



DRAFT

16 NOVEMBER 2017

ANNUAL GROUNDWATER MONITORING REPORT (November 2016 - August 2017)

ARTILLERY IMPACT AREA AND CENTRAL IMPACT AREA

Joint Base Lewis-McChord

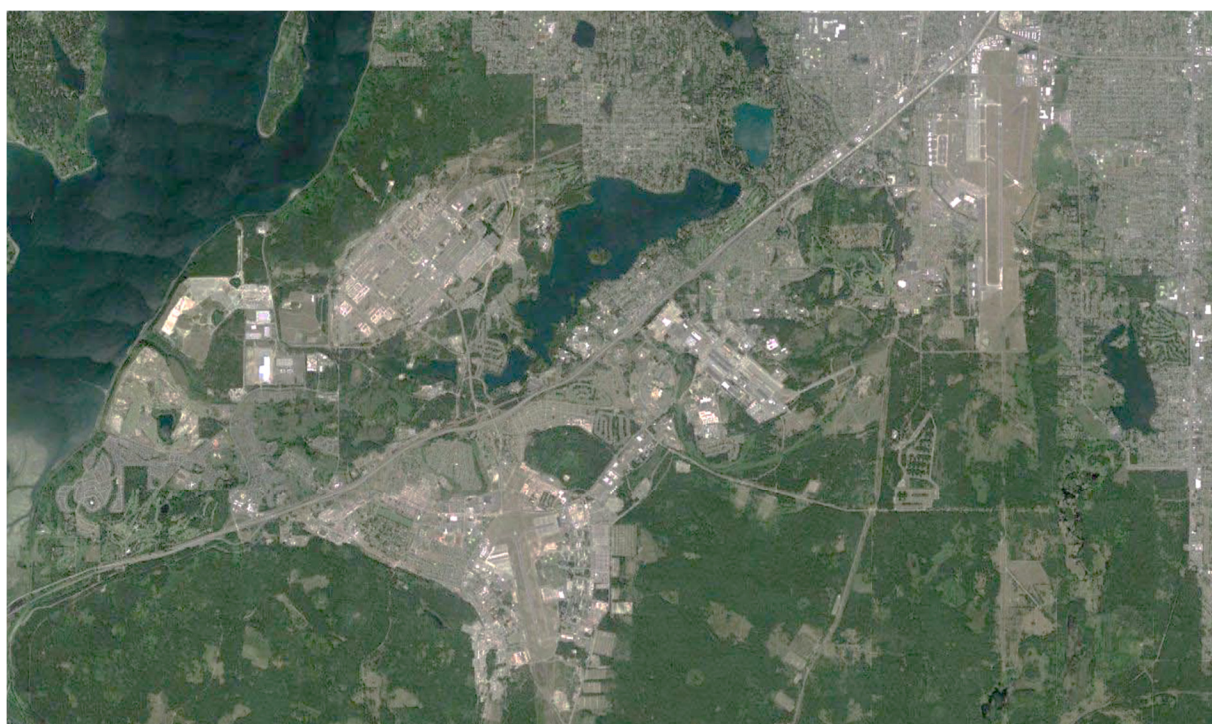
Pierce County, Washington

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

November 16, 2017

Public Works

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

Dear Mr. Hoffman:

Enclosed for your review is one paper copy of the Draft Annual Groundwater Monitoring Report (November 2016 – August 2017), Artillery and Central Impact Areas, Joint Base Lewis-McChord. As discussed previously, this report covers three sample events as opposed to the traditional two so that the annual reporting from here on can span one calendar year, not split years, as has been the case in the past. This document contains groundwater level measurements and hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) results from groundwater samples collected on November 1, 2016, April 10, 2017, and August 28, 2017. Joint Base Lewis-McChord is voluntarily monitoring 11 wells, five springs, and one potable water source for RDX.

The majority of the RDX concentrations in samples collected from springs and existing monitoring wells around the Artillery Impact Area have shown a decreasing trend since 1999. RDX was not detected at or above the Washington State Department of Ecology's Cleanup Level and Risk Calculation of 0.8 µg/L in samples collected during any of the monitoring events. RDX was not detected in the samples collected from the Clear Creek fish hatchery's kitchen sink.

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

Sincerely,

GHEBRESLASSIE.ME
SERET.C.1015675159

Digitally signed by
GHEBRESLASSIE.MESERET.C.1015675159
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA,
cn=GHEBRESLASSIE.MESERET.C.1015675159
Date: 2017.11.16 16:02:26 -0800

Meseret C. Ghebreslassie
Installation Restoration Program Manager

DRAFT

ANNUAL GROUNDWATER MONITORING REPORT
(NOVEMBER 2016 - AUGUST 2017)

ARTILLERY IMPACT AREA AND CENTRAL IMPACT AREA

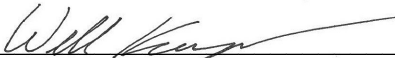
CONTRACT NO. W912DW-11-D-1031, TASK ORDER 0001

NOVEMBER 16, 2017

JOINT BASE LEWIS-MCCHORD
PIERCE COUNTY, WASHINGTON


SEALASKA ENVIRONMENTAL SERVICES, LLC
POULSBO, WASHINGTON

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20

1

ACRONYMS AND ABBREVIATIONS

2	AIA	Artillery Impact Area
3	CIA	Central Impact Area
4	CLARC	Cleanup Level and Risk Calculation
5	Ecology	Washington Department of Ecology
6	EPA	Environmental Protection Agency
7	IDW	investigation-derived waste
8	IRP	Installation Restoration Program
9	JBLM	Joint Base Lewis-McChord
10	µg/L	micrograms per liter
11	MTCA	Model Toxics Control Act
12	ND	non-detect
13	RCRA	Resource Conservation and Recovery Act
14	RDX	1,3,5-Trinitroperhydro-1,3,5-triazine (also known as Research
15		Department Explosive)
16	RPD	relative percent difference
17	Sealaska	Sealaska Environmental Services, LLC

1 INTRODUCTION

2 This Groundwater Monitoring Report documents the three groundwater sampling events
3 conducted from November 2016 through August 2017 at the Artillery Impact Area (AIA)
4 and Central Impact Area (CIA), Joint Base Lewis-McChord, Washington (Figures 1-1 and
5 1-2). The third sampling event in August 2017 was included in this report so that the annual
6 reporting coincides with the calendar year from now on. These were the 45th, 46th, and 47th
7 rounds of sampling since the beginning of the AIA and CIA voluntary monitoring project in
8 November 1999. This Groundwater Monitoring Report was prepared for Joint Base Lewis-
9 McChord (JBLM) Public Works, Environmental Division by Sealaska Environmental
10 Services, LLC (Sealaska). All 2017 monitoring was completed in general accordance with
11 the 2016 Groundwater Monitoring Plan (Sealaska 2017) while the 2016 monitoring was
12 completed in accordance with the preceding plan (2005 Groundwater Monitoring Plan;
13 Bussey 2005). The third quarter sampling events (November 2016 and August 2017) are
14 considered the “dry” season events and the first quarter (April 2017) event is considered the
15 “wet” season event.

16 1.1 PROJECT BACKGROUND

17 JBLM Public Works began conducting groundwater monitoring activities in the JBLM
18 Impact Areas in 1999. Sealaska assumed responsibility of monitoring activities in 2014.
19 Monitoring locations, past and current, include: 18 monitoring wells, five springs, and a
20 kitchen sink at the Clear Creek fish hatchery, located west of the AIA (Figure 1-3). Nine
21 upper Vashon Aquifer wells (98-IA-MW01 through 98-IA-MW04 and 98-IA-MW06
22 through 98-IA-MW10), one lower Vashon Aquifer well (98-IA-MW05), and one Sea Level
23 Aquifer well (98-IA-MW11) were installed during a URS preliminary investigation
24 conducted between 1998 and 1999 (URS 2000). Four upper Vashon Aquifer monitoring
25 wells (01-IA-MW11 through 01-IA-MW14) and one Sea Level Aquifer well (01-IA-MW15)
26 were installed in 2001. In addition, three existing upper Vashon Aquifer wells installed at
27 other sites (MW-3-3138, PA-384, and MW-1-9700) are used for Impact Areas groundwater
28 monitoring. Monitoring well construction details are presented in Table 1-1. The five
29 springs (AIA-SP01 through AIA-SP05) are discharges of Vashon Aquifer groundwater at
30 the Nisqually River bluff located along the western extent of the AIA.

31 URS conducted groundwater monitoring events in June 1999, November 1999, and
32 April 2000. The Fort Lewis Water Program conducted quarterly groundwater monitoring
33 events between August 2000 and April 2005. Groundwater samples were then analyzed for

1 nitroaromatics/nitramines, metals, and various inorganic parameters. Other important
2 monitoring activities completed during this timeframe include: perchlorate sampling during
3 the November 2000 and November 2002 groundwater monitoring events, surface water
4 sampling during the first five monitoring events, sediment sampling, and comprehensive
5 groundwater level surveys by URS. Based on results of monitoring activities it was
6 determined that the only contaminant of concern present in groundwater at the AIA is 1,3,5-
7 Trinitroperhydro-1,3,5-triazine (RDX, also known as the Research Department Explosive).

8 The Fort Lewis Compliance Cleanup Program (now the Installation Restoration Program
9 [IRP]) began conducting semiannual groundwater sampling events for select monitoring
10 locations and analytes in September 2005 in accordance with the 2005 Groundwater
11 Monitoring Plan (Bussey 2005).

12 Currently there are no Model Toxics Control Act (MTCA) Method A, B, or C groundwater
13 cleanup levels for RDX. RDX concentrations detected in groundwater samples collected
14 from monitoring wells, springs, and the Clear Creek fish hatchery's kitchen sink are
15 compared to Washington Department of Ecology's (Ecology) Cleanup Level and Risk
16 Calculation (CLARC) Method B standard formula value for RDX in groundwater of
17 0.8 micrograms per liter ($\mu\text{g/L}$).

2 FIELD ACTIVITIES

1
2 An electronic water level indicator was used to measure depth to water to the nearest 0.01-
3 foot from the top of the polyvinyl chloride (PVC) casing in monitoring wells. Standard low-
4 flow purging procedures were used to purge water prior to sampling from each of the
5 monitoring wells. Dedicated, submersible Grundfos Redi-Flo2 pumps with dedicated
6 Teflon-lined polyethylene tubing were used for purging (except for well 98-IA-MW05, in
7 which a separate submersible pump was used). A variable frequency drive controller was
8 used to limit the purging flow rate to less than 1 liter per minute. During purging, water
9 levels were monitored with an electronic water level indicator and for water quality
10 parameters: pH, specific conductivity, temperature, dissolved oxygen, turbidity, and oxygen-
11 reduction potential using a pre-calibrated Horiba meter to verify stabilization. Groundwater
12 samples were collected in un-preserved 1-liter amber bottles immediately after field
13 measurements had stabilized. Water quality parameter data is presented in Table 2-1.

14 On November 1, 2016, depth to water was measured in monitoring wells: 98-IA-MW01
15 through 98-IA-MW08 and 01-IA-MW11 through 01-IA-MW13. Three monitoring wells
16 (98-IA-MW01, 98-IA-MW03, and 98-IA-MW04) and five springs (AIA-SP01 through AIA-
17 SP05) were sampled. Wells 98-IA-MW02 and 98-IA-MW05 did not contain enough water
18 to be sampled in November 2016. This was consistent with dry season sampling events in
19 previous years, so the lack of water was not unexpected. All of the monitoring wells listed
20 above are completed in the Vashon Aquifer and are located around the perimeter of the AIA.
21 A sample was also collected from the Clear Creek fish hatchery's kitchen sink during this
22 event. A duplicate sample was collected from 98-IA-MW01.

