client: Sealaska Environmental Services, LLC
 Project: TO 01 JBLM

Service Request: K1410529
 Calibration Date: 09/17/2014

**Initial Calibration Summary
 Volatile Organic Compounds**

Calibration ID: CAL13556
 Instrument ID: GC-MS 18

Column: MS

Analyte Name	Compound Type	Calibration Evaluation					RRF Evaluation		
		Fit Type	Eval.	Eval. Result	Q	Control Criteria	Average RRF	Q	Minimum RRF
Dichlorodifluoromethane	MS	AverageRF	% RSD	13.1		≤20	0.341		0.100
Chloromethane	MS	AverageRF	% RSD	8.2		≤20	0.390		0.100
Vinyl Chloride	MS	AverageRF	% RSD	12.6		≤20	0.375		0.100
Bromomethane	MS	AverageRF	% RSD	19.7		≤20	0.286		0.100
Chloroethane	MS	AverageRF	% RSD	8.1		≤20	0.213		0.100
Trichlorofluoromethane	MS	AverageRF	% RSD	13.1		≤20	0.510		0.100
1,1-Dichloroethene	MS	AverageRF	% RSD	11.6		≤20	0.219		.100
Acetone	MS	AverageRF	% RSD	5.3		≤20	0.0476		0.01
Carbon Disulfide	MS	AverageRF	% RSD	16.1		≤20	0.745		0.100
Methylene Chloride	MS	AverageRF	% RSD	14.7		≤20	0.315		0.100
Methyl tert-Butyl Ether	MS	AverageRF	% RSD	8.8		≤20	0.680		0.100
trans-1,2-Dichloroethene	MS	AverageRF	% RSD	7.6		≤20	0.273		0.100
1,1-Dichloroethane	MS	AverageRF	% RSD	9.0		≤20	0.478		.200
2,2-Dichloropropane	MS	AverageRF	% RSD	9.2		≤20	0.390		0.01
cis-1,2-Dichloroethene	MS	AverageRF	% RSD	7.2		≤20	0.321		0.100
2-Butanone (MEK)	MS	AverageRF	% RSD	10.9		≤20	0.0193		0.01
Bromochloromethane	MS	AverageRF	% RSD	10.7		≤20	0.137		0.01
Chloroform	MS	AverageRF	% RSD	9.0		≤20	0.506		0.200
1,1,1-Trichloroethane (TCA)	MS	AverageRF	% RSD	14.9		≤20	0.420		.100
Carbon Tetrachloride	MS	AverageRF	% RSD	17.6		≤20	0.355		0.100
1,1-Dichloropropene	MS	AverageRF	% RSD	12.1		≤20	0.381		0.01
Benzene	MS	AverageRF	% RSD	7.7		≤20	1.24		0.500
1,2-Dichloroethane (EDC)	MS	AverageRF	% RSD	7.4		≤20	0.391		0.100
Trichloroethene (TCE)	MS	AverageRF	% RSD	13.2		≤20	0.289		0.200
1,2-Dichloropropane	MS	AverageRF	% RSD	8.7		≤20	0.301		0.100
Dibromomethane	MS	AverageRF	% RSD	9.0		≤20	0.160		0.01
Bromodichloromethane	MS	AverageRF	% RSD	14.8		≤20	0.349		0.200
cis-1,3-Dichloropropene	MS	AverageRF	% RSD	18.2		≤20	0.423		0.200
4-Methyl-2-pentanone (MIBK)	MS	AverageRF	% RSD	11.3		≤20	0.0643		0.01
Toluene	MS	AverageRF	% RSD	9.5		≤20	0.831		0.400
trans-1,3-Dichloropropene	MS	AverageRF	% RSD	18.6		≤20	0.841		0.100
1,1,2-Trichloroethane	MS	AverageRF	% RSD	7.9		≤20	0.481		.100
Tetrachloroethene (PCE)	MS	AverageRF	% RSD	9.6		≤20	0.613		0.200
2-Hexanone	MS	AverageRF	% RSD	10.1		≤20	0.0525		0.015
1,3-Dichloropropane	MS	AverageRF	% RSD	9.9		≤20	1.05		0.01
Dibromochloromethane	MS	AverageRF	% RSD	18.9		≤20	0.535		0.100
1,2-Dibromoethane (EDB)	MS	AverageRF	% RSD	11.1		≤20	0.537		0.100
Chlorobenzene	MS	AverageRF	% RSD	11.0		≤20	2.21		0.500
Ethylbenzene	MS	AverageRF	% RSD	14.8		≤20	1.21		0.100
1,1,1,2-Tetrachloroethane	MS	AverageRF	% RSD	16.4		≤20	0.694		.01
m,p-Xylenes	MS	AverageRF	% RSD	13.4		≤20	1.49		0.100
o-Xylene	MS	AverageRF	% RSD	12.0		≤20	1.46		0.300

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† SPCC Compound

‡ CCC Compound

Client: Sealaska Environmental Services, LLC
 Project: TO 01 JBLM

Service Request: K1410529
 Calibration Date: 09/17/2014

**Initial Calibration Summary
 Volatile Organic Compounds**

Calibration ID: CAL13556
 Instrument ID: GC-MS 18

Column: MS

Analyte Name	Compound Type	Calibration Evaluation					RRF Evaluation		
		Fit Type	Eval.	Eval. Result	Q	Control Criteria	Average RRF	Q	Minimum RRF
Styrene	MS	AverageRF	% RSD	17.5		≤20	1.10		0.300
Bromoform	MS	Quadratic(0,0)	COD	1.000		≥0.990	0.297		0.100
Isopropylbenzene	MS	AverageRF	% RSD	14.6		≤20	3.70		0.100
1,1,2,2-Tetrachloroethane	MS	AverageRF	% RSD	9.1		≤20	0.613		.300
Bromobenzene	MS	AverageRF	% RSD	8.8		≤20	0.956		0.01
n-Propylbenzene	MS	AverageRF	% RSD	10.7		≤20	4.48		0.01
1,2,3-Trichloropropane	MS	AverageRF	% RSD	7.6		≤20	0.212		0.01
2-Chlorotoluene	MS	AverageRF	% RSD	7.6		≤20	2.75		0.01
1,3,5-Trimethylbenzene	MS	AverageRF	% RSD	15.1		≤20	3.08		0.01
4-Chlorotoluene	MS	AverageRF	% RSD	9.5		≤20	3.16		0.01
tert-Butylbenzene	MS	AverageRF	% RSD	13.5		≤20	2.79		0.01
1,2,4-Trimethylbenzene	MS	AverageRF	% RSD	15.0		≤20	3.13		0.01
sec-Butylbenzene	MS	AverageRF	% RSD	13.8		≤20	3.94		0.01
4-Isopropyltoluene	MS	AverageRF	% RSD	17.7		≤20	3.24		0.01
1,3-Dichlorobenzene	MS	AverageRF	% RSD	8.3		≤20	1.83		0.600
1,4-Dichlorobenzene	MS	AverageRF	% RSD	8.0		≤20	1.88		0.500
n-Butylbenzene	MS	AverageRF	% RSD	14.4		≤20	2.78		0.01
1,2-Dichlorobenzene	MS	AverageRF	% RSD	9.4		≤20	1.71		0.400
1,2-Dibromo-3-chloropropane	MS	AverageRF	% RSD	17.5		≤20	0.0705		0.025
1,2,4-Trichlorobenzene	MS	AverageRF	% RSD	9.9		≤20	0.947		0.200
Hexachlorobutadiene	MS	AverageRF	% RSD	7.9		≤20	0.419		0.01
Naphthalene	MS	AverageRF	% RSD	13.7		≤20	1.51		0.01
1,2,3-Trichlorobenzene	MS	AverageRF	% RSD	8.8		≤20	0.681		0.01
Dibromofluoromethane	SURR	AverageRF	% RSD	3.6		≤20	0.219		0.01
1,2-Dichloroethane-d4	SURR	AverageRF	% RSD	2.5		≤20	0.258		0.01
Toluene-d8	SURR	AverageRF	% RSD	1.8		≤20	1.01		0.01
4-Bromofluorobenzene	SURR	AverageRF	% RSD	2.4		≤20	0.902		0.01

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† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Calibration Date: 09/17/2014
Date Analyzed: 09/17/2014 -
 09/18/2014

Second Source Calibration Verification
Volatile Organic Compounds

Calibration Type: Internal Standard
Analysis Method: 8260C

Calibration ID: CAL13556
Units: PPB

File ID: J:\MS18\DATA\091714\0917F021.D
 J:\MS18\DATA\091814\0918F003.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Dichlorodifluoromethane	10	9.7	0.341	0.331	-3	NA	± 30 %	AverageRF
Chloromethane	10	9.4	0.390	0.368	-6	NA	± 30 %	AverageRF
Vinyl Chloride	10	11	0.375	0.399	6	NA	± 30 %	AverageRF
Bromomethane	10	10	0.286	0.296	4	NA	± 30 %	AverageRF
Chloroethane	10	12	0.213	0.254	19	NA	± 30 %	AverageRF
Trichlorofluoromethane	10	9.4	0.510	0.477	-6	NA	± 30 %	AverageRF
1,1-Dichloroethene	10	12	0.219	0.257	17	NA	± 30 %	AverageRF
Acetone	50	51	0.0476	0.0487	2	NA	± 30 %	AverageRF
Carbon Disulfide	20	22	0.745	0.806	8	NA	± 30 %	AverageRF
Methylene Chloride	10	8.8	0.315	0.278	-12	NA	± 30 %	AverageRF
Methyl tert-Butyl Ether	10	9.9	0.680	0.671	-1	NA	± 30 %	AverageRF
trans-1,2-Dichloroethene	10	11	0.273	0.308	13	NA	± 30 %	AverageRF
1,1-Dichloroethane	10	11	0.478	0.549	15	NA	± 30 %	AverageRF
2,2-Dichloropropane	10	10	0.390	0.391	0	NA	± 30 %	AverageRF
cis-1,2-Dichloroethene	10	11	0.321	0.341	6	NA	± 30 %	AverageRF
2-Butanone (MEK)	50	55	0.0193	0.0211	9	NA	± 30 %	AverageRF
Bromochloromethane	10	10	0.137	0.136	0	NA	± 30 %	AverageRF
Chloroform	10	11	0.506	0.544	7	NA	± 30 %	AverageRF
1,1,1-Trichloroethane (TCA)	10	11	0.420	0.464	11	NA	± 30 %	AverageRF
Carbon Tetrachloride	10	11	0.355	0.396	11	NA	± 30 %	AverageRF
1,1-Dichloropropene	10	11	0.381	0.423	11	NA	± 30 %	AverageRF
Benzene	10	11	1.24	1.32	7	NA	± 30 %	AverageRF
1,2-Dichloroethane (EDC)	10	10	0.391	0.406	4	NA	± 30 %	AverageRF
Trichloroethene (TCE)	10	11	0.289	0.312	8	NA	± 30 %	AverageRF
1,2-Dichloropropane	10	10	0.301	0.309	3	NA	± 30 %	AverageRF
Dibromomethane	10	10	0.160	0.166	4	NA	± 30 %	AverageRF
Bromodichloromethane	10	11	0.349	0.371	6	NA	± 30 %	AverageRF
cis-1,3-Dichloropropene	10	11	0.423	0.456	8	NA	± 30 %	AverageRF
4-Methyl-2-pentanone (MIBK)	50	57	0.0643	0.0728	13	NA	± 30 %	AverageRF
Toluene	10	11	0.831	0.886	7	NA	± 30 %	AverageRF
trans-1,3-Dichloropropene	10	9.8	0.841	0.821	-2	NA	± 30 %	AverageRF
1,1,2-Trichloroethane	10	10	0.481	0.496	3	NA	± 30 %	AverageRF
Tetrachloroethene (PCE)	10	11	0.613	0.658	7	NA	± 30 %	AverageRF
2-Hexanone	50	54	0.0525	0.0571	9	NA	± 30 %	AverageRF
1,3-Dichloropropane	10	10	1.05	1.10	5	NA	± 30 %	AverageRF
Dibromochloromethane	10	11	0.535	0.601	12	NA	± 30 %	AverageRF
1,2-Dibromoethane (EDB)	10	11	0.537	0.565	5	NA	± 30 %	AverageRF
Chlorobenzene	10	11	2.21	2.39	8	NA	± 30 %	AverageRF
Ethylbenzene	10	11	1.21	1.31	9	NA	± 30 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Calibration Date: 09/17/2014
Date Analyzed: 09/17/2014 - 09/18/2014

Second Source Calibration Verification
Volatile Organic Compounds

Calibration Type: Internal Standard
Analysis Method: 8260C

Calibration ID: CAL13556
Units: PPB

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
1,1,1,2-Tetrachloroethane	10	11	0.694	0.735	6	NA	± 30 %	AverageRF
m,p-Xylenes	20	22	1.49	1.63	10	NA	± 30 %	AverageRF
o-Xylene	10	11	1.46	1.58	8	NA	± 30 %	AverageRF
Styrene	10	11	1.10	1.20	9	NA	± 30 %	AverageRF
Bromoform	10	10	0.297	0.312	NA	3	± 30 %	Quadratic(0,0)
Isopropylbenzene	10	11	3.70	4.03	9	NA	± 30 %	AverageRF
1,1,2,2-Tetrachloroethane	10	10	0.613	0.633	3	NA	± 30 %	AverageRF
Bromobenzene	10	11	0.956	1.03	8	NA	± 30 %	AverageRF
n-Propylbenzene	10	11	4.48	4.84	8	NA	± 30 %	AverageRF
1,2,3-Trichloropropane	10	10	0.212	0.214	1	NA	± 30 %	AverageRF
2-Chlorotoluene	10	11	2.75	2.92	6	NA	± 30 %	AverageRF
1,3,5-Trimethylbenzene	10	11	3.08	3.46	12	NA	± 30 %	AverageRF
4-Chlorotoluene	10	11	3.16	3.39	7	NA	± 30 %	AverageRF
tert-Butylbenzene	10	11	2.79	3.07	10	NA	± 30 %	AverageRF
1,2,4-Trimethylbenzene	10	11	3.13	3.47	11	NA	± 30 %	AverageRF
sec-Butylbenzene	10	11	3.94	4.22	7	NA	± 30 %	AverageRF
4-Isopropyltoluene	10	11	3.24	3.62	12	NA	± 30 %	AverageRF
1,3-Dichlorobenzene	10	11	1.83	1.99	8	NA	± 30 %	AverageRF
1,4-Dichlorobenzene	10	11	1.88	2.01	7	NA	± 30 %	AverageRF
n-Butylbenzene	10	11	2.78	3.04	9	NA	± 30 %	AverageRF
1,2-Dichlorobenzene	10	11	1.71	1.83	7	NA	± 30 %	AverageRF
1,2-Dibromo-3-chloropropane	10	10	0.0705	0.0706	0	NA	± 30 %	AverageRF
1,2,4-Trichlorobenzene	10	10	0.947	0.978	3	NA	± 30 %	AverageRF
Hexachlorobutadiene	10	10	0.419	0.437	4	NA	± 30 %	AverageRF
Naphthalene	10	10	1.51	1.55	3	NA	± 30 %	AverageRF
1,2,3-Trichlorobenzene	10	10	0.681	0.700	3	NA	± 30 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: Sealaska Environmental Services, LLC
 Project: TO 01 JBLM

Service Request: K1410529
 Date Analyzed: 10/03/2014

Continuing Calibration Verification Summary
 Volatile Organic Compounds

Calibration Type: Internal Standard
 Analysis Method: 8260C

Calibration Date: 09/17/2014
 Calibration ID: CAL13556
 Analysis Lot: KWG1413468
 Units: PPB

File ID: J:\MS18\DATA\100314\1003F008.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Dichlorodifluoromethane	10	11	0.100	0.341	0.369	8	NA	± 20	AverageRF
Chloromethane	10	13	0.100	0.390	0.517	32	*	NA	AverageRF
Vinyl Chloride	10	12	0.100	0.375	0.431	15	NA	± 20	AverageRF
Bromomethane	10	7.1	0.100	0.286	0.202	-29	*	NA	AverageRF
Chloroethane	10	11	0.100	0.213	0.227	6	NA	± 20	AverageRF
Trichlorofluoromethane	10	10	0.100	0.510	0.518	2	NA	± 20	AverageRF
1,1-Dichloroethene	10	9.9	.100	0.219	0.216	-1	NA	± 20	AverageRF
Acetone	200	210	0.01	0.0476	0.0510	7	NA	± 20	AverageRF
Carbon Disulfide	10	6.5	0.100	0.745	0.480	-36	*	NA	AverageRF
Methylene Chloride	10	9.6	0.100	0.315	0.303	-4	NA	± 20	AverageRF
Methyl tert-Butyl Ether	20	17	0.100	0.680	0.567	-17	NA	± 20	AverageRF
trans-1,2-Dichloroethene	10	9.8	0.100	0.273	0.266	-2	NA	± 20	AverageRF
1,1-Dichloroethane	10	10	.200	0.478	0.489	2	NA	± 20	AverageRF
2,2-Dichloropropane	10	6.7	0.01	0.390	0.262	-33	*	NA	AverageRF
cis-1,2-Dichloroethene	10	10	0.100	0.321	0.322	0	NA	± 20	AverageRF
2-Butanone (MEK)	200	200	0.01	0.0193	0.0194	0	NA	± 20	AverageRF
Bromochloromethane	10	11	0.01	0.137	0.143	5	NA	± 20	AverageRF
Chloroform	10	9.9	0.200	0.506	0.503	-1	NA	± 20	AverageRF
1,1,1-Trichloroethane (TCA)	10	8.9	.100	0.420	0.372	-11	NA	± 20	AverageRF
Carbon Tetrachloride	10	8.5	0.100	0.355	0.303	-15	NA	± 20	AverageRF
1,1-Dichloropropene	10	10	0.01	0.381	0.386	1	NA	± 20	AverageRF
Benzene	10	10	0.500	1.24	1.27	2	NA	± 20	AverageRF
1,2-Dichloroethane (EDC)	10	10	0.100	0.391	0.400	2	NA	± 20	AverageRF
Trichloroethene (TCE)	10	9.9	0.200	0.289	0.287	-1	NA	± 20	AverageRF
1,2-Dichloropropane	10	10	0.100	0.301	0.311	3	NA	± 20	AverageRF
Dibromomethane	10	10	0.01	0.160	0.160	1	NA	± 20	AverageRF
Bromodichloromethane	10	9.4	0.200	0.349	0.329	-6	NA	± 20	AverageRF
cis-1,3-Dichloropropene	10	9.1	0.200	0.423	0.384	-9	NA	± 20	AverageRF
4-Methyl-2-pentanone (MIBK)	200	210	0.01	0.0643	0.0684	6	NA	± 20	AverageRF
Toluene	10	10	0.400	0.831	0.830	0	NA	± 20	AverageRF
trans-1,3-Dichloropropene	10	8.1	0.100	0.841	0.678	-19	NA	± 20	AverageRF
1,1,2-Trichloroethane	10	10	.100	0.481	0.500	4	NA	± 20	AverageRF
Tetrachloroethene (PCE)	10	9.7	0.200	0.613	0.597	-3	NA	± 20	AverageRF
2-Hexanone	200	210	0.015	0.0525	0.0543	3	NA	± 20	AverageRF
1,3-Dichloropropane	10	10	0.01	1.05	1.09	4	NA	± 20	AverageRF
Dibromochloromethane	10	9.6	0.100	0.535	0.511	-5	NA	± 20	AverageRF
1,2-Dibromoethane (EDB)	10	9.6	0.100	0.537	0.516	-4	NA	± 20	AverageRF
Chlorobenzene	10	10	0.500	2.21	2.28	3	NA	± 20	AverageRF
Ethylbenzene	10	10	0.100	1.21	1.24	2	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Date Analyzed: 10/03/2014

Continuing Calibration Verification Summary
Volatile Organic Compounds

Calibration Type: Internal Standard
Analysis Method: 8260C

Calibration Date: 09/17/2014
Calibration ID: CAL13556
Analysis Lot: KWG1413468
Units: PPB

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
1,1,1,2-Tetrachloroethane	10	9.0	.01	0.694	0.624	-10	NA	± 20	AverageRF
m,p-Xylenes	20	21	0.100	1.49	1.53	3	NA	± 20	AverageRF
o-Xylene	10	10	0.300	1.46	1.47	1	NA	± 20	AverageRF
Styrene	10	10	0.300	1.10	1.15	5	NA	± 20	AverageRF
Bromoform	10	8.1	0.100	0.297	0.240	NA	-19	± 20	Quadratic(0,0)
Isopropylbenzene	10	10	0.100	3.70	3.78	2	NA	± 20	AverageRF
1,1,2,2-Tetrachloroethane	10	11	.300	0.613	0.666	9	NA	± 20	AverageRF
Bromobenzene	10	10	0.01	0.956	0.972	2	NA	± 20	AverageRF
n-Propylbenzene	10	11	0.01	4.48	4.77	6	NA	± 20	AverageRF
1,2,3-Trichloropropane	10	10	0.01	0.212	0.219	3	NA	± 20	AverageRF
2-Chlorotoluene	10	10	0.01	2.75	2.83	3	NA	± 20	AverageRF
1,3,5-Trimethylbenzene	10	11	0.01	3.08	3.29	7	NA	± 20	AverageRF
4-Chlorotoluene	10	11	0.01	3.16	3.35	6	NA	± 20	AverageRF
tert-Butylbenzene	10	10	0.01	2.79	2.90	4	NA	± 20	AverageRF
1,2,4-Trimethylbenzene	10	11	0.01	3.13	3.31	6	NA	± 20	AverageRF
sec-Butylbenzene	10	11	0.01	3.94	4.21	7	NA	± 20	AverageRF
4-Isopropyltoluene	10	11	0.01	3.24	3.42	6	NA	± 20	AverageRF
1,3-Dichlorobenzene	10	10	0.600	1.83	1.87	2	NA	± 20	AverageRF
1,4-Dichlorobenzene	10	10	0.500	1.88	1.90	1	NA	± 20	AverageRF
n-Butylbenzene	10	11	0.01	2.78	2.97	7	NA	± 20	AverageRF
1,2-Dichlorobenzene	10	10	0.400	1.71	1.76	3	NA	± 20	AverageRF
1,2-Dibromo-3-chloropropane	10	8.9	0.025	0.0705	0.0628	-11	NA	± 20	AverageRF
1,2,4-Trichlorobenzene	10	10	0.200	0.947	0.964	2	NA	± 20	AverageRF
Hexachlorobutadiene	10	9.6	0.01	0.419	0.403	-4	NA	± 20	AverageRF
Naphthalene	10	11	0.01	1.51	1.64	9	NA	± 20	AverageRF
1,2,3-Trichlorobenzene	10	11	0.01	0.681	0.736	8	NA	± 20	AverageRF
Dibromofluoromethane	10	10	0.01	0.219	0.220	0	NA	± 20	AverageRF
1,2-Dichloroethane-d4	10	10	0.01	0.258	0.263	2	NA	± 20	AverageRF
Toluene-d8	10	9.9	0.01	1.01	1.00	-1	NA	± 20	AverageRF
4-Bromofluorobenzene	10	9.9	0.01	0.902	0.895	-1	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Date Analyzed: 10/04/2014

Continuing Calibration Verification Summary
Volatile Organic Compounds

Calibration Type: Internal Standard
Analysis Method: 8260C

Calibration Date: 09/17/2014
Calibration ID: CAL13556
Analysis Lot: KWG1413485
Units: PPB

File ID: J:\MS18\DATA\100414\1004F009.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Dichlorodifluoromethane	10	9.1	0.100	0.341	0.311	-9	NA	± 20	AverageRF
Chloromethane	10	12	0.100	0.390	0.450	15	NA	± 20	AverageRF
Vinyl Chloride	10	10	0.100	0.375	0.393	5	NA	± 20	AverageRF
Bromomethane	10	7.6	0.100	0.286	0.217	-24	*	NA	AverageRF
Chloroethane	10	10	0.100	0.213	0.216	1	NA	± 20	AverageRF
Trichlorofluoromethane	10	9.4	0.100	0.510	0.480	-6	NA	± 20	AverageRF
1,1-Dichloroethene	10	9.6	.100	0.219	0.210	-4	NA	± 20	AverageRF
Acetone	200	230	0.01	0.0476	0.0553	16	NA	± 20	AverageRF
Carbon Disulfide	10	6.2	0.100	0.745	0.460	-38	*	NA	AverageRF
Methylene Chloride	10	10	0.100	0.315	0.317	0	NA	± 20	AverageRF
Methyl tert-Butyl Ether	20	19	0.100	0.680	0.647	-5	NA	± 20	AverageRF
trans-1,2-Dichloroethene	10	9.8	0.100	0.273	0.267	-2	NA	± 20	AverageRF
1,1-Dichloroethane	10	11	.200	0.478	0.504	5	NA	± 20	AverageRF
2,2-Dichloropropane	10	6.6	0.01	0.390	0.256	-34	*	NA	AverageRF
cis-1,2-Dichloroethene	10	9.9	0.100	0.321	0.319	-1	NA	± 20	AverageRF
2-Butanone (MEK)	200	230	0.01	0.0193	0.0221	14	NA	± 20	AverageRF
Bromochloromethane	10	10	0.01	0.137	0.142	4	NA	± 20	AverageRF
Chloroform	10	10	0.200	0.506	0.510	1	NA	± 20	AverageRF
1,1,1-Trichloroethane (TCA)	10	8.7	.100	0.420	0.364	-13	NA	± 20	AverageRF
Carbon Tetrachloride	10	8.4	0.100	0.355	0.299	-16	NA	± 20	AverageRF
1,1-Dichloropropene	10	10	0.01	0.381	0.383	1	NA	± 20	AverageRF
Benzene	10	10	0.500	1.24	1.27	3	NA	± 20	AverageRF
1,2-Dichloroethane (EDC)	10	11	0.100	0.391	0.437	12	NA	± 20	AverageRF
Trichloroethene (TCE)	10	10	0.200	0.289	0.296	3	NA	± 20	AverageRF
1,2-Dichloropropane	10	11	0.100	0.301	0.324	7	NA	± 20	AverageRF
Dibromomethane	10	11	0.01	0.160	0.174	9	NA	± 20	AverageRF
Bromodichloromethane	10	9.9	0.200	0.349	0.347	-1	NA	± 20	AverageRF
cis-1,3-Dichloropropene	10	9.8	0.200	0.423	0.415	-2	NA	± 20	AverageRF
4-Methyl-2-pentanone (MIBK)	200	240	0.01	0.0643	0.0783	22	*	NA	AverageRF
Toluene	10	10	0.400	0.831	0.861	4	NA	± 20	AverageRF
trans-1,3-Dichloropropene	10	8.7	0.100	0.841	0.734	-13	NA	± 20	AverageRF
1,1,2-Trichloroethane	10	11	.100	0.481	0.522	9	NA	± 20	AverageRF
Tetrachloroethene (PCE)	10	9.3	0.200	0.613	0.570	-7	NA	± 20	AverageRF
2-Hexanone	200	230	0.015	0.0525	0.0616	17	NA	± 20	AverageRF
1,3-Dichloropropane	10	11	0.01	1.05	1.20	15	NA	± 20	AverageRF
Dibromochloromethane	10	10	0.100	0.535	0.543	2	NA	± 20	AverageRF
1,2-Dibromoethane (EDB)	10	11	0.100	0.537	0.582	8	NA	± 20	AverageRF
Chlorobenzene	10	10	0.500	2.21	2.31	5	NA	± 20	AverageRF
Ethylbenzene	10	10	0.100	1.21	1.24	2	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: Sealaska Environmental Services, LLC
 Project: TO 01 JBLM

Service Request: K1410529
 Date Analyzed: 10/04/2014

Continuing Calibration Verification Summary
 Volatile Organic Compounds

Calibration Type: Internal Standard
 Analysis Method: 8260C

Calibration Date: 09/17/2014
 Calibration ID: CAL13556
 Analysis Lot: KWG1413485
 Units: PPB