23 On April 10, 2017, depth to water was measured in monitoring wells: 98-IA-MW01 through
24 98-IA-MW03, 98-IA-MW06 through 98-IA-MW08, and 01-IA-MW11 through 01-IA-
25 MW13. Three monitoring wells (98-IA-MW01 through 98-IA-MW03) and three springs
26 (AIA-SP01 through AIA-SP03) were sampled. Access through the gate onto the AIA was
27 restricted during this event. Wells 98-IA-MW04 and 98-IA-MW05 and springs AIA-SP04
28 and AIA-SP05 are all located beyond the range access gate and due to the accessibility
29 issues, were not measured or sampled during the April 2017 event resulting in no duplicate
30 sample being collected.

31 On August 28, 2017, depth to water was measured in monitoring wells: 98-IA-MW01
32 through 98-IA-MW08 and 01-IA-MW11 through 01-IA-MW13. During this event, samples
33 were collected from five monitoring wells (98-IA-MW01 through 98-IA-MW05), five

1 springs (AIA-SP01 through AIA-SP05), and the Clear Creek fish hatchery's kitchen sink. A
2 duplicate sample was collected from 98-IA-MW01.

3 Groundwater elevation iso-contours for the three events are presented on Figure 1-3.

4 Samples were analyzed for nitroaromatics and nitramines using United States
5 Environmental Protection Agency (EPA) Method SW846-8330. Samples were transported
6 via courier to ALS Laboratories, Inc. in Kelso, Washington at the end of the sampling event
7 under proper chain of custody procedures. Copies of completed field forms, analytical
8 reports, and chain of custody forms are included in Appendix A.

9 During the November 2016 sampling event, approximately 8.5 gallons of purge and
10 decontamination water was collected and held for sampling in a poly container at the
11 Landfill 2 treatment area awaiting analysis. The water was sampled and results were below
12 cleanup criteria (less than 0.8 µg/L) for RDX. Once results were received and noted to be
13 below cleanup criteria, the water was transferred to the Landfill 2 treatment plant
14 investigation-derived waste (IDW) tank before discharge through the treatment system.
15 Disposable personal protective equipment (e.g., nitrile gloves) and other garbage were
16 disposed of in the Sealaska dumpster as part of the normal solid waste stream.

17 During the April and August 2017 sampling events, approximately 7 and 18 gallons,
18 respectively, of combined purge and decontamination water was collected and held for
19 sampling in a poly container at the Landfill 2 treatment area awaiting analysis. The water
20 was sampled and results for both events were below cleanup criteria for RDX. The water
21 was then transferred to the Landfill 2 treatment plant IDW tank before discharge through the
22 treatment system. Disposable personal protective equipment (e.g., nitrile gloves) and other
23 garbage were disposed of in the Sealaska dumpster as part of the normal solid waste stream.

3 RESULTS

This section presents RDX analytical results for all samples collected during the sampling events occurring November 2016 through August 2017.

3.1 GROUNDWATER ELEVATIONS AND FIELD PARAMETER MEASUREMENTS

Current and historical groundwater elevations and field parameter measurements are presented in Table 2-1. Groundwater elevations and elevation iso-contours for all three events are presented on Figure 1-3. Groundwater flow is generally toward the west and discharges into the Nisqually Valley as springs along the Nisqually River bluff. During the April 2017 event, groundwater elevation data in wells 98-IA-MW04 and 98-IA-MW05 was unable to be collected as access to the site was restricted.

3.2 ANALYTICAL RESULTS

RDX was not detected above the cleanup level in any samples collected during the three sampling events (Figure 3-1). Current and historical RDX and Resource Conservation and Recovery Act (RCRA)-8 metals concentrations are presented in Table 3-1. RDX concentration trends in selected monitoring wells (98-IA-MW01 through 98-IA-MW05 and 98-IA-MW07) are presented on Figure 3-2. These monitoring wells are located along the Nisqually Bluff between the AIA and springs. RDX concentration trends in springs (AIA-SP01 through AIA-SP05) are presented on Figure 3-3. Since groundwater flow is generally from the AIA to the springs, it is most likely that RDX will be detected in samples collected from these wells before being detected in the springs.

RDX concentration data from the June 23 and November 9, 1999 sampling events were not used when generating Figures 3-2 or 3-3 because the laboratory recording limit was at 1.0 $\mu\text{g/L}$ which is above the cleanup level of 0.8 $\mu\text{g/L}$. Also, concentrations of RDX detected in samples collected from 98-IA-MW01, 98-IA-MW02, and 98-IA-MW04 in June 1999 have been rejected due to matrix interference at the laboratory.

1 **4 DATA QUALITY REVIEW AND VERIFICATION**

2 The data quality review and verification documentation for this groundwater monitoring
3 event were included in Appendix A. Data quality objectives for the groundwater monitoring
4 event were met. The data from the groundwater sampling event was deemed acceptable for
5 use and comparison with other site data.

6 The relative percent differences (RPDs) for the field duplicates are presented in Table 4-1.
7 Field duplicate RPDs are within a reasonable range (i.e., < 50% for groundwater samples).

5 DATA ANALYSIS AND DISCUSSION

Analysis of RDX data was performed to help support interpretation and evaluation of RDX concentrations detected in groundwater. Summary statistics were calculated on all of the sampled monitoring wells and springs, as well as the fish hatchery using Microsoft Excel's Descriptive Statistics tool. Further statistical analysis was performed on data from monitoring wells and springs whose dataset did not have half or over half of their data points as non-detect. These included monitoring wells 98-IA-MW01 through 98-IA-MW04 and springs AIA-SP01 through AIA-SP04.

Shapiro-Wilk test for normality, linear regression analysis, and the Mann-Kendall test for trend were performed on the data using a Microsoft Excel add in; Analyse It. The Mann-Kendall test was performed on non-parametric RDX data. Statistical methods generally followed the guidelines presented in Helsel and Hirsch's *Statistical Methods in Water Resources* (2002).

All concentration measurements not known to be in error were considered valid. Suspect "outliers" were not removed from the data set and were included in the graphs. Non-detect (ND) data, which represent concentration measurements below the analytical reporting limits, were evaluated at the reporting limit value (i.e., if the reporting limit was 0.1 µg/L and the analytical result was ND, then the concentration was set at 0.1 µg/L).

Graphs with the results of the statistical analyses are provided in Appendix B.

5.1 SUMMARY STATISTICS OF RDX CONCENTRATIONS

Table 5-1 presents summary descriptive statistics of RDX concentration data for each monitoring well, spring, and the Clear Creek fish hatchery's kitchen sink. The summary includes the following:

- Well ID
- First sample date
- Last sample date
- Number of samples in dataset
- Number of NDs in dataset
- Sample mean
- Standard deviation
- Minimum RDX concentration in dataset

- 1 • Maximum RDX concentration in dataset
- 2 • The date the sample with the maximum concentration of RDX was collected
- 3 • Dataset normally or log-normally distributed

4 **5.2 SHAPIRO-WILK TEST FOR NORMALITY**

5 Prior to analyzing RDX concentration data for trends, the data was tested for normal
6 distribution. The null and alternate hypotheses are a summary of a test’s objectives which in
7 this case is to test for the data’s distribution. The null hypothesis, or what is assumed to be
8 true before given evidence that it may be false, for all tests for normality is that a dataset is
9 normally distributed. The alternate hypothesis, then, is that a dataset is not normally
10 distributed (Helsel and Hirsch 2002). A significance level, or alpha level, of 0.05 was used
11 when determining whether concentrations from monitoring wells were normally distributed
12 or not. P values, generated using the Shapiro-Wilk test for normality, were then compared to
13 the alpha level. The alpha level is the “cutoff” point for the test statistic in making a decision
14 whether the data was normally distributed or not. P values show the strength of the test in
15 determining whether the data was normally distributed or not. P values range from 0 to 1,
16 the closer a P value is to 1 the better the dataset is normally distributed. P values equal to or
17 below 0.05 (alpha level) were not considered normally distributed.

18 Datasets that were not considered normally distributed were then transformed by taking the
19 natural log of the original values. This is generally the most common transformation of
20 water resources data. The Shapiro-Wilk test for normality was run on the transformed data
21 with the same criteria as the datasets above. Three sample locations (98-IA-MW02, AIA-
22 SP03, and AIA-SP04) were determined to have normally distributed or log normally
23 distributed data sets and, based on the results of the normality and linear regression testing,
24 all three locations were shown to have decreasing trends. Well 98-IA-MW02 and spring
25 AIA-SP03 showed statistically significant decreasing trends while spring AIA-SP04 showed
26 a not statistically significant decreasing trend. Results of the Shapiro-Wilk test are included
27 in Table 5-2. Trends for RDX concentrations for 1999-2017 are provided in Figure 5-1.






28 **5.3 LINEAR REGRESSION AND MANN-KENDALL TREND ANALYSES**

29 Linear regression trend analyses were conducted on RDX concentration data that was found
30 to be normally or log normally distributed. This included data from monitoring well 98-IA-
31 MW02 and springs AIA-SP03 and AIA-SP04. In this instance, the null hypothesis for the
32 test is that there is no trend in the data (Helsel and Hirsch 2002). The alpha level for the
33 linear regression analysis was set at 0.05. P values generated by the analysis were then

1 compared to the alpha level. P values less than the alpha value suggested a trend in the data.
2 Results are presented in Table 5-2.

3 The Mann-Kendall test for trend was performed on data that was not normally or log-normally
4 distributed (non-parametric data). This test was performed on data from monitoring wells (98-
5 IA-MW01, 98-IA-MW03, and 98-IA-MW04) as well as springs (AIA-SP01 and AIA-SP02). No
6 assumptions need to be made about the distribution of the data in order to perform the Mann-
7 Kendall test (Helsel and Hirsch 2002). The null hypothesis is the same as the linear regression
8 test above in that there is no trend in the data. The alpha level for the Mann-Kendall analysis was
9 set at 0.05. P values generated by the analysis were then compared to the alpha level. P values
10 less than the alpha value suggested a trend in the data. Results are presented in Table 5-3.

11 Well locations and their current data trends (both linear regression and Mann-Kendall) are
12 shown on Figure 5-1. Symbols for each monitoring well are colored depending on their
13 data's trend and statistical significance as follows:

- 14 • Red – RDX concentrations are statistically increasing. 
- 15 • Yellow – RDX concentrations are increasing, however; not statistically. 
- 16 • Green – RDX concentrations are decreasing, however; not statistically. 
- 17 • Blue – RDX concentrations are statistically decreasing. 
- 18 • Clear – No statistical analysis was run on the data. 

19 Data were not analyzed for samples where half of the results were non-detect (clear symbol).

20 **5.4 TREND ANALYSES RESULTS**

21 The trend analyses results are as follow:

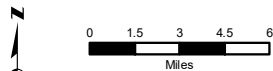
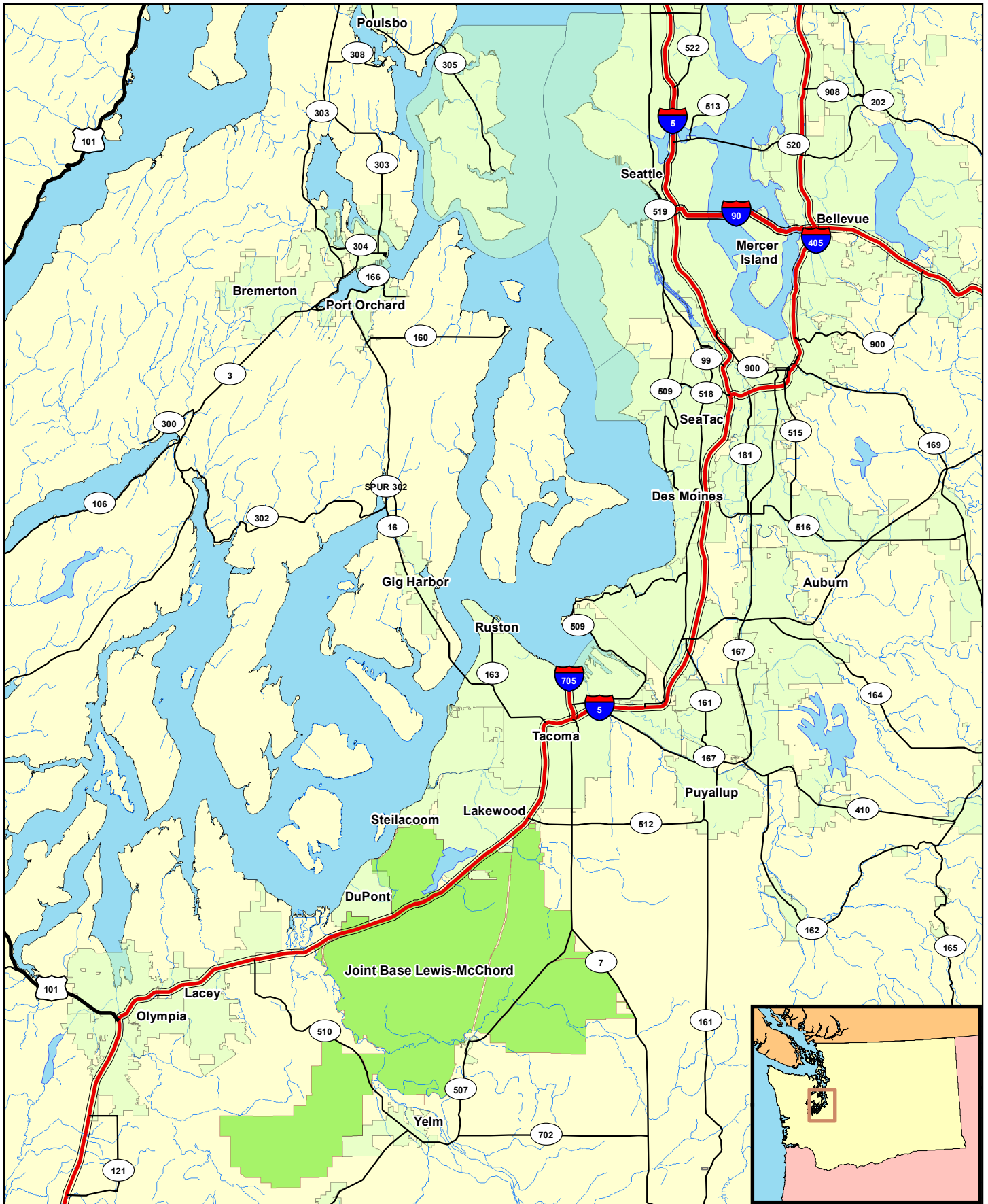
- 22 • Well 98-IA-MW05, the Clear Creek fish hatchery's kitchen sink, and spring AIA-
23 SP05 were not evaluated because over half of their dataset's results were non-detect.
- 24 • Three monitoring wells (98-IA-MW01, 98-IA-MW02, and 98-IA-MW04) had
25 statistically decreasing trends in their data.
- 26 • One monitoring well (98-IA-MW03) had a statistically increasing trend in its data.
- 27 • Three springs (AIA-SP01 through AIA-SP03) had statistically decreasing trends in
28 their data.
- 29 • One spring (AIA-SP04) had a decreasing trend in its data; however; not statistically
30 significant.

6 REFERENCES

1

- 2 Bussey, Troy. 2005. Groundwater Monitoring Plan for Impact Areas, November 2005.
- 3 Helsel, D. R. and R. M. Hirsch. 2002. *Chapter A3 Statistical Methods in Water Resources.*
4 Book 4 - Hydrologic Analysis and Interpretation. Techniques of Water – Resources
5 Investigations of the United States Geological Survey. 2002.
- 6 Sealaska (Sealaska Environmental Services, LLC). 2017. Final 2016 Groundwater
7 Monitoring Plan, Artillery Impact and Central Impact Areas, Joint Base Lewis-
8 McChord, Pierce County, Washington. Prepared by Sealaska for US Army Corps of
9 Engineers, under Contract No. W912DW-11-D-1031. Poulsbo, Washington.
10 February 3, 2017.
- 11 URS. 2000. Preliminary Investigation Report of Groundwater Monitoring for Munitions
12 Contamination, Artillery Impact Area and Central Impact Area, Joint Base Lewis-
13 McChord, Washington, June 2000.

FIGURES

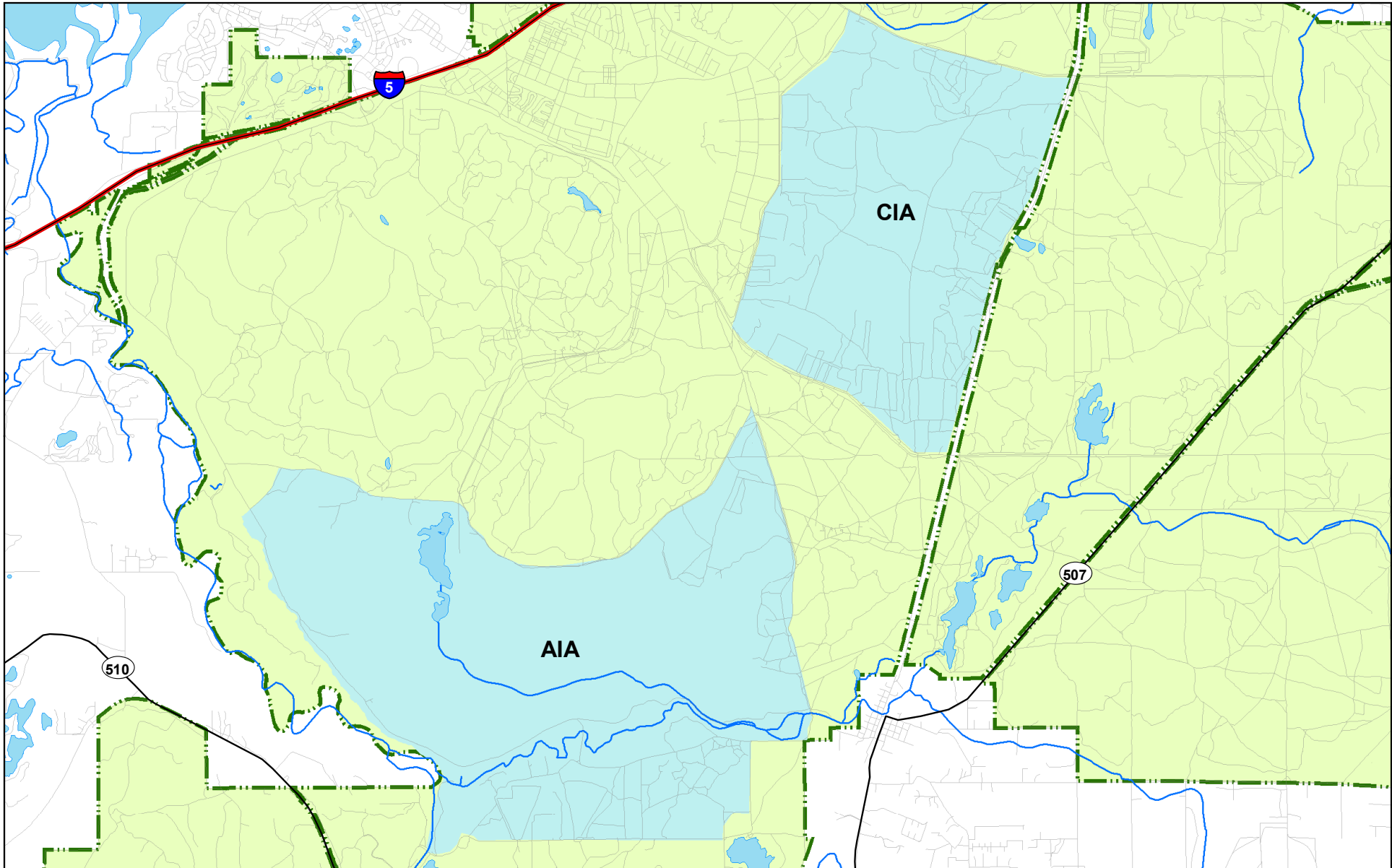


Map Data:
 Coordinate System: UTM Zone 10
 Horizontal Datum: WGS 84

 City Limit
 JBLM

USACE SEALASKA

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



Legend

- Interstate
- State Route
- Streams
- Impact Area
- JBLM Boundary

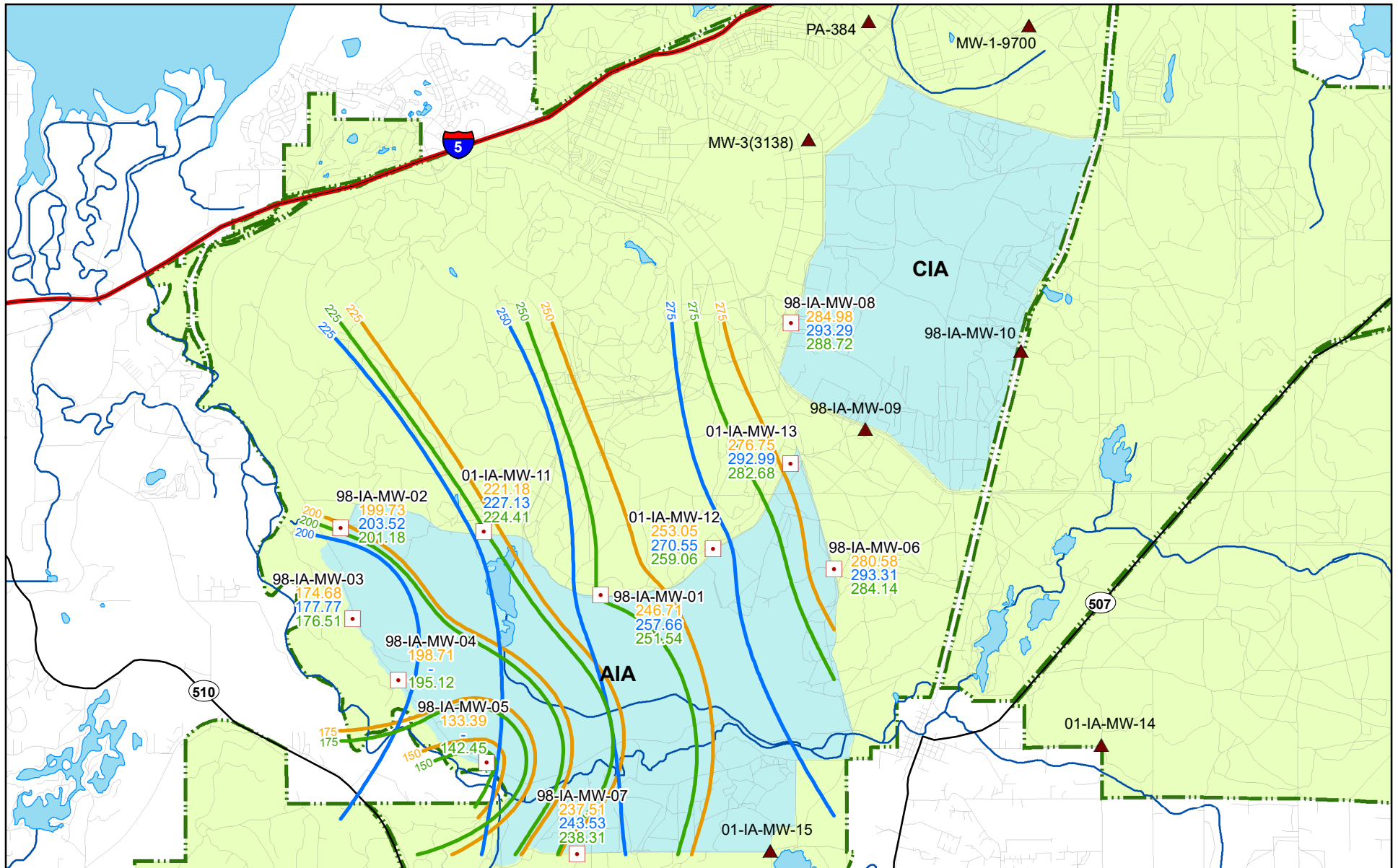
Map Data:
 Coordinate System: UTM, Zone 10
 Horizontal Datum: WGS 84