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
1,1,1,2-Tetrachloroethane	10	9.6	.01	0.694	0.664	-4	NA	± 20	AverageRF
m,p-Xylenes	20	21	0.100	1.49	1.54	4	NA	± 20	AverageRF
o-Xylene	10	10	0.300	1.46	1.48	1	NA	± 20	AverageRF
Styrene	10	11	0.300	1.10	1.19	9	NA	± 20	AverageRF
Bromoform	10	9.3	0.100	0.297	0.278	NA	-7	± 20	Quadratic(0,0)
Isopropylbenzene	10	10	0.100	3.70	3.82	3	NA	± 20	AverageRF
1,1,2,2-Tetrachloroethane	10	12	.300	0.613	0.749	22	*	± 20	AverageRF
Bromobenzene	10	10	0.01	0.956	0.997	4	NA	± 20	AverageRF
n-Propylbenzene	10	11	0.01	4.48	4.73	6	NA	± 20	AverageRF
1,2,3-Trichloropropane	10	11	0.01	0.212	0.244	15	NA	± 20	AverageRF
2-Chlorotoluene	10	10	0.01	2.75	2.88	5	NA	± 20	AverageRF
1,3,5-Trimethylbenzene	10	11	0.01	3.08	3.34	8	NA	± 20	AverageRF
4-Chlorotoluene	10	11	0.01	3.16	3.38	7	NA	± 20	AverageRF
tert-Butylbenzene	10	10	0.01	2.79	2.86	2	NA	± 20	AverageRF
1,2,4-Trimethylbenzene	10	11	0.01	3.13	3.41	9	NA	± 20	AverageRF
sec-Butylbenzene	10	10	0.01	3.94	4.09	4	NA	± 20	AverageRF
4-Isopropyltoluene	10	11	0.01	3.24	3.41	5	NA	± 20	AverageRF
1,3-Dichlorobenzene	10	11	0.600	1.83	1.94	6	NA	± 20	AverageRF
1,4-Dichlorobenzene	10	11	0.500	1.88	2.00	6	NA	± 20	AverageRF
n-Butylbenzene	10	11	0.01	2.78	2.98	7	NA	± 20	AverageRF
1,2-Dichlorobenzene	10	11	0.400	1.71	1.81	6	NA	± 20	AverageRF
1,2-Dibromo-3-chloropropane	10	9.3	0.025	0.0705	0.0654	-7	NA	± 20	AverageRF
1,2,4-Trichlorobenzene	10	11	0.200	0.947	1.02	7	NA	± 20	AverageRF
Hexachlorobutadiene	10	9.9	0.01	0.419	0.416	-1	NA	± 20	AverageRF
Naphthalene	10	12	0.01	1.51	1.79	18	NA	± 20	AverageRF
1,2,3-Trichlorobenzene	10	11	0.01	0.681	0.770	13	NA	± 20	AverageRF
Dibromofluoromethane	10	9.9	0.01	0.219	0.216	-2	NA	± 20	AverageRF
1,2-Dichloroethane-d4	10	11	0.01	0.258	0.273	6	NA	± 20	AverageRF
Toluene-d8	10	10	0.01	1.01	1.02	1	NA	± 20	AverageRF
4-Bromofluorobenzene	10	9.9	0.01	0.902	0.893	-1	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Date Analyzed: 10/06/2014

Continuing Calibration Verification Summary
Volatile Organic Compounds

Calibration Type: Internal Standard
Analysis Method: 8260C

Calibration Date: 09/17/2014
Calibration ID: CAL13556
Analysis Lot: KWG1413506
Units: PPB

File ID: J:\MS18\DATA\100614\1006F003.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Dichlorodifluoromethane	10	9.8	0.100	0.341	0.334	-2	NA	± 20	AverageRF
Chloromethane	10	11	0.100	0.390	0.440	13	NA	± 20	AverageRF
Vinyl Chloride	10	12	0.100	0.375	0.438	17	NA	± 20	AverageRF
Bromomethane	10	8.7	0.100	0.286	0.248	-13	NA	± 20	AverageRF
Chloroethane	10	11	0.100	0.213	0.234	10	NA	± 20	AverageRF
Trichlorofluoromethane	10	11	0.100	0.510	0.537	5	NA	± 20	AverageRF
1,1-Dichloroethene	10	10	.100	0.219	0.221	1	NA	± 20	AverageRF
Acetone	200	250	0.01	0.0476	0.0587	23	*	NA	AverageRF
Carbon Disulfide	10	7.0	0.100	0.745	0.520	-30	*	NA	AverageRF
Methylene Chloride	10	10	0.100	0.315	0.324	3	NA	± 20	AverageRF
Methyl tert-Butyl Ether	20	18	0.100	0.680	0.614	-10	NA	± 20	AverageRF
trans-1,2-Dichloroethene	10	10	0.100	0.273	0.274	1	NA	± 20	AverageRF
1,1-Dichloroethane	10	11	.200	0.478	0.509	6	NA	± 20	AverageRF
2,2-Dichloropropane	10	7.5	0.01	0.390	0.291	-25	*	NA	AverageRF
cis-1,2-Dichloroethene	10	10	0.100	0.321	0.333	4	NA	± 20	AverageRF
2-Butanone (MEK)	200	230	0.01	0.0193	0.0227	17	NA	± 20	AverageRF
Bromochloromethane	10	11	0.01	0.137	0.144	5	NA	± 20	AverageRF
Chloroform	10	11	0.200	0.506	0.543	7	NA	± 20	AverageRF
1,1,1-Trichloroethane (TCA)	10	9.3	.100	0.420	0.392	-7	NA	± 20	AverageRF
Carbon Tetrachloride	10	9.5	0.100	0.355	0.339	-5	NA	± 20	AverageRF
1,1-Dichloropropene	10	11	0.01	0.381	0.400	5	NA	± 20	AverageRF
Benzene	10	11	0.500	1.24	1.31	5	NA	± 20	AverageRF
1,2-Dichloroethane (EDC)	10	11	0.100	0.391	0.414	6	NA	± 20	AverageRF
Trichloroethene (TCE)	10	11	0.200	0.289	0.314	8	NA	± 20	AverageRF
1,2-Dichloropropane	10	11	0.100	0.301	0.321	6	NA	± 20	AverageRF
Dibromomethane	10	11	0.01	0.160	0.170	7	NA	± 20	AverageRF
Bromodichloromethane	10	10	0.200	0.349	0.357	2	NA	± 20	AverageRF
cis-1,3-Dichloropropene	10	9.9	0.200	0.423	0.418	-1	NA	± 20	AverageRF
4-Methyl-2-pentanone (MIBK)	200	250	0.01	0.0643	0.0807	25	*	NA	AverageRF
Toluene	10	11	0.400	0.831	0.876	5	NA	± 20	AverageRF
trans-1,3-Dichloropropene	10	8.7	0.100	0.841	0.729	-13	NA	± 20	AverageRF
1,1,2-Trichloroethane	10	10	.100	0.481	0.501	4	NA	± 20	AverageRF
Tetrachloroethene (PCE)	10	9.8	0.200	0.613	0.601	-2	NA	± 20	AverageRF
2-Hexanone	200	240	0.015	0.0525	0.0629	20	NA	± 20	AverageRF
1,3-Dichloropropane	10	11	0.01	1.05	1.17	12	NA	± 20	AverageRF
Dibromochloromethane	10	10	0.100	0.535	0.553	3	NA	± 20	AverageRF
1,2-Dibromoethane (EDB)	10	10	0.100	0.537	0.548	2	NA	± 20	AverageRF
Chlorobenzene	10	11	0.500	2.21	2.35	6	NA	± 20	AverageRF
Ethylbenzene	10	11	0.100	1.21	1.28	6	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Date Analyzed: 10/06/2014

Continuing Calibration Verification Summary
Volatile Organic Compounds

Calibration Type: Internal Standard
Analysis Method: 8260C

Calibration Date: 09/17/2014
Calibration ID: CAL13556
Analysis Lot: KWG1413506
Units: PPB

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
1,1,1,2-Tetrachloroethane	10	9.3	.01	0.694	0.648	-7	NA	± 20	AverageRF
m,p-Xylenes	20	21	0.100	1.49	1.60	7	NA	± 20	AverageRF
o-Xylene	10	10	0.300	1.46	1.53	4	NA	± 20	AverageRF
Styrene	10	10	0.300	1.10	1.13	3	NA	± 20	AverageRF
Bromoform	10	9.0	0.100	0.297	0.269	NA	-10	± 20	Quadratic(0,0)
Isopropylbenzene	10	11	0.100	3.70	3.96	7	NA	± 20	AverageRF
1,1,2,2-Tetrachloroethane	10	12	.300	0.613	0.709	16	NA	± 20	AverageRF
Bromobenzene	10	10	0.01	0.956	1.00	5	NA	± 20	AverageRF
n-Propylbenzene	10	11	0.01	4.48	5.02	12	NA	± 20	AverageRF
1,2,3-Trichloropropane	10	10	0.01	0.212	0.222	5	NA	± 20	AverageRF
2-Chlorotoluene	10	11	0.01	2.75	2.95	7	NA	± 20	AverageRF
1,3,5-Trimethylbenzene	10	11	0.01	3.08	3.45	12	NA	± 20	AverageRF
4-Chlorotoluene	10	11	0.01	3.16	3.48	10	NA	± 20	AverageRF
tert-Butylbenzene	10	11	0.01	2.79	3.06	9	NA	± 20	AverageRF
1,2,4-Trimethylbenzene	10	11	0.01	3.13	3.50	12	NA	± 20	AverageRF
sec-Butylbenzene	10	11	0.01	3.94	4.39	11	NA	± 20	AverageRF
4-Isopropyltoluene	10	11	0.01	3.24	3.55	10	NA	± 20	AverageRF
1,3-Dichlorobenzene	10	11	0.600	1.83	1.96	7	NA	± 20	AverageRF
1,4-Dichlorobenzene	10	11	0.500	1.88	1.99	5	NA	± 20	AverageRF
n-Butylbenzene	10	11	0.01	2.78	3.06	10	NA	± 20	AverageRF
1,2-Dichlorobenzene	10	11	0.400	1.71	1.83	7	NA	± 20	AverageRF
1,2-Dibromo-3-chloropropane	10	9.5	0.025	0.0705	0.0670	-5	NA	± 20	AverageRF
1,2,4-Trichlorobenzene	10	10	0.200	0.947	0.972	3	NA	± 20	AverageRF
Hexachlorobutadiene	10	10	0.01	0.419	0.425	2	NA	± 20	AverageRF
Naphthalene	10	11	0.01	1.51	1.65	9	NA	± 20	AverageRF
1,2,3-Trichlorobenzene	10	11	0.01	0.681	0.725	6	NA	± 20	AverageRF
Dibromofluoromethane	10	10	0.01	0.219	0.221	1	NA	± 20	AverageRF
1,2-Dichloroethane-d4	10	11	0.01	0.258	0.277	7	NA	± 20	AverageRF
Toluene-d8	10	10	0.01	1.01	1.02	1	NA	± 20	AverageRF
4-Bromofluorobenzene	10	10	0.01	0.902	0.909	1	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM

Service Request: K1410529
Date Analyzed: 10/06/2014

Continuing Calibration Verification Summary
Volatile Organic Compounds

Calibration Type: Internal Standard
Analysis Method: 8260C

Calibration Date: 09/17/2014
Calibration ID: CAL13556
Analysis Lot: KWG1413536
Units: PPB

File ID: J:\MS18\DATA\100614\1006F035.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Dichlorodifluoromethane	10	8.5	0.100	0.341	0.289	-15	NA	± 20	AverageRF
Chloromethane	10	10	0.100	0.390	0.405	4	NA	± 20	AverageRF
Vinyl Chloride	10	11	0.100	0.375	0.403	7	NA	± 20	AverageRF
Bromomethane	10	9.2	0.100	0.286	0.262	-8	NA	± 20	AverageRF
Chloroethane	10	11	0.100	0.213	0.230	8	NA	± 20	AverageRF
Trichlorofluoromethane	10	9.9	0.100	0.510	0.503	-1	NA	± 20	AverageRF
1,1-Dichloroethene	10	9.6	.100	0.219	0.210	-4	NA	± 20	AverageRF
Acetone	200	270	0.01	0.0476	0.0646	36	*	NA	AverageRF
Carbon Disulfide	10	6.0	0.100	0.745	0.449	-40	*	NA	AverageRF
Methylene Chloride	10	9.4	0.100	0.315	0.295	-6	NA	± 20	AverageRF
Methyl tert-Butyl Ether	20	17	0.100	0.680	0.583	-14	NA	± 20	AverageRF
trans-1,2-Dichloroethene	10	9.8	0.100	0.273	0.268	-2	NA	± 20	AverageRF
1,1-Dichloroethane	10	10	.200	0.478	0.490	2	NA	± 20	AverageRF
2,2-Dichloropropane	10	5.6	0.01	0.390	0.216	-45	*	NA	AverageRF
cis-1,2-Dichloroethene	10	9.5	0.100	0.321	0.305	-5	NA	± 20	AverageRF
2-Butanone (MEK)	200	260	0.01	0.0193	0.0247	28	*	NA	AverageRF
Bromochloromethane	10	10	0.01	0.137	0.137	0	NA	± 20	AverageRF
Chloroform	10	10	0.200	0.506	0.505	0	NA	± 20	AverageRF
1,1,1-Trichloroethane (TCA)	10	8.6	.100	0.420	0.360	-14	NA	± 20	AverageRF
Carbon Tetrachloride	10	8.7	0.100	0.355	0.308	-13	NA	± 20	AverageRF
1,1-Dichloropropene	10	10	0.01	0.381	0.399	5	NA	± 20	AverageRF
Benzene	10	10	0.500	1.24	1.24	0	NA	± 20	AverageRF
1,2-Dichloroethane (EDC)	10	11	0.100	0.391	0.419	7	NA	± 20	AverageRF
Trichloroethene (TCE)	10	10	0.200	0.289	0.301	4	NA	± 20	AverageRF
1,2-Dichloropropane	10	10	0.100	0.301	0.304	1	NA	± 20	AverageRF
Dibromomethane	10	10	0.01	0.160	0.165	3	NA	± 20	AverageRF
Bromodichloromethane	10	9.5	0.200	0.349	0.331	-5	NA	± 20	AverageRF
cis-1,3-Dichloropropene	10	8.7	0.200	0.423	0.366	-13	NA	± 20	AverageRF
4-Methyl-2-pentanone (MIBK)	200	280	0.01	0.0643	0.0913	42	*	NA	AverageRF
Toluene	10	10	0.400	0.831	0.838	1	NA	± 20	AverageRF
trans-1,3-Dichloropropene	10	7.2	0.100	0.841	0.603	-28	*	NA	AverageRF
1,1,2-Trichloroethane	10	10	.100	0.481	0.488	1	NA	± 20	AverageRF
Tetrachloroethene (PCE)	10	9.2	0.200	0.613	0.563	-8	NA	± 20	AverageRF
2-Hexanone	200	260	0.015	0.0525	0.0693	32	*	NA	AverageRF
1,3-Dichloropropane	10	11	0.01	1.05	1.14	9	NA	± 20	AverageRF
Dibromochloromethane	10	9.2	0.100	0.535	0.490	-8	NA	± 20	AverageRF
1,2-Dibromoethane (EDB)	10	9.7	0.100	0.537	0.521	-3	NA	± 20	AverageRF
Chlorobenzene	10	9.8	0.500	2.21	2.17	-2	NA	± 20	AverageRF
Ethylbenzene	10	9.9	0.100	1.21	1.20	-1	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