0 0.375 0.75 1.5
 Miles

USACE



**Figure 1-2
 Artillery Impact and
 Central Impact Areas
 Location Map**



- Monitoring Well: DTW Measured
- ▲ Monitoring Well: Not Monitored
- Aug. 2017 GW Elev.
- Apr. 2017 GW Elev.
- Nov. 2016 GW Elev.
- Streams
- Impact Area
- JBLM Boundary

Label ID	
98-IA-MW-03 - Well ID	
174.68 - Nov 2016 WL	
177.77 - Apr 2017 WL	
176.51 - Aug 2017 WL	

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

Miles

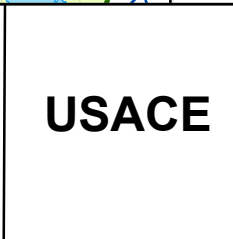


Figure 1-3
AIA Dry/Wet/Dry Season
Water Table Contours



<ul style="list-style-type: none"> ● Monitoring Well ● Spring — Streams Impact Area JBLM Boundary 	<p>Label ID</p> <p>98-IA-MW-03 - Well ID</p> <p>0.40 - Nov 2016 RDX (µg/L)</p> <p>0.44C - Apr 2017 RDX (µg/L)</p> <p>0.44 - Aug 2017 RDX (µg/L)</p>
--	--

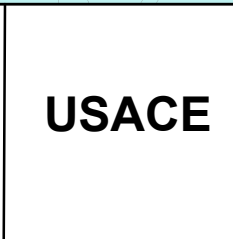
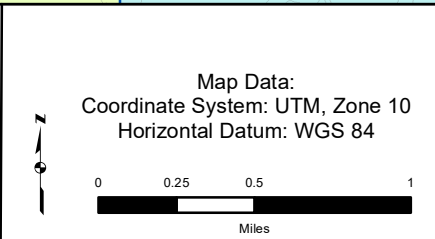


Figure 3-1
AIA Dry/Wet/Dry Season
RDX Concentrations

Figure 3-2. Select Wells RDX Concentrations over Time

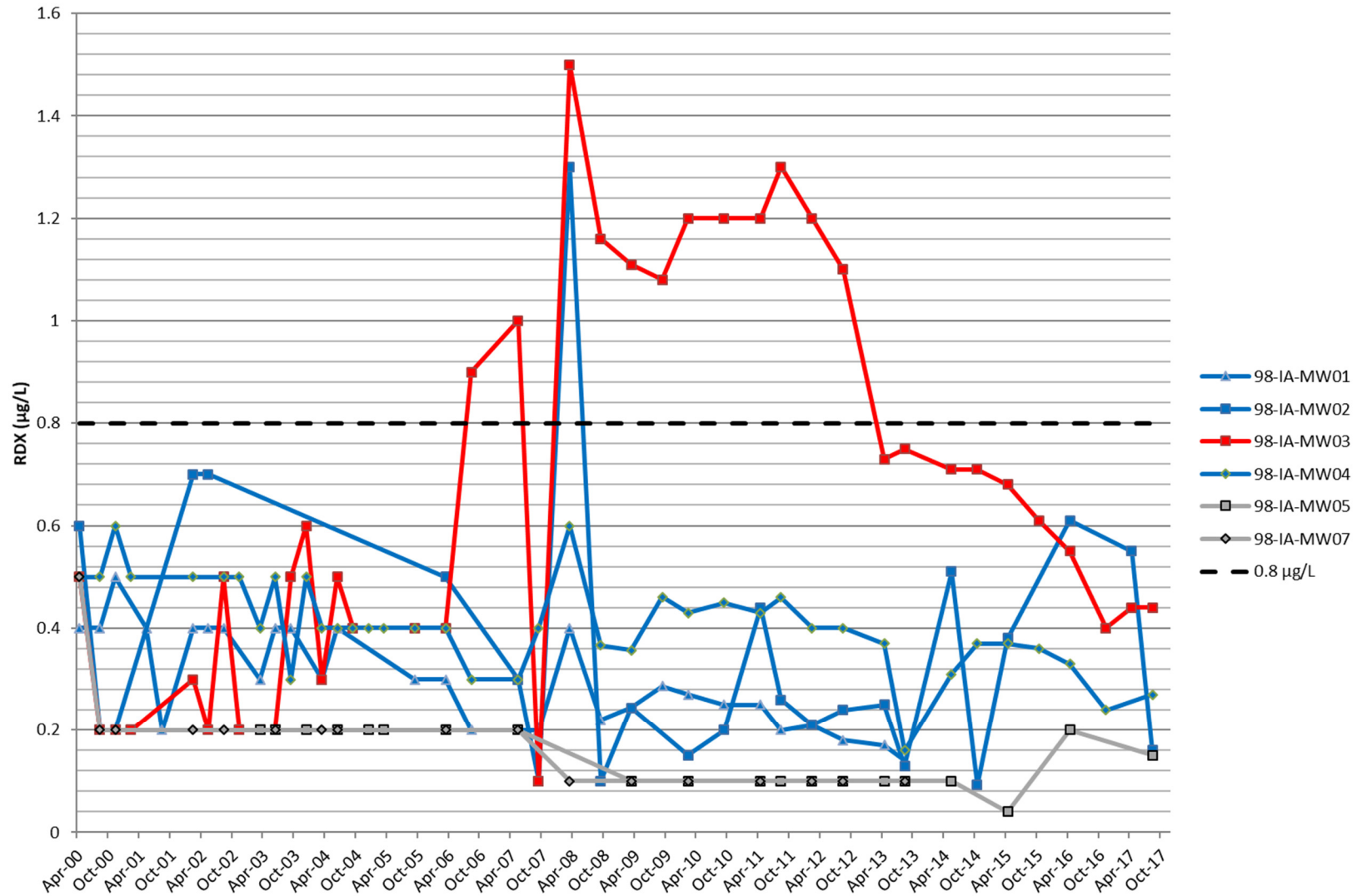
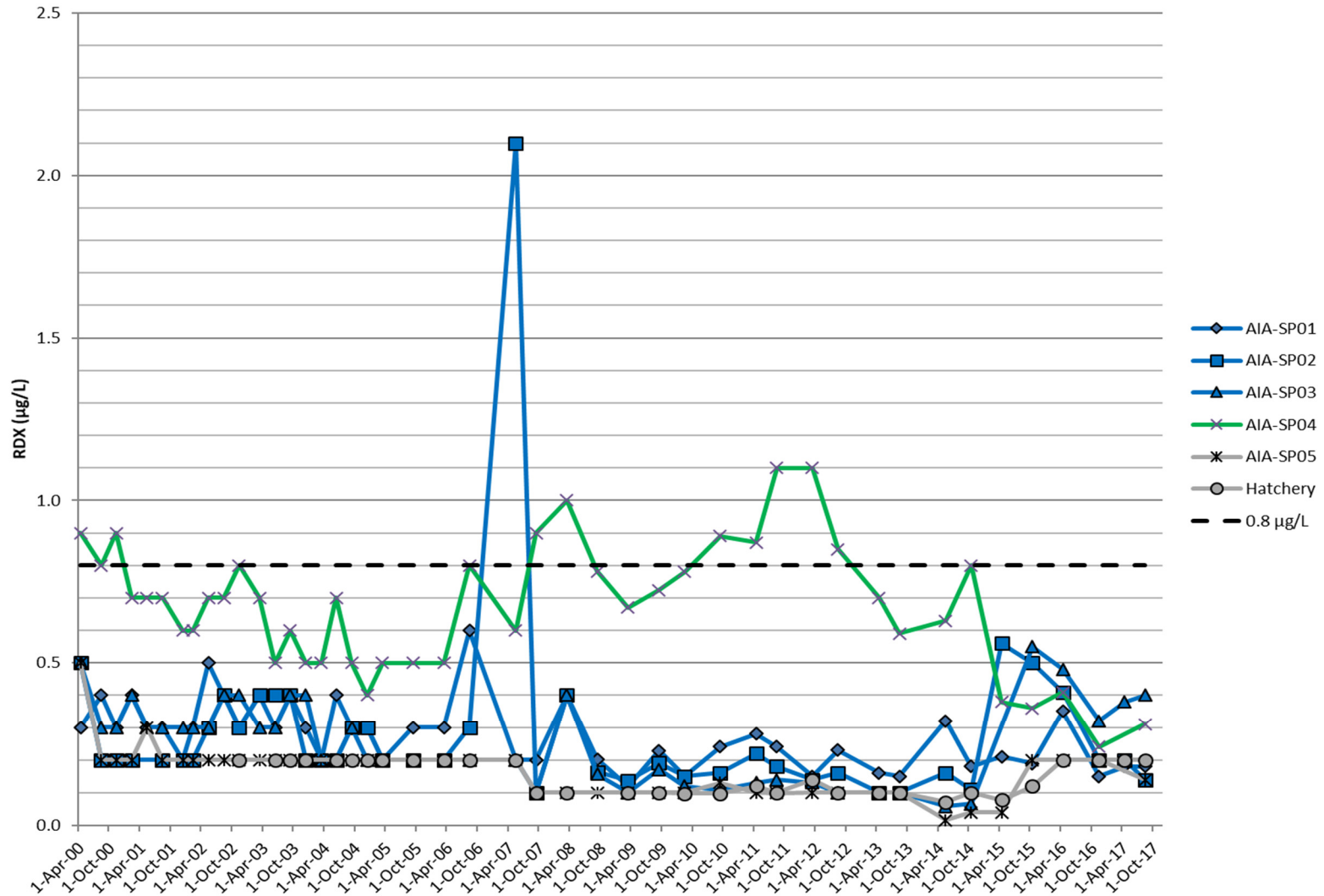


Figure 3-3. Spring and Hatchery RDX Concentrations over Time





Legend

- Statistically Significant Increasing Trend
- Not Statistically Significant Increasing Trend
- Not Statistically Significant Decreasing Trend
- Statistically Significant Decreasing Trend
- Data Not Analyzed
- Streams
- Impact Area
- JBLM Boundary

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

0 0.25 0.5 1
 Miles



Figure 5-1
AIA RDX Concentration
Current Trends
(1999-2017)

TABLES

Table 1-1 - Sampling Location Information and Monitoring Well Construction Details
 Artillery Impact Area, Joint Base Lewis-McChord, Washington

Location ID	Area ID	Easting UTM NAD 83	Northing UTM NAD 83	Elevation (ft AMSL)	Well Depth (ft bgs)	Screen Top (ft bgs)	Screen Bottom (ft bgs)	Completion Date
98-IA-MW01	AIA - Central	529745.99	5208145.64	286.7	46	41	46	18-Dec-98
98-IA-MW02	AIA Downgradient	525635.10	5209346.77	235.4	40	35	40	10-Dec-98
98-IA-MW03	AIA Downgradient	525720.70	5208062.81	244.2	78	73	78	12-Feb-99
98-IA-MW04	AIA Downgradient	526747.86	5206522.07	246.9	63	58	63	18-May-99
98-IA-MW05	AIA Downgradient	527552.17	5205614.88	257.1	122	117	122	31-Mar-99
98-IA-MW06	AIA Upgradient	533338.82	5208747.59	321.9	45	39.5	44.5	20-Dec-98
98-IA-MW07	AIA Downgradient	529258.70	5203982.70	291.0	55	50	55	27-Feb-99
98-IA-MW08	CIA Downgradient	532768.17	5212371.19	322.8	43	38	43	7-Jan-99
98-IA-MW09	CIA Downgradient	533995.06	5210687.78	333.0	50	44.25	49.25	20-Nov-98
98-IA-MW10	CIA Upgradient	536477.37	5211971.73	355.0	39	34	39	6-Jan-99
01-IA-MW11	AIA Downgradient	527746.49	5209147.04	266.78	65.5	59	64	18-Oct-01
01-IA-MW12	AIA Upgradient	531313.03	5208918.78	289.43	53.7	47	52	19-Oct-01
01-IA-MW13	AIA Upgradient	532539.91	5209774.75	315.43	69.6	62	67	22-Oct-01
01-IA-MW14	AIA Upgradient	537447.46	5205780.23	394.39	48	42.5	47.5	23-Oct-01
01-IA-MW15	AIA Downgradient	532311.65	5203982.70	363.61	208	203	208	17-Oct-01
85-PA-384	CIA Upgradient	534021.11	5216983.40	279.15	60.5	50.5	60.5	24-Jan-86
9700-MW1	CIA Upgradient	535818.16	5216704.44	277.68	20.08	5	20	9-Jan-96
MW-3(3138)	CIA Upgradient	533024.96	5215338.54	288.29	23	8	23	7-May-97
AIA-SP01	AIA Downgradient	524892	5208975	220	-	-	-	-
AIA-SP02	AIA Downgradient	525558	5208127	200	-	-	-	-
AIA-SP03	AIA Downgradient	526012	5207310	148.3	-	-	-	-
AIA-SP04	AIA Downgradient	526769	5206221	163.4	-	-	-	-
AIA-SP05	AIA Downgradient	528463	5205071	240	-	-	-	-
Hatchery	AIA Downgradient	-	-	-	-	-	-	-

Notes:

- PA-384 = Madigan Army Medical Center monitoring well
- 9700-MW1 = 9700 block monitoring well
- MW-3(3138) = Building 3138 monitoring well
- AIA-SP01 = Artillery Impact Area spring 01
- Hatchery = Tap water sample taken from fish hatchery kitchen sink
- ft AMSL = Feet above mean sea level
- ft bgs = Feet below ground surface
- = No data, not applicable
- Area ID = Monitoring wells are located along the perimeter of either the Artillery Impact Area (AIA) or Central Impact Area (CIA). Downgradient or upgradient is the relative position of the monitoring well to either the AIA or CIA depending on groundwater flow.

Table 2-1 - Depth to Water and Field Parameter Measurements
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID TOC	Date	DTW (ft bgs)	GWELEV (ft AMSL)	pH	Cond. (ms/cm)	Turbidity	DO (ppm)	Temp (°C)	ORP (mv)
98-IA-MW01 286.7	1-Jun-99	33.39	253.31	6.71	0.071	-	9.76	17.68	-
	1-Nov-99	38.4	248.3	6.53	0.067	-	11.54	12.95	-
	1-Apr-00	32.45	254.25	6.04	0.087	-	9.62	18	-
	1-Nov-00	36.8	249.9	6.4	0.087	-	9.7	12.2	-
	1-Aug-01	39.3	247.4	-	-	-	-	-	-
	5-Mar-02	48.7	238	6.23	0.101	-	10.54	11.6	-
	3-Jun-02	34.18	252.52	5.85	0.074	-	9.32	11.4	-
	26-Aug-02	37.3	249.4	5.86	0.069	-	11.36	11.5	-
	10-Mar-03	40.9	245.8	-	0.071	-	10.77	11.5	-
	3-Jun-03	35.9	250.8	6.7	0.08	-	9.6	12	-
	18-Sep-03	39.48	247.22	6.63	0.076	-	-	11.8	-
	5-Mar-04	36.04	250.66	6.2	0.077	-	9.82	11.4	-
	7-Jun-04	36.87	249.83	7.06	0.077	-	-	11.6	-
	21-Mar-05	39.41	247.29	5.73	0.072	-	-	11.6	-
	27-Sep-05	39.41	247.29	6.57	0.077	6	6.9	12.6	-
	27-Mar-06	31.6	255.1	5.97	0.061	-	-	12.6	-
	7-Aug-06	36.88	249.82	6	0.071	1	-	13	-
	2-May-07	31.61	255.09	6.54	0.073	1	-	11.9	-
	17-Sep-07	37.68	249.02	5.52	0.071	22	-	14.2	-
	24-Mar-08	34.68	252.02	7.27	0.075	10	-	12.2	-
	16-Sep-08	39.82	246.88	4.96	0.075	10	0.25 *	12.4	-
	9-Mar-09	37.2	249.5	6.83	0.078	10	10.57	11.8	304
	28-Sep-09	39.37	247.33	6.7	0.079	19	10.35	11.6	139
	26-Feb-10	35	251.7	6.5	0.081	1	10.5	11.7	133
	13-Sep-10	36.92	249.78	6.11	0.079	41	9.07	11.6	192
	4-Apr-11	31.91	254.79	4.9	0.082	1	10.1	11.4	347
	2-Aug-11	34.65	252.05	4.83	0.079	10	10.6	11.5	370
	27-Feb-12	36.63	250.07	7.05	-	-	-	11.6	17
	2-Aug-11	34.65	252.05	4.83	0.079	0	1.14 *	11.5	370
	6-Aug-12	35.16	251.54	7.78	-	-	-	12.4	9
	20-Apr-13	34.4	252.3	7.46	0.067	-	12.5	11.6	22
	26-Aug-13	37.75	248.95	6.45	0.079	-	12.08	11.4	24
	12-May-14	30.78	255.92	6.39	0.011	-	12.99	11.1	29
20-Oct-14	38.51	248.19	6.24	0.098	0.2	10.86	14.43	298	
13-Apr-15	32.59	254.11	6.33	0.111	3.7	10.15	12.74	160	
19-Oct-15	41.29	245.41	Well too dry to sample						
25-Apr-16	29.41	257.29	5.96	0.079	6	6306	14.88	181	
1-Nov-16	39.99	246.71	6.59	0.104	0	7.02	13.57	162	
10-Apr-17	29.04	257.66	6.54	0.107	0	9.24	12.6	176	
28-Aug-17	35.16	251.54	6.17	0.078	20	12.89	13.4	135	
98-IA-MW02 235.4	1-Jun-99	32.95	202.45	6.76	0.071	-	6.99	18.65	-
	1-Nov-99	34.9	200.5	6.46	0.092	-	10.01	12.31	-
	1-Apr-00	33.09	202.31	6.12	0.102	-	8.2	15.78	-
	1-Nov-00	35.65	199.75	6.73	0.093	-	7.35	12.2	-
	1-Feb-01	34.69	200.71	-	-	-	-	-	-
	1-May-01	Dry	-	-	-	-	-	-	-
	1-Aug-01	Dry	-	-	-	-	-	-	-
	5-Mar-02	34.15	201.25	6.1	0.082	-	8.9	12.8	-
	29-May-02	34.35	201.05	5.77	0.072	-	7.59	11.9	-
	26-Aug-02	35.45	199.95	-	-	-	-	-	-
10-Mar-03	Dry	-	-	-	-	-	-	-	
5-Mar-04	35.42	199.98	-	-	-	-	-	-	

Table 2-1 - Depth to Water and Field Parameter Measurements
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID TOC	Date	DTW (ft bgs)	GWELEV (ft AMSL)	pH	Cond. (ms/cm)	Turbidity	DO (ppm)	Temp (°C)	ORP (mv)	
98-IA-MW02 (cont)	27-Sep-05	Dry	-	-	-	-	-	-	-	
	27-Mar-06	33.22	202.18	5.82	0.066	-	-	12.6	-	
	7-Aug-06	Dry	-	-	-	-	-	-	-	
	2-May-07	32.96	202.44	6.86	0.068	13	-	12.3	-	
	17-Sep-07	35.33	200.07	5.68	0.002	-	-	12.8	-	
	24-Mar-08	34.58	200.82	7.23	0.086	7	-	12.8	-	
	16-Sep-08	35.7	199.7	4.71	0.086	10	1.64 *	12.8	-	
	9-Mar-09	35.5	199.9	-	-	-	-	-	-	
	28-Sep-09	35.66	199.74	-	-	-	-	-	-	
	26-Feb-10	34.9	200.5	6.44	0.083	-	8.03	12.8	182	
	13-Sep-10	35.12	200.28	5.92	0.085	3	5.6	11.9	212	
	4-Apr-11	32.95	202.45	4.6	0.081	-	6.72	12.3	133	
	2-Aug-11	34.11	201.29	5.25	0.08	-	1.19 *	11.7	293	
	27-Feb-12	35.01	200.39	7.04	-	-	-	12.6	18	
	6-Aug-12	34.42	200.98	7.62	-	-	1.96	12.5	13	
	20-Apr-13	34	201.4	7.8	0.074	-	1.96	12.7	8	
	26-Aug-13	35.35	200.05	6.16	-	-	7.14	12.7	41	
	12-May-14	32.45	202.95	Pumped Dry						
	20-Oct-14	35.85	199.55	6.18	0.115	169	12.06	12.84	300	
	13-Apr-15	33.48	201.92	6.51	0.122	19	7.94	10.57	142	
19-Oct-15	Dry	-	Well too dry to sample							
25-Apr-16	31.34	204.06	5.93	0.083	0	4.18	16.02	187		
1-Nov-16	35.67	199.73	Well too dry to sample							
10-Apr-17	31.88	203.52	6.49	0.135	0	6.77	15.07	175		
28-Aug-17	34.22	201.18	6.44	0.092	2.2	7.23	14.03	114		
98-IA-MW03 244.2	1-Jun-99	67	177.2	6.75	0.071	-	9.64	17.67	-	
	1-Nov-99	69	175.2	6.7	0.054	-	11.84	13.47	-	
	1-Apr-00	67.47	176.73	6.51	0.086	-	9.76	14.88	-	
	1-Nov-00	70.15	174.05	7.27	0.075	-	10.06	12.6	-	
	1-Feb-01	72.61	171.59	6.61	0.08	-	7.2	12.6	-	
	1-May-01	Dry	-	-	-	-	-	-	-	
	1-Aug-01	Dry	-	-	-	-	-	-	-	
	27-Feb-02	-	-	6.44	0.074	-	9.66	12.4	-	
	3-Jun-02	52.25	191.95	6.16	0.062	-	9.07	12	-	
	26-Aug-02	69.2	175	6.19	0.066	-	11.93	12.6	-	
	18-Nov-02	-	-	7.49	0.066	-	10.52	12	-	
	2-Jun-03	70.14	174.06	6.8	0.07	-	9.4	13	-	
	18-Sep-03	70.55	173.65	4.19	0.064	-	-	12.4	-	
	8-Dec-03	72.45	171.75	7.6	0.071	-	10.37	12.6	-	
	4-Mar-04	70.24	173.96	6.39	0.07	-	9.22	12.1	-	
	7-Jun-04	69.54	174.66	6.95	0.072	-	-	12.4	-	
	14-Sep-04	70.96	173.24	6.32	0.074	-	-	13.4	-	
	27-Sep-05	70.48	173.72	6.78	0.068	2	6.46	12.1	-	
	27-Mar-06	67.61	176.59	6.06	0.065	-	-	12.6	-	
	7-Aug-06	69.05	175.15	6.54	0.07	5	-	14.3	-	
20-Oct-06	70.28	173.92	5.6	0.066	3	-	12	-		
2-May-07	66.96	177.24	5.74	0.062	13	-	13.6	-		
17-Sep-07	69.02	175.18	6.57	0.062	-	-	13.1	-		
24-Mar-08	68.72	175.48	7.41	0.068	21	-	14	-		
29-Sep-08	70.56	173.64	5.26	0.056	10	-0.56 *	13	-		
9-Mar-09	71.2	173	5.21	0.071	10	9.45	12.4	114		