QA/QC Results

Client: Sealaska Environmental Services, LLC
 Project: TO 01 JBLM

Service Request: K1410529
 Date Analyzed: 10/06/2014

Continuing Calibration Verification Summary
 Volatile Organic Compounds

Calibration Type: Internal Standard
 Analysis Method: 8260C

Calibration Date: 09/17/2014
 Calibration ID: CAL13556
 Analysis Lot: KWG1413536
 Units: PPB

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
1,1,1,2-Tetrachloroethane	10	8.8	.01	0.694	0.608	-12	NA	± 20	AverageRF
m,p-Xylenes	20	20	0.100	1.49	1.47	-2	NA	± 20	AverageRF
o-Xylene	10	9.7	0.300	1.46	1.42	-3	NA	± 20	AverageRF
Styrene	10	9.6	0.300	1.10	1.05	-4	NA	± 20	AverageRF
Bromoform	10	8.3	0.100	0.297	0.247	NA	-17	± 20	Quadratic(0,0)
Isopropylbenzene	10	9.9	0.100	3.70	3.67	-1	NA	± 20	AverageRF
1,1,2,2-Tetrachloroethane	10	12	.300	0.613	0.724	18	NA	± 20	AverageRF
Bromobenzene	10	9.8	0.01	0.956	0.940	-2	NA	± 20	AverageRF
n-Propylbenzene	10	10	0.01	4.48	4.67	4	NA	± 20	AverageRF
1,2,3-Trichloropropane	10	11	0.01	0.212	0.228	8	NA	± 20	AverageRF
2-Chlorotoluene	10	10	0.01	2.75	2.78	1	NA	± 20	AverageRF
1,3,5-Trimethylbenzene	10	11	0.01	3.08	3.25	5	NA	± 20	AverageRF
4-Chlorotoluene	10	10	0.01	3.16	3.24	2	NA	± 20	AverageRF
tert-Butylbenzene	10	10	0.01	2.79	2.89	3	NA	± 20	AverageRF
1,2,4-Trimethylbenzene	10	11	0.01	3.13	3.30	5	NA	± 20	AverageRF
sec-Butylbenzene	10	11	0.01	3.94	4.14	5	NA	± 20	AverageRF
4-Isopropyltoluene	10	10	0.01	3.24	3.34	3	NA	± 20	AverageRF
1,3-Dichlorobenzene	10	9.9	0.600	1.83	1.82	-1	NA	± 20	AverageRF
1,4-Dichlorobenzene	10	10	0.500	1.88	1.89	0	NA	± 20	AverageRF
n-Butylbenzene	10	10	0.01	2.78	2.85	2	NA	± 20	AverageRF
1,2-Dichlorobenzene	10	10	0.400	1.71	1.72	1	NA	± 20	AverageRF
1,2-Dibromo-3-chloropropane	10	8.8	0.025	0.0705	0.0622	-12	NA	± 20	AverageRF
1,2,4-Trichlorobenzene	10	9.9	0.200	0.947	0.939	-1	NA	± 20	AverageRF
Hexachlorobutadiene	10	9.3	0.01	0.419	0.389	-7	NA	± 20	AverageRF
Naphthalene	10	11	0.01	1.51	1.72	14	NA	± 20	AverageRF
1,2,3-Trichlorobenzene	10	10	0.01	0.681	0.712	5	NA	± 20	AverageRF
Dibromofluoromethane	10	10	0.01	0.219	0.222	1	NA	± 20	AverageRF
1,2-Dichloroethane-d4	10	11	0.01	0.258	0.276	7	NA	± 20	AverageRF
Toluene-d8	10	10	0.01	1.01	1.03	2	NA	± 20	AverageRF
4-Bromofluorobenzene	10	9.8	0.01	0.902	0.883	-2	NA	± 20	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

Client: Sealaska Environmental Services, LLC
 Project: TO 01 JBLM

Service Request: K1410529

Analysis Run Log
 Volatile Organic Compounds

Analysis Method: 8260C

Analysis Lot: KWG1413468
 Instrument ID: GC-MS 18

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
1003F006.D	GC/MS Tuning - Bromofluorobenzene	KWG1413468-1	10/3/2014	14:35		10/3/2014	14:51
1003F008.D	Continuing Calibration Verification	KWG1413468-2	10/3/2014	15:41		10/3/2014	15:57
1003F009.D	Lab Control Sample	KWG1413475-3	10/3/2014	16:02		10/3/2014	16:18
1003F010.D	AOC14092295A172MS	KWG1413475-1	10/3/2014	16:31		10/3/2014	16:47
1003F011.D	AOC14092295A172DMS	KWG1413475-2	10/3/2014	16:52		10/3/2014	17:08
1003F012.D	ZZZZZZ	ZZZZZZ	10/3/2014	17:13		10/3/2014	17:29
1003F013.D	ZZZZZZ	ZZZZZZ	10/3/2014	17:34		10/3/2014	17:50
1003F015.D	Method Blank	KWG1413475-4	10/3/2014	18:17		10/3/2014	18:33
1003F016.D	TB-140922	K1410529-031	10/3/2014	18:38		10/3/2014	18:54
1003F017.D	ZZZZZZ	ZZZZZZ	10/3/2014	19:00		10/3/2014	19:16
1003F018.D	AOC14092295A172	K1410529-034	10/3/2014	19:21		10/3/2014	19:37
1003F019.D	ZZZZZZ	ZZZZZZ	10/3/2014	19:42		10/3/2014	19:58
1003F020.D	ZZZZZZ	ZZZZZZ	10/3/2014	20:03		10/3/2014	20:19
1003F021.D	ZZZZZZ	ZZZZZZ	10/3/2014	20:25		10/3/2014	20:41
1003F022.D	ZZZZZZ	ZZZZZZ	10/3/2014	20:46		10/3/2014	21:02
1003F023.D	ZZZZZZ	ZZZZZZ	10/3/2014	21:07		10/3/2014	21:23
1003F024.D	ZZZZZZ	ZZZZZZ	10/3/2014	21:30		10/3/2014	21:46
1003F025.D	ZZZZZZ	ZZZZZZ	10/3/2014	21:51		10/3/2014	22:07
1003F026.D	ZZZZZZ	ZZZZZZ	10/3/2014	22:13		10/3/2014	22:29
1003F027.D	ZZZZZZ	ZZZZZZ	10/3/2014	22:34		10/3/2014	22:50
1003F028.D	ZZZZZZ	ZZZZZZ	10/3/2014	22:55		10/3/2014	23:11
1003F029.D	ZZZZZZ	ZZZZZZ	10/3/2014	23:16		10/3/2014	23:32
1003F030.D	ZZZZZZ	ZZZZZZ	10/3/2014	23:38		10/3/2014	23:54
1003F031.D	ZZZZZZ	ZZZZZZ	10/3/2014	23:59		10/4/2014	00:15
1003F032.D	ZZZZZZ	ZZZZZZ	10/4/2014	00:20		10/4/2014	00:36
1003F033.D	ZZZZZZ	ZZZZZZ	10/4/2014	00:42		10/4/2014	00:58
1003F034.D	AOC14092210A178	K1410529-032	10/4/2014	01:03		10/4/2014	01:19
1003F035.D	AOC140922DUP2	K1410529-033	10/4/2014	01:24		10/4/2014	01:40
1003F036.D	AOC140922DUP2	K1410529-033	10/4/2014	01:46		10/4/2014	02:02
1003F037.D	AOC14092210A178	K1410529-032	10/4/2014	02:07		10/4/2014	02:23

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Client: Sealaska Environmental Services, LLC
 Project: TO 01 JBLM

Service Request: K1410529

Analysis Run Log
 Volatile Organic Compounds

Analysis Method: 8260C

Analysis Lot: KWG1413485
 Instrument ID: GC-MS 18

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
1004F007.D	GC/MS Tuning - Bromofluorobenzene	KWG1413485-1	10/4/2014	12:16		10/4/2014	12:32
1004F009.D	Continuing Calibration Verification	KWG1413485-3	10/4/2014	13:04		10/4/2014	13:20
1004F010.D	Lab Control Sample	KWG1413488-3	10/4/2014	13:38		10/4/2014	13:54
1004F011.D	ZZZZZZ	ZZZZZZ	10/4/2014	13:59		10/4/2014	14:15
1004F012.D	ZZZZZZ	ZZZZZZ	10/4/2014	14:20		10/4/2014	14:36
1004F015.D	Method Blank	KWG1413488-4	10/4/2014	15:24		10/4/2014	15:40
1004F016.D	ZZZZZZ	ZZZZZZ	10/4/2014	15:45		10/4/2014	16:01
1004F017.D	TB-140923	K1410529-001	10/4/2014	16:06		10/4/2014	16:22
1004F018.D	LGC140923LC135-1	K1410529-002	10/4/2014	16:28		10/4/2014	16:44
1004F019.D	LGC140923LC10830-1	K1410529-003	10/4/2014	16:49		10/4/2014	17:05
1004F020.D	LGC140923LC10860-1	K1410529-004	10/4/2014	17:10		10/4/2014	17:26
1004F021.D	LGC140923LC10885-1	K1410529-005	10/4/2014	17:31		10/4/2014	17:47
1004F022.D	LGC140923MT4-1	K1410529-006	10/4/2014	17:53		10/4/2014	18:09
1004F023.D	LGC140923MT3-1	K1410529-007	10/4/2014	18:14		10/4/2014	18:30
1004F024.D	LGC140923MT2-1	K1410529-008	10/4/2014	18:37		10/4/2014	18:53
1004F025.D	LGC140923MT1-1	K1410529-009	10/4/2014	18:58		10/4/2014	19:14
1004F026.D	AOC14092307A177	K1410529-035	10/4/2014	19:20		10/4/2014	19:36
1004F027.D	ZZZZZZ	ZZZZZZ	10/4/2014	19:41		10/4/2014	19:57
1004F028.D	ZZZZZZ	ZZZZZZ	10/4/2014	20:02		10/4/2014	20:18
1004F029.D	ZZZZZZ	ZZZZZZ	10/4/2014	20:24		10/4/2014	20:40
1004F030.D	ZZZZZZ	ZZZZZZ	10/4/2014	20:45		10/4/2014	21:01
1004F031.D	ZZZZZZ	ZZZZZZ	10/4/2014	21:06		10/4/2014	21:22
1004F032.D	AOC14092395A173A	K1410529-036	10/4/2014	21:27		10/4/2014	21:43
1004F033.D	ZZZZZZ	ZZZZZZ	10/4/2014	21:49		10/4/2014	22:05
1004F034.D	AOC140922DUP2	K1410529-033	10/4/2014	22:10		10/4/2014	22:26
1004F035.D	ZZZZZZ	ZZZZZZ	10/4/2014	22:31		10/4/2014	22:47
1004F036.D	ZZZZZZ	ZZZZZZ	10/4/2014	22:53		10/4/2014	23:09
1004F037.D	ZZZZZZ	ZZZZZZ	10/4/2014	23:14		10/4/2014	23:30
1004F038.D	ZZZZZZ	ZZZZZZ	10/4/2014	23:36		10/4/2014	23:52
1004F039.D	ZZZZZZ	ZZZZZZ	10/4/2014	23:57		10/5/2014	00:13

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Sealaska Environmental Services, LLC
 Project: TO 01 JBLM

Service Request: K1410529

Analysis Run Log
Volatile Organic Compounds

Analysis Method: 8260C

Analysis Lot: KWG1413506
 Instrument ID: GC-MS 18

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
1006F002.D	GC/MS Tuning - Bromofluorobenzene	KWG1413506-1	10/6/2014	08:58		10/6/2014	09:14
1006F003.D	Continuing Calibration Verification	KWG1413506-2	10/6/2014	09:31		10/6/2014	09:47
1006F004.D	Lab Control Sample	KWG1413516-1	10/6/2014	10:14		10/6/2014	10:30
1006F008.D	Method Blank	KWG1413516-3	10/6/2014	11:50		10/6/2014	12:06
1006F009.D	ZZZZZZ	ZZZZZZ	10/6/2014	12:11		10/6/2014	12:27
1006F010.D	ZZZZZZ	ZZZZZZ	10/6/2014	12:33		10/6/2014	12:49
1006F011.D	ZZZZZZ	ZZZZZZ	10/6/2014	12:54		10/6/2014	13:10
1006F012.D	ZZZZZZ	ZZZZZZ	10/6/2014	13:16		10/6/2014	13:32
1006F013.D	ZZZZZZ	ZZZZZZ	10/6/2014	13:37		10/6/2014	13:53
1006F014.D	LGC140924FL1-1	K1410529-010	10/6/2014	13:58		10/6/2014	14:14
1006F015.D	LGC140924LC218-1	K1410529-011	10/6/2014	14:20		10/6/2014	14:36
1006F016.D	LGC140924LC224-1	K1410529-012	10/6/2014	14:41		10/6/2014	14:57
1006F017.D	LGC140924LC01-1	K1410529-013	10/6/2014	15:02		10/6/2014	15:18
1006F018.D	LG140924LC111B-1	K1410529-015	10/6/2014	15:24		10/6/2014	15:40
1006F019.D	LG14092485PA382-1	K1410529-016	10/6/2014	15:45		10/6/2014	16:01
1006F020.D	LGC14092485PA384-1	K1410529-017	10/6/2014	16:06		10/6/2014	16:22
1006F021.D	LGC140924LC124-1	K1410529-018	10/6/2014	16:28		10/6/2014	16:44
1006F022.D	LGC140924DUP2-1	K1410529-019	10/6/2014	16:49		10/6/2014	17:05
1006F023.D	LG140924LC122B-1	K1410529-020	10/6/2014	17:10		10/6/2014	17:26
1006F024.D	LGC140924LC61B-1	K1410529-021	10/6/2014	17:32		10/6/2014	17:48
1006F025.D	LGC140924LC226-1	K1410529-022	10/6/2014	17:53		10/6/2014	18:09
1006F026.D	LGC140925SLAP5-1	K1410529-023	10/6/2014	18:15		10/6/2014	18:31
1006F027.D	LGC140924LC116B-1	K1410529-014	10/6/2014	18:36		10/6/2014	18:52
1006F028.D	LGC140924LC01-1MS	KWG1413516-6	10/6/2014	18:57		10/6/2014	19:13
1006F029.D	LGC140924LC01-1DMS	KWG1413516-7	10/6/2014	19:19		10/6/2014	19:35
1006F030.D	ZZZZZZ	ZZZZZZ	10/6/2014	19:40		10/6/2014	19:56
1006F031.D	ZZZZZZ	ZZZZZZ	10/6/2014	20:01		10/6/2014	20:17