Table 2-1 - Depth to Water and Field Parameter Measurements
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID TOC	Date	DTW (ft bgs)	GWELEV (ft AMSL)	pH	Cond. (ms/cm)	Turbidity	DO (ppm)	Temp (°C)	ORP (mv)
98-IA-MW03 (cont)	28-Sep-09	70.05	174.15	6.68	0.073	2	9.94	12.4	129
	26-Feb-10	70.1	174.1	6.52	0.074	6	10.25	12.9	268
	13-Sep-10	-	-	5.82	0.073	56	8.72	12.7	197
	4-Apr-11	67.22	176.98	4.51	0.074	1	9.33	12.3	107
	1-Aug-11	67.7	176.5	4.6	0.073	1	0.92 *	12.8	195
	27-Feb-12	69.65	174.55	7.06	-	-	-	10	11
	6-Aug-12	68.3	175.9	8.03	-	-	3.64	12.4	-2
	20-Apr-13	68.36	175.84	8.01	0.067	-	2.59	12.2	0
	26-Aug-13	69.1	175.1	6.48	0.068	-	11.54	12	20
	12-May-14	66.78	177.42	6.57	0.099	-	11.01	11.8	20
	20-Oct-14	74.1	170.1	6.28	0.117	14.4	11.51	15.03	231
	13-Apr-15	67.7	176.5	6.52	0.104	22	8.81	14.28	121
	19-Oct-15	70.18	174.02	6.57	0.110	0	7.99	13.92	135
	25-Apr-16	65.45	178.75	6.44	0.092	0	5.36	17.55	131
	1-Nov-16	69.52	174.68	6.85	0.087	1.8	8.84	13.48	174
10-Apr-17	66.43	177.77	6.65	0.116	0	8.58	15.4	148	
28-Aug-17	67.69	176.51	5.82	0.08	0.1	11.39	16.02	157	
98-IA-MW04 246.9	1-Jun-99	50.58	196.32	6.59	0.061	-	9	16.77	-
	1-Nov-99	-	-	6.64	0.059	-	11.03	12.84	-
	1-Apr-00	51.29	195.61	6.25	0.87	-	9.87	14.68	-
	1-Nov-00	56.2	190.7	7.08	0.073	-	10.14	12.5	-
	1-Feb-01	58.15	188.75	6.45	0.078	-	7.81	12.2	-
	1-May-01	Dry	-	-	-	-	-	-	-
	1-Aug-01	Dry	-	-	-	-	-	-	-
	25-Feb-02	53	193.9	6.53	0.065	-	10.65	11.7	-
	29-May-02	68.25	178.65	6.17	0.072	-	8.5	13	-
	26-Aug-02	54.4	192.5	6.36	0.06	-	11.29	12	-
	12-Nov-02	-	-	7.02	0.063	-	10.43	11.6	-
	10-Mar-03	57.15	189.75	-	0.063	-	9.7	11.8	-
	2-Jun-03	55	191.9	6.7	0.07	-	9.8	13	-
	29-Sep-03	56.63	190.27	6.97	0.064	-	-	10.16	-
	5-Dec-03	57.3	189.6	6.14	0.65	-	10.93	11.8	-
	4-Mar-04	55.11	191.79	6.36	0.065	-	9.77	11.8	-
	7-Jun-04	54.65	192.25	7.02	0.063	-	9.96	12.6	-
	14-Sep-04	56.98	189.92	6.27	0.064	-	-	12.8	-
	20-Dec-04	59.12	187.78	6.67	0.065	-	-	11.6	-
	19-Mar-05	58.71	188.19	5.92	0.062	-	-	12.3	-
	27-Sep-05	56.05	190.85	6.79	0.059	7	7.52	13	-
	27-Mar-06	50.85	196.05	5.91	0.051	-	-	13.9	-
	7-Aug-06	54.33	192.57	6.59	0.061	22	-	14.3	-
	2-May-07	50.39	196.51	5.51	0.057	62	-	13.6	-
	17-Sep-07	54.55	192.35	6.23	0.064	-	-	13.1	-
	24-Mar-08	53.5	193.4	7.35	0.062	11	-	13.7	-
	29-Sep-08	56.55	190.35	5.95	0.054	10	1.06 *	13.9	-
9-Mar-09	56.35	190.55	5.74	0.07	10	9.26	12.5	320	
28-Sep-09	55.85	191.05	5.57	0.066	-	9.62	12.4	129	
26-Feb-10	54.7	192.2	6.26	0.066	1	9.66	12.2	180	
13-Sep-10	54.17	192.73	5.43	0.065	27	8.31	12.3	233	
4-Apr-11	50.46	196.44	4.26	0.062	-	9.16	12.2	104	
1-Aug-11	51.87	195.03	4.75	0.066	-	1.09 *	12.1	129	
27-Feb-12	54.6	192.3	7.05	-	-	-	12.6	18	

Table 2-1 - Depth to Water and Field Parameter Measurements
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID TOC	Date	DTW (ft bgs)	GWELEV (ft AMSL)	pH	Cond. (ms/cm)	Turbidity	DO (ppm)	Temp (°C)	ORP (mv)	
98-IA-MW04 (cont)	6-Aug-12	52.57	194.33	8.09	-	-	3.95	12.3	4	
	20-Apr-13	52.2	194.7	8.2	0.06	-	2.8	12.3	-9	
	26-Aug-13	54.55	192.35	6.29	0.063	-	11.75	12.2	19	
	12-May-14	49.87	197.03	6.67	0.095	-	12.1	11.7	16	
	20-Oct-14	54.65	192.25	4.17	0.001	136	11.27	14.68	256	
	13-Apr-15	51.26	195.64	6.50	0.096	1.9	6.5	13.99	132	
	19-Oct-15	56.32	190.58	5.83	0.105	0	7.77	14.76	186	
	25-Apr-16	48.19	198.71	6.4	0.075	0	5.29	16.22	150	
	1-Nov-16	55.33	191.57	6.8	0.092	0.7	7.22	14.07	174	
	10-Apr-17	Restricted Access								
28-Aug-17	51.78	195.12	5.92	0.082	0	8.81	17.52	135		
98-IA-MW05 257.1	1-Jun-99	115.76	141.34	6.92	0.044	-	9.41	15.39	-	
	1-Apr-00	114.47	142.63	6.32	0.7	-	10.28	15.62	-	
	1-Feb-01	123.6	133.5	-	-	-	-	-	-	
	1-May-01	Dry	-	-	-	-	-	-	-	
	1-Aug-01	Dry	-	-	-	-	-	-	-	
	12-Nov-02	123.65	133.45	-	-	-	-	-	-	
	10-Mar-03	115.55	141.55	-	0.052	-	10.36	11.6	-	
	2-Jun-03	120.16	136.94	6.9	0.06	-	10	13	-	
	4-Mar-04	114.35	142.75	6.52	0.056	-	10.16	11.8	-	
	7-Jun-04	123.69	133.41	-	-	-	-	-	-	
	14-Sep-04	123.67	133.43	-	-	-	-	-	-	
	20-Dec-04	123.71	133.39	-	-	-	-	-	-	
	19-Mar-05	121.81	135.29	-	-	-	-	-	-	
	27-Sep-05	Dry	-	-	-	-	-	-	-	
	27-Mar-06	114.11	142.99	6.31	0.048	-	-	12.2	-	
	7-Aug-06	Dry	-	-	-	-	-	-	-	
	2-May-07	115.17	141.93	5.64	0.046	1	-	13.1	-	
	17-Sep-07	Dry	-	-	-	-	-	-	-	
	29-Sep-08	Dry	-	-	-	-	-	-	-	
	9-Mar-09	115.36	141.74	7.06	0.057	10	9.74	12.8	299	
	28-Sep-09	Dry	-	-	-	-	-	-	-	
	26-Feb-10	113.5	143.6	6.02	0.058	4	9.02	13.1	159	
	13-Sep-10	Dry	-	-	-	-	-	-	-	
	4-Apr-11	112.36	144.74	3.96	0.061	-	-	12.3	108	
	1-Aug-11	114.5	142.6	4.46	0.056	-	0.13 *	12.9	347	
	27-Feb-12	113	144.1	7.06	-	-	-	10	11	
	6-Aug-13	115.15	141.95	8.29	-	-	3.65	13.2	13	
	20-Apr-13	112.73	144.37	8.7	0.054	-	1.82	13.6	-32	
	26-Aug-13	123	134.1	-	-	-	-	-	-	
	12-May-14	112.6	144.5	6.75	0.084	-	11.23	13.5	11	
	20-Oct-14	123.22	Well Dry							
	13-Apr-15	112.63	144.47	6.56	0.087	5	9.83	14.91	98	
	19-Oct-15	123.67	133.43	Well too dry to sample						
25-Apr-16	112.22	144.88	6.14	0.071	0	5.69	17.71	155		
1-Nov-16	123.71	133.39	Well too dry to sample							
10-Apr-17	Restricted Access									
28-Aug-17	114.65	142.45	6.41	0.071	0	9.2	15.77	119		
98-IA-MW06 321.9	1-Jun-99	35.32	286.58	6.4	0.076	-	5.37	16.08	-	
	1-Nov-99	40.4	281.5	6.21	0.088	-	12.74	11.19	-	
	1-Apr-00	31.66	290.24	5.88	0.115	-	18.76	16.14	-	

Table 2-1 - Depth to Water and Field Parameter Measurements
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID TOC	Date	DTW (ft bgs)	GWELEV (ft AMSL)	pH	Cond. (ms/cm)	Turbidity	DO (ppm)	Temp (°C)	ORP (mv)
98-IA-MW06 (cont)	1-Nov-00	37.13	284.77	6.1	0.101	-	6.97	10.8	-
	1-Feb-01	39.59	282.31	6.43	0.093	-	5.03	11	-
	29-May-02	34.42	287.48	5.67	0.074	-	4.79	9.7	-
	26-Aug-02	38.25	283.65	5.42	0.072	-	5.6	9.7	-
	11-Mar-03	35.02	286.88	-	-	-	-	-	-
	3-Jun-03	33.87	288.03	6.4	0.08	-	5.6	11	-
	8-Dec-03	41.07	280.83	6.21	0.085	-	7.28	10.5	-
	5-Mar-04	32.02	289.88	5.9	0.08	-	7.07	10.4	-
	8-Jun-04	37.08	284.82	7.05	0.081	-	-	10.5	-
	21-Sep-04	41.41	280.49	-	-	-	-	-	-
	20-Dec-04	46.5	275.4	6.03	0.087	-	-	12.5	-
	21-Mar-05	35.37	286.53	5.4	0.079	-	-	10.7	-
	2-May-07	32.3	289.6	6.28	0.068	6	-	10.4	-
	10-Mar-09	34.3	287.6	5.81	0.078	10	6.97	9.9	354
	28-Sep-09	39.83	282.07	-	-	-	-	-	-
	13-Sep-10	37.1	284.8	-	-	-	-	-	-
	5-Apr-11	30.9	291	5.62	0.081	-	4.91	10.3	261
	2-Aug-11	36.6	285.3	-	-	-	-	-	-
	27-Feb-12	32.08	289.82	-	-	-	-	-	-
	20-Apr-13	33.35	288.55	-	-	-	-	-	-
	26-Aug-13	38.7	283.2	-	-	-	-	-	-
	12-May-14	31.63	290.27	-	-	-	-	-	-
	13-Apr-15	32.03	289.87	-	-	-	-	-	-
25-Apr-16	31.71	290.19	-	-	-	-	-	-	
1-Nov-16	41.32	280.58	-	-	-	-	-	-	
10-Apr-17	28.59	293.31	-	-	-	-	-	-	
28-Aug-17	37.76	284.14	-	-	-	-	-	-	
98-IA-MW07 291	1-Jun-99	52.05	238.95	6.58	0.094	-	9.38	17.46	-
	1-Nov-99	50.1	240.9	6.61	0.107	-	12.51	12.6	-
	1-Apr-00	48.9	242.1	6.12	0.129	-	17.92	13.69	-
	1-Nov-00	54.89	236.11	6.73	0.109	-	9.57	11.7	-
	1-May-01	Dry	-	-	-	-	-	-	-
	1-Aug-01	Dry	-	-	-	-	-	-	-
	5-Jun-02	55	236	5.91	0.102	-	8.85	11.4	-
	27-Aug-02	53.3	237.7	5.85	0.099	-	9.95	11.6	-
	11-Mar-03	Dry	-	-	-	-	-	-	-
	3-Jun-03	52.12	238.88	6.8	0.1	-	9.7	12	-
	5-Mar-04	51.53	239.47	6.26	0.098	-	8.01	10	-
	8-Jun-04	52.81	238.19	7.1	0.101	-	-	12.8	-
	27-Mar-06	49.32	241.68	6.1	0.094	-	-	11.8	-
	2-May-07	49.18	241.82	6.45	0.093	10	-	12.2	-
	24-Mar-08	50.67	240.33	7.11	0.096	117	-	12.1	-
	10-Mar-09	52.08	238.92	6.5	0.091	10	9.89	11.3	223
	26-Feb-10	50.55	240.45	6.6	0.093	1	9.7	11.5	182
	13-Sep-10	53	238	-	-	-	-	-	-
	5-Apr-11	48.37	242.63	5.68	0.097	-	9.48	11.2	268
	2-Aug-11	52.15	238.85	-	-	-	-	-	-
	27-Feb-12	51.59	239.41	7.05	-	-	-	11.5	13
	12-May-14	49.48	241.52	-	-	-	-	-	-
	13-Apr-15	49.99	241.01	-	-	-	-	-	-
25-Apr-16	49.05	241.95	-	-	-	-	-	-	