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Client: Sealaska Environmental Services, LLC
 Project: TO 01 JBLM

Service Request: K1410529

Analysis Run Log
 Volatile Organic Compounds

Analysis Method: 8260C

Analysis Lot: KWG1413536
 Instrument ID: GC-MS 18

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
1006F034.D	GC/MS Tuning - Bromofluorobenzene	KWG1413536-1	10/6/2014	21:06		10/6/2014	21:22
1006F035.D	Continuing Calibration Verification	KWG1413536-2	10/6/2014	21:27		10/6/2014	21:43
1006F037.D	Lab Control Sample	KWG1413535-3	10/6/2014	22:10		10/6/2014	22:26
1006F038.D	ZZZZZZ	ZZZZZZ	10/6/2014	22:32		10/6/2014	22:48
1006F039.D	ZZZZZZ	ZZZZZZ	10/6/2014	22:53		10/6/2014	23:09
1006F042.D	Method Blank	KWG1413535-5	10/6/2014	23:57		10/7/2014	00:13
1006F043.D	LG140925SLAP4-1	K1410529-024	10/7/2014	00:19		10/7/2014	00:35
1006F044.D	LG140925SLAP3-1	K1410529-025	10/7/2014	00:40		10/7/2014	00:56
1006F045.D	LG140925SLAP1-1	K1410529-026	10/7/2014	01:02		10/7/2014	01:18
1006F046.D	ZZZZZZ	ZZZZZZ	10/7/2014	01:23		10/7/2014	01:39
1006F047.D	ZZZZZZ	ZZZZZZ	10/7/2014	01:44		10/7/2014	02:00
1006F048.D	ZZZZZZ	ZZZZZZ	10/7/2014	02:06		10/7/2014	02:22
1006F049.D	ZZZZZZ	ZZZZZZ	10/7/2014	02:27		10/7/2014	02:43
1006F050.D	ZZZZZZ	ZZZZZZ	10/7/2014	02:48		10/7/2014	03:04
1006F051.D	ZZZZZZ	ZZZZZZ	10/7/2014	03:10		10/7/2014	03:26
1006F052.D	ZZZZZZ	ZZZZZZ	10/7/2014	03:31		10/7/2014	03:47
1006F053.D	ZZZZZZ	ZZZZZZ	10/7/2014	03:52		10/7/2014	04:08
1006F054.D	ZZZZZZ	ZZZZZZ	10/7/2014	04:14		10/7/2014	04:30
1006F055.D	ZZZZZZ	ZZZZZZ	10/7/2014	04:35		10/7/2014	04:51
1006F056.D	ZZZZZZ	ZZZZZZ	10/7/2014	04:56		10/7/2014	05:12
1006F057.D	ZZZZZZ	ZZZZZZ	10/7/2014	05:18		10/7/2014	05:34
1006F058.D	ZZZZZZ	ZZZZZZ	10/7/2014	05:39		10/7/2014	05:55
1006F059.D	ZZZZZZ	ZZZZZZ	10/7/2014	06:01		10/7/2014	06:17
1006F060.D	ZZZZZZ	ZZZZZZ	10/7/2014	06:22		10/7/2014	06:38
1006F061.D	ZZZZZZ	ZZZZZZ	10/7/2014	06:43		10/7/2014	06:59
1006F062.D	ZZZZZZ	ZZZZZZ	10/7/2014	07:05		10/7/2014	07:21

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/03/2014

Extraction Prep Log
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260C

Extraction Lot: KWG1413475
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
TB-140922	K1410529-031	09/22/14	09/26/14	10ml	10ml	NA	
AOC14092210A178	K1410529-032	09/22/14	09/26/14	10ml	10ml	NA	
AOC14092210A178DL	K1410529-032	09/22/14	09/26/14	10ml	10ml	NA	
AOC140922DUP2DL	K1410529-033	09/22/14	09/26/14	10ml	10ml	NA	
AOC14092295A172	K1410529-034	09/22/14	09/26/14	10ml	10ml	NA	
Method Blank	KWG1413475-4	NA	NA	10ml	10ml	NA	
AOC14092295A172MS	KWG1413475-1	09/22/14	09/26/14	10ml	10ml	NA	
AOC14092295A172DMS	KWG1413475-2	09/22/14	09/26/14	10ml	10ml	NA	
Lab Control Sample	KWG1413475-3	NA	NA	10ml	10ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/04/2014

Extraction Prep Log
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260C

Extraction Lot: KWG1413488
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
TB-140923	K1410529-001	09/23/14	09/26/14	10ml	10ml	NA	
LGC140923LC135-1	K1410529-002	09/23/14	09/26/14	10ml	10ml	NA	
LGC140923LC10830-1	K1410529-003	09/23/14	09/26/14	10ml	10ml	NA	
LGC140923LC10860-1	K1410529-004	09/23/14	09/26/14	10ml	10ml	NA	
LGC140923LC10885-1	K1410529-005	09/23/14	09/26/14	10ml	10ml	NA	
LGC140923MT4-1	K1410529-006	09/23/14	09/26/14	10ml	10ml	NA	
LGC140923MT3-1	K1410529-007	09/23/14	09/26/14	10ml	10ml	NA	
LGC140923MT2-1	K1410529-008	09/23/14	09/26/14	10ml	10ml	NA	
LGC140923MT1-1	K1410529-009	09/23/14	09/26/14	10ml	10ml	NA	
AOC140922DUP2	K1410529-033	09/22/14	09/26/14	10ml	10ml	NA	
AOC14092307A177	K1410529-035	09/23/14	09/26/14	10ml	10ml	NA	
AOC14092395A173A	K1410529-036	09/23/14	09/26/14	10ml	10ml	NA	
Method Blank	KWG1413488-4	NA	NA	10ml	10ml	NA	
Lab Control Sample	KWG1413488-3	NA	NA	10ml	10ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/06/2014

Extraction Prep Log
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260C

Extraction Lot: KWG1413516
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
LGC140924FL1-1	K1410529-010	09/24/14	09/26/14	10ml	10ml	NA	
LGC140924LC218-1	K1410529-011	09/24/14	09/26/14	10ml	10ml	NA	
LGC140924LC224-1	K1410529-012	09/24/14	09/26/14	10ml	10ml	NA	
LGC140924LC01-1	K1410529-013	09/24/14	09/26/14	10ml	10ml	NA	
LGC140924LC116B-1	K1410529-014	09/24/14	09/26/14	10ml	10ml	NA	
LG140924LC111B-1	K1410529-015	09/24/14	09/26/14	10ml	10ml	NA	
LG14092485PA382-1	K1410529-016	09/24/14	09/26/14	10ml	10ml	NA	
LGC14092485PA384-1	K1410529-017	09/24/14	09/26/14	10ml	10ml	NA	
LGC140924LC124-1	K1410529-018	09/24/14	09/26/14	10ml	10ml	NA	
LGC140924DUP2-1	K1410529-019	09/24/14	09/26/14	10ml	10ml	NA	
LG140924LC122B-1	K1410529-020	09/24/14	09/26/14	10ml	10ml	NA	
LGC140924LC61B-1	K1410529-021	09/24/14	09/26/14	10ml	10ml	NA	
LGC140924LC226-1	K1410529-022	09/24/14	09/26/14	10ml	10ml	NA	
LGC140925SLAP5-1	K1410529-023	09/25/14	09/26/14	10ml	10ml	NA	
Method Blank	KWG1413516-3	NA	NA	10ml	10ml	NA	
LGC140924LC01-1MS	KWG1413516-6	09/24/14	09/26/14	10ml	10ml	NA	
LGC140924LC01-1DMS	KWG1413516-7	09/24/14	09/26/14	10ml	10ml	NA	
Lab Control Sample	KWG1413516-1	NA	NA	10ml	10ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: TO 01 JBLM
Sample Matrix: Water

Service Request: K1410529
Date Extracted: 10/07/2014

Extraction Prep Log
Volatile Organic Compounds

Extraction Method: EPA 5030B
Analysis Method: 8260C

Extraction Lot: KWG1413535
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
LG140925SLAP4-1	K1410529-024	09/25/14	09/26/14	10ml	10ml	NA	
LG140925SLAP3-1	K1410529-025	09/25/14	09/26/14	10ml	10ml	NA	
LG140925SLAP1-1	K1410529-026	09/25/14	09/26/14	10ml	10ml	NA	
Method Blank	KWG1413535-5	NA	NA	10ml	10ml	NA	
Lab Control Sample	KWG1413535-3	NA	NA	10ml	10ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis



Analytical Resources, Incorporated
Analytical Chemists and Consultants

March 25, 2014

Thomas Lynott
Department of the Army
Directorate of Public Works
Attn Environmental Division (T. Lynott)
2012 Liggett Ave Box 339500 MS 17
Joint Base Lewis-McChord, Washington 98433-9500
Official Business

RE: Client Project: AOC 8-2, 9-2 and 10-8
ARI Job No.: YC95

Dear Mr. Lynott:

Please find enclosed the original Chain-of-Custody record (COC), sample receipt documentation, and the final data for the project referenced above. Analytical Resources, Inc. (ARI) accepted thirteen water samples on March 14, 2014. For further details regarding sample receipt please refer to the enclosed Cooler Receipt Form.

The samples were analyzed for NWTPH-Dx, NWTPH-Gx and BTEX, as requested on the COCs.

An electronic copy of this report and all supporting raw data will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Respectfully,
ANALYTICAL RESOURCES, INC.

A handwritten signature in black ink, appearing to read "Kelly Bottem".

Kelly Bottem
Client Services Manager
(206) 695-6211
kellyb@arilabs.com
www.arilabs.com

eFile: YC95

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Cooler Receipt Form

ARI Client: JBCLM

Project Name: AOC 8-2, 9-2, 10-8

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: VCS

Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO

Were custody papers included with the cooler? YES NO

Were custody papers properly filled out (ink, signed, etc) YES NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)
Time: 0.4

Temp Gun ID#: 90877952

If cooler temperature is out of compliance fill out form 00070F

Cooler Accepted by: JM Date: 3/14/14 Time: 1305

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO

What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other _____

Was sufficient ice used (if appropriate)? NA YES NO

Were all bottles sealed in individual plastic bags? YES NO

Did all bottles arrive in good condition (unbroken)? YES NO

Were all bottle labels complete and legible? YES NO

Did the number of containers listed on COC match with the number of containers received? YES NO

Did all bottle labels and tags agree with custody papers? YES NO

Were all bottles used correct for the requested analyses? YES NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) NA YES NO

Were all VOC vials free of air bubbles? NA YES NO

Was sufficient amount of sample sent in each bottle? YES NO

Date VOC Trip Blank was made at ARI: _____ NA YES Split by: _____

Was Sample Split by ARI: NA YES Date/Time: _____ Equipment: _____

Samples Logged by: JM Date: 3/14/14 Time: 1448

**** Notify Project Manager of discrepancies or concerns ****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC
4131-MW023	4131-MW022		

Additional Notes, Discrepancies, & Resolutions:
Matched up by time. Used ID from COC.

By: JM Date: 3/14/14

Small Air Bubbles -2mm 	Peabubbles 2-4 mm 	LARGE Air Bubbles > 4 mm
--------------------------------------	---------------------------------	--

Small → "sm" (< 2 mm)
 Peabubbles → "pb" (2 to < 4 mm)
 Large → "lg" (4 to < 6 mm)
 Headspace → "hs" (> 6 mm)

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: **405** Turn-around Requested: **STANDARD TAT**
 ARI Client Company: **JOINT BASE LEWIS-MCCHORD PUBLIC WORKS 253-966-1802**
 Client Contact: **TOM J LYNSTI**
 Client Project Name: **AOC 8-2, 9-2, 10-8**
 Client Project #: **5. BECKER**

Page: **1** of **2**
 Date: **14 MAR 14**
 No. of Coolers: **1**
 Cooler Temps: **0.4**

Ice Present? **X**

No. of Containers

Matrix

Date

Time

Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested			Notes/Comments
					TPH-D	TPH-G	BTEX	
4131-MW04	13MAR14	1020	WATER	2	X			BTEX 8260
4131-MW02	13MAR14	1045	WATER	2	X			TPH-G
4131-MW02	13MAR14	1110	WATER	2	X			TPH-D
4131-MW05	13MAR14	1130	WATER	2	X			
AOC 10-8-B05	13MAR14	1220	WATER	2	X			
JP-MW-02	13MAR14	1320	WATER	2	X			
DUP-1	13MAR14	0800	WATER	2	X			
10-A17-8	10MAR14	1155	WATER	5		X		
07-A17-7	14MAR14	0915	WATER	5		X		
95A17-4	14MAR14	1000	WATER	5		X		
Comments/Special Instructions	Relinquished by (Signature): <i>Jeremy Becker</i>				Received by (Signature): <i>Janifer Millego</i>			
	Printed Name: JEREMY BECKER				Printed Name: Janifer Millego			
	Company: VERSAR, INC.				Company: ARI			
	Date & Time: 14MAR14 1305				Date & Time: 3/14/14 1305			

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.



Analytical Resources, Incorporated
 Analytical Chemists and Consultants
 4611 South 134th Place, Suite 100
 Tukwila, WA 98168
 206-695-6200 206-695-6201 (fax)

4050-60000

Sample ID Cross Reference Report



ARI Job No: YC95
Client: Joint Base Lewis McChord
Project Event: N/A
Project Name: AOC 8-2, 9-2, 10-8

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. 4131-MW04	YC95A	14-4398	Water	03/13/14 10:20	03/14/14 13:05
2. 4131-MW02	YC95B	14-4399	Water	03/13/14 10:45	03/14/14 13:05
3. 4131-MW03	YC95C	14-4400	Water	03/13/14 11:10	03/14/14 13:05
4. 4131-MW05	YC95D	14-4401	Water	03/13/14 11:30	03/14/14 13:05
5. AOC 10-8-B05	YC95E	14-4402	Water	03/13/14 12:20	03/14/14 13:05
6. JP-MW-02	YC95F	14-4403	Water	03/13/14 13:20	03/14/14 13:05
7. DUP-1	YC95G	14-4404	Water	03/13/14 08:00	03/14/14 13:05
8. 10-A17-8	YC95H	14-4405	Water	03/10/14 11:55	03/14/14 13:05
9. 07-A17-7	YC95I	14-4406	Water	03/14/14 09:15	03/14/14 13:05
10. 95-A17-4	YC95J	14-4407	Water	03/14/14 10:00	03/14/14 13:05
11. 95-A17-3A	YC95K	14-4408	Water	03/14/14 10:55	03/14/14 13:05
12. DUP-2	YC95L	14-4409	Water	03/14/14 08:30	03/14/14 13:05
13. TB-1	YC95M	14-4410	Water	03/14/14	03/14/14 13:05

PRESERVATION VERIFICATION 03/14/14

Page 1 of 1



ARI Job No: YC95

PC: Kelly
VTSR: 03/14/14

Inquiry Number: NONE
Analysis Requested: 03/14/14
Contact: Lynott, Tom
Client: Joint Base Lewis McChord
Logged by: JM
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

Project #:
Project: AOC 8-2, 9-2, 10-8
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET DOC FLT FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
14-4398 YC95A	4131-MW04																				
14-4399 YC95B	4131-MW02																				
14-4400 YC95C	4131-MW03																				
14-4401 YC95D	4131-MW05																				
14-4402 YC95E	AOC 10-8-B05																				
14-4403 YC95F	JP-MW-02																				
14-4404 YC95G	DUP-1																				

14 03 14 03 03 03 03

Checked By JM Date 3/14/14

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 1

Sample ID: 10-A17-8
SAMPLE

Lab Sample ID: YC95H

QC Report No: YC95-Joint Base Lewis McChord

LIMS ID: 14-4405

Project: AOC 8-2, 9-2, 10-8

Matrix: Water

Data Release Authorized: *MMW*

Date Sampled: 03/10/14

Reported: 03/19/14

Date Received: 03/14/14

Instrument/Analyst: NT3/PAB

Sample Amount: 0.500 mL

Date Analyzed: 03/18/14 20:44

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
71-43-2	Benzene	4.0	160	
108-88-3	Toluene	4.0	330	
100-41-4	Ethylbenzene	4.0	160	
179601-23-1	m,p-Xylene	8.0	730	
95-47-6	o-Xylene	4.0	300	

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	97.9%
Bromofluorobenzene	94.1%
d4-1,2-Dichlorobenzene	100%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 1

Sample ID: 10-A17-8
MATRIX SPIKE

Lab Sample ID: YC95H

QC Report No: YC95-Joint Base Lewis McChord

LIMS ID: 14-4405

Project: AOC 8-2, 9-2, 10-8

Matrix: Water

Data Release Authorized: *MW*

Date Sampled: 03/10/14

Reported: 03/19/14

Date Received: 03/14/14

Instrument/Analyst: NT3/PAB

Sample Amount: 0.500 mL

Date Analyzed: 03/18/14 22:46

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
71-43-2	Benzene	4.0	---	
108-88-3	Toluene	4.0	---	
100-41-4	Ethylbenzene	4.0	---	
179601-23-1	m,p-Xylene	8.0	---	
95-47-6	o-Xylene	4.0	---	

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	98.3%
Bromofluorobenzene	96.7%
d4-1,2-Dichlorobenzene	99.4%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 1

Sample ID: 10-A17-8
MATRIX SPIKE DUP

Lab Sample ID: YC95H
LIMS ID: 14-4405
Matrix: Water
Data Release Authorized: *MMW*
Reported: 03/19/14

QC Report No: YC95-Joint Base Lewis McChord
Project: AOC 8-2, 9-2, 10-8
Date Sampled: 03/10/14
Date Received: 03/14/14

Instrument/Analyst: NT3/PAB
Date Analyzed: 03/18/14 23:15

Sample Amount: 0.500 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
71-43-2	Benzene	4.0	---	
108-88-3	Toluene	4.0	---	
100-41-4	Ethylbenzene	4.0	---	
179601-23-1	m,p-Xylene	8.0	---	
95-47-6	o-Xylene	4.0	---	

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	98.5%
Bromofluorobenzene	96.8%
d4-1,2-Dichlorobenzene	98.3%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 1

Sample ID: 07-A17-7
SAMPLE

Lab Sample ID: YC95I

LIMS ID: 14-4406

Matrix: Water

Data Release Authorized: *MM*

Reported: 03/19/14

QC Report No: YC95-Joint Base Lewis McChord

Project: AOC 8-2, 9-2, 10-8

Date Sampled: 03/14/14

Date Received: 03/14/14

Instrument/Analyst: NT3/PAB

Date Analyzed: 03/18/14 19:17

Sample Amount: 10.0 mL

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
71-43-2	Benzene	0.20	< 0.20	U
108-88-3	Toluene	0.20	0.25	
100-41-4	Ethylbenzene	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	97.1%
Bromofluorobenzene	91.5%
d4-1,2-Dichlorobenzene	100%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: 95-A17-4

Page 1 of 1

SAMPLE

Lab Sample ID: YC95J

QC Report No: YC95-Joint Base Lewis McChord

LIMS ID: 14-4407

Project: AOC 8-2, 9-2, 10-8

Matrix: Water

Data Release Authorized: *WWW*

Date Sampled: 03/14/14

Reported: 03/19/14

Date Received: 03/14/14

Instrument/Analyst: NT3/PAB

Sample Amount: 10.0 mL

Date Analyzed: 03/18/14 19:46

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
71-43-2	Benzene	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	100%
d8-Toluene	95.8%
Bromofluorobenzene	93.2%
d4-1,2-Dichlorobenzene	101%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: 95-A17-3A

Page 1 of 1

SAMPLE

Lab Sample ID: YC95K

QC Report No: YC95-Joint Base Lewis McChord

LIMS ID: 14-4408

Project: AOC 8-2, 9-2, 10-8

Matrix: Water

Data Release Authorized: *WW*

Date Sampled: 03/14/14

Reported: 03/19/14

Date Received: 03/14/14

Instrument/Analyst: NT3/PAB

Sample Amount: 0.500 mL

Date Analyzed: 03/18/14 21:15

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
71-43-2	Benzene	4.0	36	
108-88-3	Toluene	4.0	100	
100-41-4	Ethylbenzene	4.0	230	
179601-23-1	m,p-Xylene	8.0	980	
95-47-6	o-Xylene	4.0	230	

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	99.2%
Bromofluorobenzene	93.5%
d4-1,2-Dichlorobenzene	102%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 1

Sample ID: DUP-2
SAMPLE

Lab Sample ID: YC95L

QC Report No: YC95-Joint Base Lewis McChord

LIMS ID: 14-4409

Project: AOC 8-2, 9-2, 10-8

Matrix: Water

Data Release Authorized: *MW*

Date Sampled: 03/14/14

Reported: 03/19/14

Date Received: 03/14/14

Instrument/Analyst: NT3/PAB

Sample Amount: 0.500 mL

Date Analyzed: 03/18/14 21:46

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
71-43-2	Benzene	4.0	37	
108-88-3	Toluene	4.0	100	
100-41-4	Ethylbenzene	4.0	240	
179601-23-1	m,p-Xylene	8.0	1,000	
95-47-6	o-Xylene	4.0	230	

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	102%
d8-Toluene	97.2%
Bromofluorobenzene	95.5%
d4-1,2-Dichlorobenzene	101%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 1

Sample ID: TB-1
SAMPLE

Lab Sample ID: YC95M

QC Report No: YC95-Joint Base Lewis McChord

LIMS ID: 14-4410

Project: AOC 8-2, 9-2, 10-8

Matrix: Water

Data Release Authorized: *YMW*

Date Sampled: 03/14/14

Reported: 03/19/14

Date Received: 03/14/14

Instrument/Analyst: NT3/PAB

Sample Amount: 10.0 mL

Date Analyzed: 03/18/14 20:15

Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
71-43-2	Benzene	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	101%
d8-Toluene	96.1%
Bromofluorobenzene	93.8%
d4-1,2-Dichlorobenzene	98.9%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 1

Sample ID: MB-031814A
METHOD BLANK

Lab Sample ID: MB-031814A
LIMS ID: 14-4405
Matrix: Water
Data Release Authorized: *AW*
Reported: 03/19/14

QC Report No: YC95-Joint Base Lewis McChord
Project: AOC 8-2, 9-2, 10-8

Date Sampled: NA
Date Received: NA

Instrument/Analyst: NT3/PAB
Date Analyzed: 03/18/14 12:56

Sample Amount: 10.0 mL
Purge Volume: 10.0 mL

CAS Number	Analyte	LOQ	Result	Q
71-43-2	Benzene	0.20	< 0.20	U
108-88-3	Toluene	0.20	< 0.20	U
100-41-4	Ethylbenzene	0.20	< 0.20	U
179601-23-1	m,p-Xylene	0.40	< 0.40	U
95-47-6	o-Xylene	0.20	< 0.20	U

Reported in µg/L (ppb)

Volatile Surrogate Recovery

d4-1,2-Dichloroethane	103%
d8-Toluene	96.5%
Bromofluorobenzene	91.5%
d4-1,2-Dichlorobenzene	101%

VOA SURROGATE RECOVERY SUMMARY



Matrix: Water

QC Report No: YC95-Joint Base Lewis McChord
Project: AOC 8-2, 9-2, 10-8

ARI ID	Client ID	PV	DCE	TOL	BFB	DCB	TOT OUT
MB-031814A	Method Blank	10	103%	96.5%	91.5%	101%	0
LCS-031814A	Lab Control	10	100%	97.1%	95.9%	99.7%	0
LCSD-031814A	Lab Control Dup	10	102%	98.4%	93.1%	100%	0
YC95H	10-A17-8	10	101%	97.9%	94.1%	100%	0
YC95HMS	10-A17-8	10	102%	98.3%	96.7%	99.4%	0
YC95HMSD	10-A17-8	10	103%	98.5%	96.8%	98.3%	0
YC95I	07-A17-7	10	102%	97.1%	91.5%	100%	0
YC95J	95-A17-4	10	100%	95.8%	93.2%	101%	0
YC95K	95-A17-3A	10	103%	99.2%	93.5%	102%	0
YC95L	DUP-2	10	102%	97.2%	95.5%	101%	0
YC95M	TB-1	10	101%	96.1%	93.8%	98.9%	0

LCS/MB LIMITS

QC LIMITS

SW8260C

(DCE) = d4-1,2-Dichloroethane
(TOL) = d8-Toluene
(BFB) = Bromofluorobenzene
(DCB) = d4-1,2-Dichlorobenzene

(80-120)
(80-120)
(80-120)
(80-120)

(80-130)
(80-120)
(80-120)
(80-120)

Prep Method: SW5030B
Log Number Range: 14-4405 to 14-4410

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C

Sample ID: LCS-031814A

Page 1 of 1

LAB CONTROL SAMPLE

Lab Sample ID: LCS-031814A

QC Report No: YC95-Joint Base Lewis McChord

LIMS ID: 14-4405

Project: AOC 8-2, 9-2, 10-8

Matrix: Water

Data Release Authorized: *MMW*

Date Sampled: NA

Reported: 03/19/14

Date Received: NA

Instrument/Analyst LCS: NT3/PAB

Sample Amount LCS: 10.0 mL

LCSD: NT3/PAB

LCSD: 10.0 mL

Date Analyzed LCS: 03/18/14 11:58

Purge Volume LCS: 10.0 mL

LCSD: 03/18/14 12:27

LCSD: 10.0 mL

Analyte	LCS	Spike	LCS	LCSD	Spike	LCSD	RPD
		Added-LCS	Recovery		Added-LCSD	Recovery	
Benzene	9.75	10.0	97.5%	9.58	10.0	95.8%	1.8%
Toluene	9.44	10.0	94.4%	9.55	10.0	95.5%	1.2%
Ethylbenzene	10.1	10.0	101%	9.87	10.0	98.7%	2.3%
m,p-Xylene	21.4	20.0	107%	21.0	20.0	105%	1.9%
o-Xylene	10.0	10.0	100%	9.80	10.0	98.0%	2.0%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	100%	102%
d8-Toluene	97.1%	98.4%
Bromofluorobenzene	95.9%	93.1%
d4-1,2-Dichlorobenzene	99.7%	100%

ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method SW8260C
Page 1 of 1

Sample ID: 10-A17-8
MATRIX SPIKE

Lab Sample ID: YC95H

LIMS ID: 14-4405

Matrix: Water

Data Release Authorized: *[Signature]*

Reported: 03/19/14

QC Report No: YC95-Joint Base Lewis McChord

Project: AOC 8-2, 9-2, 10-8

Date Sampled: 03/10/14

Date Received: 03/14/14

Instrument/Analyst MS: NT3/PAB

MSD: NT3/PAB

Date Analyzed MS: 03/18/14 22:46

MSD: 03/18/14 23:15

Sample Amount MS: 0.500 mL

MSD: 0.500 mL

Purge Volume MS: 10.0 mL

MSD: 10.0 mL

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Benzene	160	355	200	97.5%	354	200	97.0%	0.3%
Toluene	330	516	200	93.0%	512	200	91.0%	0.8%
Ethylbenzene	160	344	200	92.0%	340	200	90.0%	1.2%
m,p-Xylene	730	1110	400	95.0%	1090	400	90.0%	1.8%
o-Xylene	300	495	200	97.5%	490	200	95.0%	1.0%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

ORGANICS ANALYSIS DATA SHEET
 TPHG by Method NWTPHG
 Matrix: Water



QC Report No: YC95-Joint Base Lewis McChord
 Project: AOC 8-2, 9-2, 10-8
 Event: NA

Data Release Authorized:
 Reported: 03/25/14

ARI ID	Client ID	Analysis Date	DL	Range	Result
MB-032114 14-4405	Method Blank	03/21/14 PID1	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 101% 94.7%
YC95H 14-4405	10-A17-8	03/21/14 PID1	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	9.5 GAS 105% 103%
YC95I 14-4406	07-A17-7	03/21/14 PID1	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 103% 101%
YC95J 14-4407	95-A17-4	03/21/14 PID1	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 103% 98.5%
MB-032414 14-4408	Method Blank	03/24/14 PID1	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	< 0.25 U --- 107% 102%
YC95K 14-4408	95-A17-3A	03/21/14 PID1	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	13 E GAS 106% 104%
YC95K DL 14-4408	95-A17-3A	03/24/14 PID1	10	Gasoline HC ID Trifluorotoluene Bromobenzene	15 GAS 107% 102%
YC95L 14-4409	DUP-2	03/21/14 PID1	1.0	Gasoline HC ID Trifluorotoluene Bromobenzene	13 E GAS 108% 108%
YC95L DL 14-4409	DUP-2	03/24/14 PID1	10	Gasoline HC ID Trifluorotoluene Bromobenzene	15 GAS 106% 102%

Gasoline values reported in mg/L (ppm)

Quantitation on total peaks in the gasoline range from Toluene to Naphthalene.