Table 2-1 - Depth to Water and Field Parameter Measurements
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID TOC	Date	DTW (ft bgs)	GWELEV (ft AMSL)	pH	Cond. (ms/cm)	Turbidity	DO (ppm)	Temp (°C)	ORP (mv)
98-IA-MW07 (cont)	1-Nov-16	53.49	237.51	-	-	-	-	-	-
	10-Apr-17	47.47	243.53	-	-	-	-	-	-
	28-Aug-17	52.69	238.31	-	-	-	-	-	-
98-IA-MW08 322.8	1-Jun-99	32.18	290.62	6.93	0.081	-	10.33	14.44	-
	1-Nov-99	37.4	285.4	6.88	0.104	-	12.52	12.44	-
	1-Apr-00	32.12	290.68	6.31	0.123	-	18.13	13.59	-
	1-Nov-00	36.69	286.11	6.3	0.097	-	8.98	11.4	-
	1-Feb-01	44.4	278.4	-	-	-	-	-	-
	1-May-01	45.6	277.2	-	-	-	-	-	-
	1-Aug-01	Dry	-	-	-	-	-	-	-
	28-Aug-02	36.7	286.1	6.11	0.082	-	10.7	11.4	-
	19-Nov-02	-	-	7.8	0.095	-	9.56	11.2	-
	12-Mar-03	40.85	281.95	-	-	-	-	-	-
	3-Jun-03	38.2	284.6	6.6	0.07	-	9.6	13	-
	18-Sep-03	42.76	280.04	6.88	0.092	-	-	12.2	-
	9-Dec-03	43.1	279.7	6.85	0.065	-	9.53	12.1	-
	8-Mar-04	36.72	286.08	6.32	0.084	-	9.62	11.8	-
	8-Jun-04	38.19	284.61	7.03	0.071	-	-	12.1	-
	21-Sep-04	44.32	278.48	-	-	-	-	-	-
	21-Dec-04	44.89	277.91	-	-	-	-	-	-
	21-Mar-05	44.92	277.88	-	-	-	-	-	-
	2-May-07	31.27	291.53	6.48	0.081	21	-	13.3	-
	10-Mar-09	39.38	283.42	6.22	0.084	10	8.41	12.4	214
	7-Apr-11	30.91	291.89	5.89	0.102	3	9.03	11.7	357
	2-Aug-11	33.38	289.42	-	-	-	-	-	-
	13-Apr-15	32.16	290.64	-	-	-	-	-	-
	25-Apr-16	29.88	292.92	-	-	-	-	-	-
	1-Nov-16	37.82	284.98	-	-	-	-	-	-
	10-Apr-17	29.51	293.29	-	-	-	-	-	-
	28-Aug-17	34.08	288.72	-	-	-	-	-	-
98-IA-MW09 333	1-Jun-99	32.38	300.62	6.8	0.119	-	7.34	19.09	-
	1-Nov-99	41	292	6.75	0.147	-	12.35	12.79	-
	1-Apr-00	31.48	301.52	6.23	0.162	-	19.17	14.97	-
	1-Nov-00	39.21	293.79	6.67	0.152	-	8.52	11.9	-
	1-Feb-01	45.15	287.85	6.59	0.142	-	6.13	12.4	-
	1-May-01	45.2	287.8	-	-	-	-	-	-
	1-Aug-01	45.59	287.41	7.03	0.142	-	8.15	12.5	-
	27-Aug-02	38.95	294.05	6.64	0.118	-	9.49	11.9	-
	19-Nov-02	-	-	7.8	0.122	-	9.49	11.8	-
	12-Mar-03	41.1	291.9	-	-	-	-	-	-
	4-Jun-03	38.75	294.25	7.1	0.12	-	8.4	12	-
	18-Sep-03	43.95	289.05	7.06	0.122	-	-	12.5	-
	8-Dec-03	40.58	292.42	7.03	0.121	-	8.99	12.2	-
	8-Mar-04	36.42	296.58	6.5	0.114	-	9.51	11.8	-
	8-Jun-04	39.7	293.3	7.07	0.123	-	-	12.1	-
	21-Sep-04	44.83	288.17	6.65	0.123	-	-	12.4	-
	21-Dec-04	45.6	287.4	6.71	0.124	-	-	12.7	-
	21-Mar-05	44.31	288.69	5.96	0.12	-	-	12.2	-
	2-May-07	29.79	303.21	6.51	0.115	55	-	13.8	-
11-Mar-09	39.6	293.4	6.77	0.115	10	8.79	11.9	285	
5-Apr-11	29.86	303.14	6.4	0.134	5	7.59	11.9	305	

Table 2-1 - Depth to Water and Field Parameter Measurements
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID TOC	Date	DTW (ft bgs)	GWELEV (ft AMSL)	pH	Cond. (ms/cm)	Turbidity	DO (ppm)	Temp (°C)	ORP (mv)
98-IA-MW10 355	1-Aug-11	34.25	298.75	-	-	-	-	-	-
	1-Jun-99	27.07	327.93	6.49	0.087	-	7.34	15.46	-
	1-Nov-99	32.7	322.3	6.35	0.067	-	12.35	11.62	-
	1-Apr-00	34.75	320.25	5.71	0.107	-	19.17	12.19	-
	1-Nov-00	30.37	324.63	6.2	0.087	-	9.3	11.2	-
	1-Feb-01	35.18	319.82	6.28	0.079	-	6.81	10.9	-
	1-May-01	35.2	319.8	-	-	-	-	-	-
	21-Aug-01	33.78	321.22	6.47	0.079	-	8.5	10.9	-
	27-Aug-02	30.25	324.75	6.03	0.067	-	9.96	10	-
	19-Nov-02	-	-	6.74	0.067	-	10.55	9.7	-
	11-Mar-03	32.4	322.6	-	-	-	-	-	-
	3-Jun-03	28.65	326.35	6.6	0.07	-	9.8	11	-
	18-Sep-03	32.4	322.6	6.55	0.066	-	-	10.3	-
	8-Dec-03	33.82	321.18	6.66	0.064	-	9.97	10.3	-
	8-Mar-04	27.84	327.16	6.1	0.069	-	9.72	10.2	-
	8-Jun-04	29.43	325.57	7.04	0.07	-	-	10.2	-
	21-Sep-04	33.73	321.27	6.26	0.069	-	-	11	-
	21-Dec-04	35.4	319.6	6.38	0.068	-	-	10.8	-
	21-Mar-05	33.95	321.05	5.48	0.068	-	-	10.3	-
	2-May-07	24.88	330.12	6.26	0.065	-	-	10.5	-
11-Mar-09	30.5	324.5	5.32	0.064	10	9.65	10.1	196	
5-Apr-11	24.41	330.59	6.1	0.077	-	8.28	10	353	
1-Aug-11	27.86	327.14	-	-	-	-	-	-	
01-IA-MW11 266.78	12-Dec-01	-	-	6.71	0.108	-	9.92	11	-
	28-Mar-02	44.1	222.68	6.6	0.104	-	11.11	11	-
	26-Aug-02	46.5	220.28	5.95	0.013	-	10.95	10.7	-
	18-Nov-02	-	-	7.55	0.104	-	10.79	-	-
	10-Mar-03	49.9	216.88	-	0.092	-	10.44	10.5	-
	3-Jun-03	47.43	219.35	6.8	0.1	-	9.1	12	-
	18-Sep-03	48.57	218.21	6.7	0.1	-	-	11	-
	8-Dec-03	49.41	217.37	6.73	0.096	-	10.43	11	-
	5-Mar-04	47.64	219.14	6.3	0.104	-	10.13	10.8	-
	7-Jun-04	47.13	219.65	7.15	0.107	-	-	11.4	-
	21-Sep-04	49.24	217.54	6.27	0.096	-	-	11.8	-
	20-Dec-04	51.08	215.7	6.58	0.083	-	-	11.9	-
	21-Mar-05	50.9	215.88	5.8	0.081	-	-	10.7	-
	27-Mar-06	42.69	224.09	6.11	0.082	-	-	11.7	-
	2-May-07	41.32	225.46	6.59	0.09	3	-	12.1	-
	24-Mar-08	45.37	221.41	7.21	0.1	4	-	11.8	-
	9-Mar-09	47.92	218.86	6.7	0.1	10	9.87	11	304
	26-Feb-10	46.2	220.58	6.67	0.097	14	10.03	11	153
	13-Sep-10	46.49	220.29	-	-	-	-	-	-
	4-Apr-11	42.35	224.43	4.85	0.101	19	9.36	11	84
	1-Aug-11	43.2	223.58	-	-	-	-	-	-
	27-Feb-12	46.54	220.24	-	-	-	-	-	-
	20-Apr-13	44.23	222.55	-	-	-	-	-	-
26-Aug-13	46.2	220.58	-	-	-	-	-	-	
12-May-14	40.72	226.06	-	-	-	-	-	-	
13-Apr-15	42.65	224.13	-	-	-	-	-	-	
25-Apr-16	38.21	228.57	-	-	-	-	-	-	
1-Nov-16	45.60	221.18	-	-	-	-	-	-	