GAS: Indicates the presence of gasoline or weathered gasoline.

GRO: Positive result that does not match an identifiable gasoline pattern.

ORGANICS ANALYSIS DATA SHEET

TPHG by Method NWTPHG

Page 1 of 1

Sample ID: LCS-032114

LAB CONTROL SAMPLE

Lab Sample ID: LCS-032114

LIMS ID: 14-4405

Matrix: Water

Data Release Authorized: *B*

Reported: 03/25/14

QC Report No: YC95-Joint Base Lewis McChord

Project: AOC 8-2, 9-2, 10-8

Event: NA

Date Sampled: NA

Date Received: NA

Date Analyzed LCS: 03/21/14 11:37

Purge Volume: 5.0 mL

LCSD: 03/21/14 12:06

Instrument/Analyst LCS: PID1/JLW

Dilution Factor LCS: 1.0

LCSD: PID1/JLW

LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	0.93	1.00	93.0%	0.98	1.00	98.0%	5.2%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	97.6%	105%
Bromobenzene	94.2%	101%

TPHG WATER SURROGATE RECOVERY SUMMARY

ARI Job: YC95
Matrix: Water

QC Report No: YC95-Joint Base Lewis McChord
Project: AOC 8-2, 9-2, 10-8
Event: NA

Client ID	TFT	BBZ	TOT OUT
MB-032114	101%	94.7%	0
LCS-032114	97.6%	94.2%	0
LCSD-032114	105%	101%	0
10-A17-8	105%	103%	0
07-A17-7	103%	101%	0
95-A17-4	103%	98.5%	0
MB-032414	107%	102%	0
LCS-032414	109%	104%	0
LCSD-032414	104%	98.8%	0
95-A17-3A	106%	104%	0
95-A17-3A DL	107%	102%	0
DUP-2	108%	108%	0
DUP-2 DL	106%	102%	0

	LCS/MB LIMITS	QC LIMITS
(TFT) = Trifluorotoluene	(80-120)	(80-120)
(BBZ) = Bromobenzene	(80-120)	(80-120)

Log Number Range: 14-4405 to 14-4409

ORGANICS ANALYSIS DATA SHEET
TPHG by Method NWTPHG
 Page 1 of 1

Sample ID: LCS-032414
LAB CONTROL SAMPLE

Lab Sample ID: LCS-032414
 LIMS ID: 14-4408
 Matrix: Water
 Data Release Authorized: *[Signature]*
 Reported: 03/25/14

QC Report No: YC95-Joint Base Lewis McChord
 Project: AOC 8-2, 9-2, 10-8
 Event: NA
 Date Sampled: NA
 Date Received: NA

Date Analyzed LCS: 03/24/14 10:29
 LCSD: 03/24/14 10:59
 Instrument/Analyst LCS: PID1/JLW
 LCSD: PID1/JLW

Purge Volume: 5.0 mL
 Dilution Factor LCS: 1.0
 LCSD: 1.0

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Gasoline Range Hydrocarbons	1.02	1.00	102%	0.96	1.00	96.0%	6.1%

Reported in mg/L (ppm)

RPD calculated using sample concentrations per SW846.

TPHG Surrogate Recovery

	LCS	LCSD
Trifluorotoluene	109%	104%
Bromobenzene	104%	98.8%

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
 NWTPHD by GC/FID
 Extraction Method: SW3510C
 Page 1 of 1

QC Report No: YC95-Joint Base Lewis McChord
 Project: AOC 8-2, 9-2, 10-8

Matrix: Water

Date Received: 03/14/14

Data Release Authorized: *MW*
 Reported: 03/20/14

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-031714 14-4398	Method Blank HC ID: ---	03/17/14	03/20/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 90.5%
YC95A 14-4398	4131-MW04 HC ID: ---	03/17/14	03/20/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 89.2%
YC95B 14-4399	4131-MW02 HC ID: DRO/MOTOR OIL	03/17/14	03/20/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	0.68 0.27 73.2%
YC95C 14-4400	4131-MW03 HC ID: DIESEL/RRO	03/17/14	03/20/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	2.4 0.29 70.7%
YC95D 14-4401	4131-MW05 HC ID: ---	03/17/14	03/20/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 90.9%
YC95E 14-4402	AOC 10-8-B05 HC ID: DIESEL/RRO	03/17/14	03/20/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	0.44 0.30 76.3%
YC95F 14-4403	JP-MW-02 HC ID: ---	03/17/14	03/20/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 92.2%
YC95G 14-4404	DUP-1 HC ID: ---	03/17/14	03/20/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 79.0%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
 DL-Dilution of extract prior to analysis.
 RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
 Motor Oil range quantitation on total peaks in the range from C24 to C38.
 HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: YC95-Joint Base Lewis McChord
Project: AOC 8-2, 9-2, 10-8

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-031714	90.5%	0
LCS-031714	82.8%	0
LCSD-031714	72.9%	0
4131-MW04	89.2%	0
4131-MW02	73.2%	0
4131-MW03	70.7%	0
4131-MW05	90.9%	0
AOC 10-8-B05	76.3%	0
JP-MW-02	92.2%	0
DUP-1	79.0%	0

LCS/MB LIMITS QC LIMITS

(OTER) = o-Terphenyl

(50-150)

(50-150)

Prep Method: SW3510C
Log Number Range: 14-4398 to 14-4404

ORGANICS ANALYSIS DATA SHEET
NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-031714
LCS/LCSD

Lab Sample ID: LCS-031714
LIMS ID: 14-4398
Matrix: Water
Data Release Authorized: *MW*
Reported: 03/20/14

QC Report No: YC95-Joint Base Lewis McChord
Project: AOC 8-2, 9-2, 10-8
Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 03/17/14
Date Analyzed LCS: 03/20/14 03:48
LCSD: 03/20/14 04:12
Instrument/Analyst LCS: FID3B/JLW
LCSD: FID3B/JLW

Sample Amount LCS: 500 mL
LCSD: 500 mL
Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL
Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.51	3.00	83.7%	2.51	3.00	83.7%	0.0%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	82.8%	72.9%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 03/14/14

ARI Job: YC95
Project: AOC 8-2, 9-2, 10-8

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
14-4398-031714MB1	Method Blank	500 mL	1.00 mL	03/17/14
14-4398-031714LCS1	Lab Control	500 mL	1.00 mL	03/17/14
14-4398-031714LCSD1	Lab Control Dup	500 mL	1.00 mL	03/17/14
14-4398-YC95A	4131-MW04	500 mL	1.00 mL	03/17/14
14-4399-YC95B	4131-MW02	500 mL	1.00 mL	03/17/14
14-4400-YC95C	4131-MW03	500 mL	1.00 mL	03/17/14
14-4401-YC95D	4131-MW05	500 mL	1.00 mL	03/17/14
14-4402-YC95E	AOC 10-8-B05	500 mL	1.00 mL	03/17/14
14-4403-YC95F	JP-MW-02	500 mL	1.00 mL	03/17/14
14-4404-YC95G	DUP-1	500 mL	1.00 mL	03/17/14



Analytical Resources, Incorporated
Analytical Chemists and Consultants

March 24, 2014

Thomas Lynott
Department of the Army
Directorate of Public Works
Attn Environmental Division (T. Lynott)
2012 Liggett Ave Box 339500 MS 17
Joint Base Lewis-McChord, Washington 98433-9500
Official Business

RE: Client Project: AOC 8-4
ARI Job No.: YD54

Dear Mr. Lynott:

Please find enclosed the original Chain-of-Custody record (COC), sample receipt documentation, and the final data for the project referenced above. Analytical Resources, Inc. (ARI) accepted five water samples on March 19, 2014. For further details regarding sample receipt please refer to the enclosed Cooler Receipt Form.

The samples were analyzed for NWTPH-Dx, as requested on the COCs.

An electronic copy of this report and all supporting raw data will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Respectfully,
ANALYTICAL RESOURCES, INC.

Kelly Bottem
Client Services Manager
(206) 695-6211
kellyb@arilabs.com
www.arilabs.com

eFile: YD54

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: Y054 Turn-around Requested: STANDARD TAT

ARI Client Company: JOINT BASE LEWIS-MCCHORD AIRCRAFTWORKS 253-966-1802 Phone: _____

Client Contact: TOM J LYNOTT

Client Project Name: AOC 8-4

Client Project #: _____

Samplers: J. BECKER

Page: 1 of 1

Date: 19 MAR 14 Ice Present? Y

No. of Coolers: 4 Cooler Temps: 0.3 - 5.4

Analytical Resources, Incorporated
 Analytical Chemists and Consultants
 4611 South 134th Place, Suite 100
 Tukwila, WA 98168
 206-695-6200 206-695-6201 (fax)
 www.arilabs.com



Sample ID	Date	Time	Matrix	No. Containers	Analysis Requested				Notes/Comments	
A011-MW04	17MAR14	1005	WATER	2	X					TPH-D
A011-MW07	17MAR14	1045	WATER	2	X					
A011-MW08	17MAR14	1120	WATER	2	X					
A011-MW05	17MAR14	1200	WATER	2	X					
A011-MW06	17MAR14	1255	WATER	2	X					
Comments/Special Instructions					Received by (Signature)	Relinquished by (Signature)	Received by (Signature)			
					Printed Name: <u>Jeremy Becker</u>	Printed Name:	Printed Name:			
					Company: <u>VERPAR, INC.</u>	Company: <u>Taylor Jarrett</u>	Company:			
					Date & Time: <u>19MAR14 1441</u>	Date & Time: <u>3-19-14 1611</u>	Date & Time:			

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

TO 0001

1504 . 651 651 651 NI



Cooler Receipt Form

ARI Client: JSLM

Project Name: Acc 8-11

COC No(s) _____ NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: YD54

Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO

Were custody papers included with the cooler? YES NO

Were custody papers properly filled out (ink, signed, etc) YES NO

Temperature of Cooler(s) (°C) (recommended 2 0-6.0 °C for chemistry) 03 23 3.4 58

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 902 72152

Cooler Accepted by: IS Date: 3-19-14 Time: 1611

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO

What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other _____

Was sufficient ice used (if appropriate)? NA YES NO

Were all bottles sealed in individual plastic bags? YES NO

Did all bottles arrive in good condition (unbroken)? YES NO

Were all bottle labels complete and legible? YES NO

Did the number of containers listed on COC match with the number of containers received? YES NO

Did all bottle labels and tags agree with custody papers? YES NO

Were all bottles used correct for the requested analyses? YES NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... NA YES NO

Were all VOC vials free of air bubbles? NA YES NO

Was sufficient amount of sample sent in each bottle? YES NO

Date VOC Trip Blank was made at ARI... NA

Was Sample Split by ARI... NA YES Date/Time: _____ Equipment: _____ Split by: _____

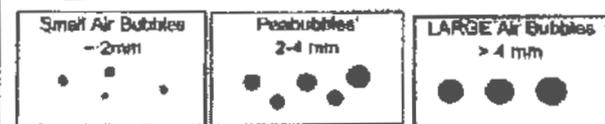
Samples Logged by: IS Date: 3-19-14 Time: 1647

**** Notify Project Manager of discrepancies or concerns ****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: _____ Date: _____



- Small → "sm" (< 2 mm)
- Peabubbles → "pb" (2 to < 4 mm)
- Large → "lg" (4 to < 6 mm)
- Headspace → "hs" (> 6 mm)

Sample ID Cross Reference Report



ARI Job No: YD54
Client: Joint Base Lewis McChord
Project Event: N/A
Project Name: AOC 8-4

Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1. A0111-MW04	YD54A	14-4811	Water	03/17/14 10:05	03/19/14 14:41
2. A0111-MW07	YD54B	14-4812	Water	03/17/14 10:45	03/19/14 14:41
3. A0111-MW08	YD54C	14-4813	Water	03/17/14 11:20	03/19/14 14:41
4. A0111-MW05	YD54D	14-4814	Water	03/17/14 12:00	03/19/14 14:41
5. A0111-MW06	YD54E	14-4815	Water	03/17/14 12:55	03/19/14 14:41



ARI Job No: YD54
PC: Kelly
VTSR: 03/19/14

Inquiry Number: NONE
Analysis Requested: 03/19/14
Contact: Lynott, Tom
Client: Joint Base Lewis McChord
Logged by: TS
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

Project #: AOC 8-4
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET DOC FLT FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
14-4811 YD54A	A0111-MW04																				
14-4812 YD54B	A0111-MW07																				
14-4813 YD54C	A0111-MW08																				
14-4814 YD54D	A0111-MW05																				
14-4815 YD54E	A0111-MW06																				

1000 00000

Checked By TS Date 3-19-14

ORGANICS ANALYSIS DATA SHEET
TOTAL DIESEL RANGE HYDROCARBONS
NWTPHD by GC/FID
Extraction Method: SW3510C
Page 1 of 1

QC Report No: YD54-Joint Base Lewis McChord
Project: AOC 8-4

Matrix: Water

Date Received: 03/19/14

Data Release Authorized: *MW*
Reported: 03/24/14

ARI ID	Sample ID	Extraction Date	Analysis Date	EFV DF	Range/Surrogate	RL	Result
MB-032014 14-4811	Method Blank HC ID: ---	03/20/14	03/21/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 92.1%
YD54A 14-4811	A0111-MW04 HC ID: DRO	03/20/14	03/21/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	0.35 < 0.20 U 66.0%
YD54B 14-4812	A0111-MW07 HC ID: ---	03/20/14	03/21/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 88.2%
YD54C 14-4813	A0111-MW08 HC ID: DRO	03/20/14	03/21/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	0.25 < 0.20 U 63.4%
YD54D 14-4814	A0111-MW05 HC ID: ---	03/20/14	03/21/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 91.3%
YD54E 14-4815	A0111-MW06 HC ID: ---	03/20/14	03/21/14 FID3B	1.00 1.0	Diesel Range Motor Oil Range o-Terphenyl	0.10 0.20	< 0.10 U < 0.20 U 87.4%

Reported in mg/L (ppm)

EFV-Effective Final Volume in mL.
DL-Dilution of extract prior to analysis.
RL-Reporting limit.

Diesel range quantitation on total peaks in the range from C12 to C24.
Motor Oil range quantitation on total peaks in the range from C24 to C38.
HC ID: DRO/RRO indicates results of organics or additional hydrocarbons in ranges are not identifiable.

TPHD SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: YD54-Joint Base Lewis McChord
Project: AOC 8-4

<u>Client ID</u>	<u>OTER</u>	<u>TOT OUT</u>
MB-032014	92.1%	0
LCS-032014	81.2%	0
LCSD-032014	71.2%	0
A0111-MW04	66.0%	0
A0111-MW07	88.2%	0
A0111-MW08	63.4%	0
A0111-MW05	91.3%	0
A0111-MW06	87.4%	0

	<u>LCS/MB LIMITS</u>	<u>QC LIMITS</u>
(OTER) = o-Terphenyl	(50-150)	(50-150)

Prep Method: SW3510C
Log Number Range: 14-4811 to 14-4815

ORGANICS ANALYSIS DATA SHEET

NWTPHD by GC/FID
Page 1 of 1

Sample ID: LCS-032014
LCS/LCSD

Lab Sample ID: LCS-032014
LIMS ID: 14-4811
Matrix: Water
Data Release Authorized: *MW*
Reported: 03/24/14

QC Report No: YD54-Joint Base Lewis McChord
Project: AOC 8-4

Date Sampled: NA
Date Received: NA

Date Extracted LCS/LCSD: 03/20/14

Sample Amount LCS: 500 mL
LCSD: 500 mL

Date Analyzed LCS: 03/21/14 11:06
LCSD: 03/21/14 11:31

Final Extract Volume LCS: 1.0 mL
LCSD: 1.0 mL

Instrument/Analyst LCS: FID3B/JLW
LCSD: FID3B/JLW

Dilution Factor LCS: 1.00
LCSD: 1.00

Range	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Diesel	2.43	3.00	81.0%	2.38	3.00	79.3%	2.1%

TPHD Surrogate Recovery

	LCS	LCSD
o-Terphenyl	81.2%	71.2%

Results reported in mg/L
RPD calculated using sample concentrations per SW846.

TOTAL DIESEL RANGE HYDROCARBONS-EXTRACTION REPORT

Matrix: Water
Date Received: 03/19/14

ARI Job: YD54
Project: AOC 8-4

ARI ID	Client ID	Samp Amt	Final Vol	Prep Date
14-4811-032014MB1	Method Blank	500 mL	1.00 mL	03/20/14
14-4811-032014LCS1	Lab Control	500 mL	1.00 mL	03/20/14
14-4811-032014LCSD1	Lab Control Dup	500 mL	1.00 mL	03/20/14
14-4811-YD54A	A0111-MW04	500 mL	1.00 mL	03/20/14
14-4812-YD54B	A0111-MW07	500 mL	1.00 mL	03/20/14
14-4813-YD54C	A0111-MW08	500 mL	1.00 mL	03/20/14
14-4814-YD54D	A0111-MW05	500 mL	1.00 mL	03/20/14
14-4815-YD54E	A0111-MW06	500 mL	1.00 mL	03/20/14

APPENDIX C
DATA QUALITY REVIEW AND VERIFICATION

APPENDIX C DATA QUALITY REVIEW AND VERIFICATION 2014 GROUNDWATER SAMPLING EVENTS

1. Precision

Precision was assessed via the relative percent difference (RPD) for matrix spike duplicates and the RPD for field duplicate samples. As shown in the analytical reports, matrix spike duplicate RPDs are within the acceptable range indicated in the groundwater monitoring plan. Field duplicate RPDs are within a reasonable range (i.e., < 50% for groundwater samples).

Analyte	JP-MW02 (Mar 2014) Conc. (µg/L)	Duplicate Conc. (µg/L)	RPD (%)	Conc. (µg/L)	Duplicate Conc. (µg/L)	RPD (%)
TPH-D	100U	100U	-	-	-	-
TPH-HO	200U	200U	-	-	-	-
Analyte	-	-	-	-	-	-
TPH-G	-	-	-	-	-	-
Benzene	-	-	-	-	-	-
Toluene	-	-	-	-	-	-
Ethylbenzene	-	-	-	-	-	-
Xylenes	-	-	-	-	-	-

Analyte	A0111-MW08 (Sep 2014) Conc. (µg/L)	Duplicate Conc. (µg/L)	RPD (%)	10 A17-8 (Sep 2014) Conc. (µg/L)	Duplicate Conc. (µg/L)	RPD (%)
TPH-D	720	590	22	-	-	-
TPH-HO	450	330	36	-	-	-
Analyte	-	-	-	-	-	-
TPH-G	-	-	-	3,500	3,700	6
Benzene	-	-	-	46	50	9
Toluene	-	-	-	90	110	22
Ethylbenzene	-	-	-	61	65	7
Xylenes	-	-	-	410	440	7

2. Accuracy

Accuracy was assessed by analysis of laboratory method blanks as well as recoveries in blank spikes, matrix spikes, and surrogates. No analytes were detected in the laboratory method blanks. As shown in the analytical reports, recoveries for blank spikes, matrix spikes, and surrogates for all analyses were within the acceptable ranges indicated in the Groundwater Monitoring Plan.

3. Representativeness

Representativeness was assessed by evaluating the sample collection, sampling handling, and sample analysis procedures. All samples were collected, handled, and analyzed in accordance with the Groundwater Monitoring Plan (which was designed to obtain representative samples). In addition, all samples were extracted and analyzed within appropriate holding times listed in the Groundwater Monitoring Plan.

4. Comparability

Comparability was assessed by comparing current sample collection and analysis procedures with historical procedures. The samples were collected and analyzed with standard procedures and are comparable with other data.

5. Sensitivity

Sensitivity was assessed by comparing actual practical quantification limits (PQLs) with expected PQLs listed in the Groundwater Monitoring Plan. The actual PQLs were equal to the expected PQLs of 100 µg/L or 200 µg/L for diesel and 500 µg/L for heavy oil.

6. Completeness

Completeness was assessed by calculating the percentage of acceptable sample results to all sample results. All sample results were acceptable.

7. Conclusions

This data is deemed acceptable for use as presented in this report. No corrective action or additional data qualification beyond what is described above is necessary.

Tetra Tech, Inc. Data Review Report

Project Name: JBLM/AOC 8-4
Project Number: K1410066
Collection Date: 09/18/14
Laboratory: ALS Environmental, Kelso, WA

DATA REVIEW

- Five water samples including one field duplicate sample were collected and analyzed for Diesel Range Organics (DRO) and Residual Range Organics (RRO) by NWTPH-Dx. A review was performed of the following parameters as applicable:
 - Chain-of-custody (C-O-C) documentation
 - Holding time compliance
 - Blank sample data
 - Laboratory Control Sample recovery
 - Duplicate samples
 - Surrogate recoveries

Sample Identification:

AOC140916A0111MW08
AOC140916DUP1
AOC140916A0111MW04
AOC140916A0111MW07
AOC140916A0111MW06

Review Summary

1. Holding Time

All holding times were met. The cooler arrived at acceptable temperature levels.

2. Laboratory Control Sample

All Laboratory Control Sample recoveries were within acceptable limits of control.

3. Blanks

All method blanks were free of contamination. No equipment blank was collected.

4. Duplicates

The RPD criterion for RRO was slightly high (31%). The results for RRO in samples AOC140916A0111MW08 and its duplicate.AOC140916DUP1 potentially have a higher than typical uncertainty associated with them.

5. Surrogates

All sample surrogate recoveries were within acceptable limits of control.

6. Comments

All data are complete and usable. The slightly high RPD between the field duplicate samples for RRO do not impact the usability of the data.

Tetra Tech, Inc. Data Review Report

Project Name: JBLM/Logistics Center/AOC
Project Number: K1410529
Collection Date: 9/22 – 9/23/2014
Laboratory: ALS Environmental, Kelso, WA

DATA REVIEW

- Thirty-two water samples including one field duplicate sample and two trip blank samples were collected and analyzed for VOCs. Six water samples along with 1 trip blank sample were collected and analyzed for TPH-Gx and six water samples including one field duplicate were collected and analyzed for TPH-Dx. A review was performed of the following parameters as applicable:
 - Chain-of-custody (C-O-C) documentation
 - Holding time compliance
 - Blank sample data
 - Laboratory Control Sample recovery
 - Matrix Spike sample recovery
 - Duplicate samples
 - Surrogate recoveries

Sample Identification:

AOC1409224131MW04 (TPH-Dx)	LGC140923LC10860-1	LGC140924LC61B-1
AOC1409224131MW05 (TPH-Dx)	LGC140923LC10885-1	LGC140924LC226-1
AOC1409224131MW02 (TPH-Dx)	LGC140923MT4-1	LGC140925SLAP5-1
AOC1409224131MW03 (TPH-Dx)	LGC140923MT3-1	LGC140925SLAP4-1
AOC140925AOC108B05 (TPH-Dx)	LGC140923MT2-1	LGC140925SLAP3-1
	LGC140923MT1-1	LGC140925SLAP1-1
AOC140925JPMW02 (TPH-Dx)	LGC140924FL1-1	TB-140922
TB-140922 (TPH-Gx)	LGC140924LC218-1	AOC14092210A178
AOC14092210A178 (TPH-Gx)	LGC140924LC224-1	AOC140922DUP2
AOC140922DUP2 (TPH-Gx)	LGC140924LC01-1	AOC14092295A172
AOC14092295A172 (TPH-Gx)	LGC140924LC116B-1	AOC14092307A177
AOC14092307A177 (TPH-Gx)	LGC140924LC111B-1	AOC14092395A173A
AOC14092395A173A (TPH-Gx)	LGC14092485PA382-1	AOC14092295A172MS
AOC14092295A172 (TPH-Gx)	LGC14092485PA384-1	AOC14092295A172DMS
TB-140923	LGC140924LC124-1	LGC140924LC01-1MS
LGC140923LC135-1	LGC1409624DUP2-1	LGC140924LC01-1DMS
LGC140923LC10830-1	LGC140924LC122B-1	

Review Summary

1. Holding Time

All holding times were met. The cooler arrived at acceptable temperature levels.

2. Laboratory Control Sample

All laboratory control sample recoveries were within acceptable limits of control except for those noted below.

LCS Date	Analyte	LCS recovery	Samples Impacted
10/3/2014	Acetone	141	AOC14092210A178
10/3/2014	2,2-Dichloropropane	64	AOC14092210A178
10/4/2014	Acetone	141	AOC140922DUP2 AOC14092395A173A
10/6/2014	Acetone	150	LGC140924FL1-1 LGC140924LC116B-1 LGC140924LC61B-1 LGC140924LC226-1
10/6/2014	2,2-Dichloropropane	62	LG140925SLAP4-1 LG140925SLAP3-1 LG140925SLAP1-1

All non-detect results for 2,2-dichloropropane in the samples listed are potentially biased low and should be considered as estimated with the potential for false negatives. The positive results for acetone in the sample listed above are potentially biased high, possible false positives and should be considered as estimated.

Cal Date/Cal Type	Analyte	Cal precision	Samples Impacted
10/4/2014	Carbon disulfide	-40	LGC140923LC138-1 LGC140923LC10830-1 LGC140923LC10860-1 LGC140923LC10885-1 LGC140923MT4-a LGC140923MT3-1 LGC140923MT2-1 LGC140923MT1-1 AOC14092307A177 AOC14092395A173A AOC140922DUP2
	2,2-dichloropropane	-45	

3. Blanks

Acetone, methylene chloride, trichloroethene, TPH-Dx (DRO and RRO) were detected in the field trip blank and/or laboratory method blanks. The methylene chloride detected in the field trip blank was below the levels in the laboratory method blanks which were used in the data evaluation. Acetone and methylene chloride are common laboratory contaminants. Listed below are the samples and analytes potentially impacted by the detected blank contamination. The reported sample results are potentially biased high due to the blank contamination.

Sample	Analyte	Sample Concentration	Blank Contaminant Level
AOC140922413MW05	DRO	15 ug/L	39 ug/L
	RRO	29 ug/L	43 ug/L
AOC140925JPMW02	DRO	38 ug/L	39 ug/L
	RRO	58 ug/L	43 ug/L
LGC140923LC10860-1	Trichloroethene	0.38 ug/L	0.11 ug/L
LGC140923LC10885-1	Trichloroethene	0.32 ug/L	0.11 ug/L
LGC140924FL1-1	Acetone	3.3 ug/L	3.5 ug/L
LGC140924LC116B-1	Acetone	3.3 ug/L	3.5 ug/L
LGC140924LC61B-1	Acetone	5.3 ug/L	3.5 ug/L
LGC140924LC226-1	Acetone	4.5 ug/L	3.5 ug/L
AOC14092295A172	Methylene chloride	0.11 ug/L	0.42 ug/L
AOC140922DUP2	Trichloroethene	0.15 ug/L	0.11 ug/L
AOC14092307A177	Trichloroethene	0.13 ug/L	0.11 ug/L

4. Matrix Spikes

2,2-Dichloropropane was recovered low in the matrix spike and matrix spike duplicate samples for AOC14092295A172-1 and LGC140924LC01-1. The non-detect results for 2,2-dichloropropane in the two samples are potentially biased low, possible false negatives, and should be considered as estimated. Four other compounds were recovered above criteria in the matrix spike and matrix spike duplicate samples for LGC140924LC01-1. All sample results were non-detect for these compounds and there is no impact on the reported data.

5. Duplicates

All field duplicates collected and analyzed were within acceptable limits for these samples.

6. Surrogates

All sample surrogate recoveries for the TPH-Gx, TPH-Dx, and VOC analyses are within acceptable limits of control.

7. Comments

All data are complete and usable with consideration of the biases noted above. Results for acetone in four samples, methylene chloride in one sample, trichloroethene in four samples and TPH-Dx (DRO and RRO) in two samples are likely due to blank contamination and biased high, potential false positives. Results for acetone (detected results), carbon disulfide (detected and non-detected results) and 2,2-dichloropropane (detected and non-detected results) in the samples noted are uncertain due to LCS recovery, MS/MSD recoveries and calibrations out of criteria.

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