Table 2-1 - Depth to Water and Field Parameter Measurements
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID TOC	Date	DTW (ft bgs)	GWELEV (ft AMSL)	pH	Cond. (ms/cm)	Turbidity	DO (ppm)	Temp (°C)	ORP (mv)
01-IA-MW11 (cont)	10-Apr-17	39.65	227.13	-	-	-	-	-	-
	28-Aug-17	42.37	224.41	-	-	-	-	-	-
01-IA-MW12 289.43	28-Mar-02	23.35	266.08	6.56	0.077	-	10.91	11.4	-
	26-Aug-02	32.41	257.02	6.08	0.071	-	13.36	11.1	-
	18-Nov-02	-	-	7.59	0.075	-	10.71	-	-
	11-Mar-03	36.2	253.23	-	0.075	-	10.22	11.3	-
	3-Jun-03	29.1	260.33	6.9	0.08	-	10.5	12	-
	18-Sep-03	35.26	254.17	6.83	0.079	-	-	11.6	-
	8-Dec-03	38	251.43	6.8	0.079	-	11.04	11.5	-
	5-Mar-04	28.32	261.11	6.34	0.079	-	9.99	11.3	-
	7-Jun-04	31.79	257.64	7.09	0.078	-	-	11.5	-
	21-Sep-04	37.78	251.65	6.47	0.076	-	-	12	-
	20-Dec-04	41.48	247.95	6.63	0.077	-	-	11.8	-
	21-Mar-05	34.21	255.22	5.85	0.074	-	-	11.5	-
	2-May-07	22.79	266.64	6.54	0.073	-	-	12.2	-
	10-Mar-09	30.94	258.49	6.39	0.082	10	9.95	11.2	371
	13-Sep-10	31.72	257.71	-	-	-	-	-	-
	4-Apr-11	22.45	266.98	5.13	0.084	21	10.6	11.5	243
	1-Aug-11	28.77	260.66	-	-	-	-	-	-
	27-Feb-12	30.45	258.98	-	-	-	-	-	-
	20-Apr-13	27.34	262.09	-	-	-	-	-	-
	26-Aug-13	33.25	256.18	-	-	-	-	-	-
	12-May-14	21.77	267.66	-	-	-	-	-	-
	13-Apr-15	23.61	265.82	-	-	-	-	-	-
	25-Apr-16	20.66	268.77	-	-	-	-	-	-
	1-Nov-16	36.38	253.05	-	-	-	-	-	-
	10-Apr-17	18.88	270.55	-	-	-	-	-	-
	28-Aug-17	30.37	259.06	-	-	-	-	-	-
01-IA-MW13 315.43	28-Mar-02	29	286.43	7.66	0.115	-	9.55	11.7	-
	26-Aug-02	36.2	279.23	-	-	-	-	-	-
	9-Sep-02	37.1	278.33	7.45	0.104	-	9.86	11.4	-
	18-Nov-02	-	-	8.24	0.105	-	9.99	11.2	-
	11-Mar-03	38.35	277.08	-	-	-	-	-	-
	3-Jun-03	34.51	280.92	7.6	0.12	-	8.6	12	-
	18-Sep-03	40.29	275.14	7.56	0.111	-	-	11.9	-
	8-Dec-03	41.1	274.33	7.5	0.112	-	9.27	11.6	-
	5-Mar-04	32.59	282.84	6.99	0.112	-	8.59	11	-
	7-Jun-04	36.04	279.39	6.77	0.113	-	-	11.6	-
	21-Sep-04	42.11	273.32	7.2	0.11	-	-	11.9	-
	20-Dec-04	44.85	270.58	7.3	0.109	-	-	11.7	-
	21-Mar-05	41.24	274.19	6.56	0.104	-	-	11.4	-
	2-May-07	26.42	289.01	7.21	0.115	4	-	12.1	-
	11-Mar-09	35.8	279.63	7.33	0.103	10	8.93	11.5	285
	13-Sep-10	36	279.43	-	-	-	-	-	-
	5-Apr-11	26.51	288.92	6.59	0.119	2	7.98	11.3	225
	1-Aug-11	31.27	284.16	-	-	-	-	-	-
	27-Feb-12	33.38	282.05	-	-	-	-	-	-
	20-Apr-13	30.49	284.94	-	-	-	-	-	-
26-Aug-13	35.92	279.51	-	-	-	-	-	-	
12-May-14	25.3	290.13	-	-	-	-	-	-	
13-Apr-15	27.31	288.12	-	-	-	-	-	-	

Table 2-1 - Depth to Water and Field Parameter Measurements
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID TOC	Date	DTW (ft bgs)	GWELEV (ft AMSL)	pH	Cond. (ms/cm)	Turbidity	DO (ppm)	Temp (°C)	ORP (mv)
01-IA-MW13 (cont)	25-Apr-16	24.20	291.23	-	-	-	-	-	-
	1-Nov-16	38.68	276.75	-	-	-	-	-	-
	10-Apr-17	22.44	292.99	-	-	-	-	-	-
	28-Aug-17	32.75	282.68	-	-	-	-	-	-
01-IA-MW14 394.39	28-Mar-02	29.5	364.89	7.39	0.163	-	-	11.7	-
	27-Aug-02	33.1	361.29	6.46	0.115	-	1.64	10.6	-
	11-Mar-03	30.66	363.73	-	-	-	-	-	-
	19-Sep-03	35.26	359.13	-	-	-	-	-	-
	9-Dec-03	35.28	359.11	-	-	-	-	9.1	-
	5-Mar-04	29.29	365.1	6.56	0.177	-	2.54	9.6	-
	8-Jun-04	32.18	362.21	-	-	-	-	-	-
	21-Sep-04	36.37	358.02	-	-	-	-	-	-
	21-Dec-04	35.86	358.53	-	-	-	-	-	-
	21-Mar-05	33.05	361.34	-	-	-	-	-	-
	2-May-07	28	366.39	6.83	0.098	27	-	11.9	-
	11-Mar-09	30.64	363.75	7.14	0.094	10	7.9	10.6	-
	5-Apr-11	26.24	368.15	6.8	0.108	3	6.96	10.8	209
	1-Aug-11	30	364.39	-	-	-	-	-	-
01-IA-MW15 363.61	5-Jun-02	169.1	194.51	-	-	-	-	-	-
	9-Sep-02	173.86	189.75	7.22	0.129	-	2.04	11.7	-
	18-Nov-02	-	-	8.27	0.152	-	1.93	11.4	-
	11-Mar-03	172.2	191.41	-	-	-	-	-	-
	3-Jun-03	171.26	192.35	7.4	0.13	-	1.9	12	-
	18-Sep-03	172.56	191.05	7.4	0.16	-	-	12.5	-
	8-Dec-03	173.26	190.35	7.36	0.178	-	1.67	12.1	-
	5-Mar-04	171.39	192.22	6.79	0.12	-	2.14	11.4	-
	8-Jun-04	171.44	192.17	7.11	0.133	-	-	11.7	-
	21-Dec-04	173.56	190.05	7.16	0.164	-	-	11.7	-
	21-Mar-05	173.21	190.4	6.31	0.169	-	-	12.3	-
	2-May-07	167.9	195.71	6.9	0.109	1	-	12.9	-
	10-Mar-09	172.18	191.43	6.54	0.153	10	2.66	12.8	183
	28-Sep-09	172.15	191.46	-	-	-	-	-	-
5-Apr-11	168.59	195.02	6.45	0.12	3	2.25	12.1	221	
2-Aug-11	168.84	194.77	-	-	-	-	-	-	
85-PA-384 279.15	1-Jun-99	-	-	6.09	0.062	-	3.04	14.47	-
	1-Nov-99	-	-	6.12	0.088	-	7.71	12.14	-
	1-Apr-00	-	-	5.71	0.894	-	11.81	15.24	-
	1-Nov-00	37.95	241.2	5.89	3.98	-	0.096	11	-
	1-Feb-01	38.26	240.89	6.14	0.083	-	3.6	11.2	-
	1-Aug-01	37.55	241.6	6.37	0.098	-	-	11.1	-
	27-Aug-02	34	245.15	5.45	0.066	-	3.28	9.2	-
	19-Nov-02	-	-	7.1	0.074	-	3.05	-	-
	12-Mar-03	28.3	250.85	-	-	-	-	-	-
	3-Jun-03	35.3	243.85	6.3	0.07	-	3.7	11	-
	18-Sep-03	37.88	241.27	6.3	0.073	-	-	11.7	-
	10-Dec-03	27.67	251.48	6.3	0.063	-	9.62	10.8	-
	8-Mar-04	29.85	249.3	5.97	0.061	-	5.85	10.5	-
	8-Jun-04	36.22	242.93	7.01	0.07	-	-	10.64	-
	21-Sep-04	33.91	245.24	5.93	0.074	-	-	10.9	-
21-Dec-04	31.89	247.26	6.05	0.074	-	-	11.1	-	
22-Sep-05	31.32	247.83	5.57	0.071	-	-	10.3	-	

Table 2-1 - Depth to Water and Field Parameter Measurements
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID TOC	Date	DTW (ft bgs)	GWELEV (ft AMSL)	pH	Cond. (ms/cm)	Turbidity	DO (ppm)	Temp (°C)	ORP (mv)
85-PA-384 (cont)	2-May-07	25.73	253.42	6	0.058	3	-	9.6	-
	10-Mar-09	30.57	248.58	5.64	0.074	10	6.86	10.6	352
	7-Apr-11	19.36	259.79	5.86	0.063	23	3.61	10.7	166
	8-Aug-11	24.85	254.3	-	-	-	-	-	-
9700-MW1 277.68	1-Jun-99	-	-	6.34	0.088	-	5.64	16.13	-
	1-Nov-99	-	-	6.37	0.105	-	8.57	10.98	-
	1-Apr-00	-	-	5.95	1.259	-	16.75	10.69	-
	1-Nov-00	11.1	266.58	6.24	0.11	-	6.57	10.4	-
	1-Feb-01	11.49	266.19	6.12	0.1	-	5.03	9.5	-
	1-Aug-01	11.99	265.69	-	-	-	-	-	-
	28-Aug-02	11	266.68	5.9	0.1	-	6.27	10.6	-
	19-Nov-02	-	-	7.51	0.099	-	7.4	10.2	-
	12-Mar-03	10.12	267.56	-	-	-	-	-	-
	3-Jun-03	10.47	267.21	6.7	0.1	-	6.4	11	-
	18-Sep-03	11.18	266.5	6.63	0.098	-	-	11.5	-
	10-Dec-03	9.98	267.7	6.57	0.097	-	7.16	10.6	-
	8-Mar-04	9.92	267.76	6.2	0.097	-	7.24	9.4	-
	8-Jun-04	10.61	267.07	7.01	0.096	-	-	10.4	-
	21-Sep-04	11.29	266.39	6.4	0.094	-	-	12	-
	21-Dec-04	11.11	266.57	6.23	0.094	-	-	10.5	-
	22-Sep-05	11.19	266.49	-	-	-	-	-	-
	10-Mar-09	10.39	267.29	6.38	0.087	10	8.54	9.8	328
7-Apr-11	8.57	269.11	5.71	0.097	55	7.18	9.7	136	
10-Aug-11	10.05	267.63	-	-	-	-	-	-	
MW-3(3138) 288.29	1-Jun-99	-	-	6.05	0.501	-	0.77	18.16	-
	1-Nov-99	-	-	6.08	0.61	-	2.84	15.94	-
	1-Apr-00	-	-	5.56	0.465	-	0.28	14.7	-
	1-Nov-00	21.38	266.91	5.74	0.536	-	0.14	15.8	-
	28-Aug-02	21.1	267.19	5.43	0.475	-	-	14.1	-
	19-Nov-02	-	-	7	0.455	-	0.04	14.9	-
	12-Mar-03	21.6	266.69	-	-	-	-	-	-
	19-Sep-03	23.92	264.37	6.07	0.505	-	-	15.2	-
	10-Dec-03	21.83	266.46	5.97	0.921	-	0.07	16.6	-
	8-Mar-04	19.71	268.58	5.7	0.463	-	0.07	14.8	-
	8-Jun-04	21.59	266.7	6.04	0.517	-	-	14.7	-
	21-Sep-04	23.07	265.22	5.7	0.0472	-	-	15.7	-
	21-Dec-04	22.67	265.62	5.74	0.468	-	-	15.4	-
	22-Sep-05	23.12	265.17	-	-	-	-	-	-
	2-May-07	14.33	273.96	5.79	0.365	3	-	14.5	-
	11-Mar-09	21.5	266.79	5.83	0.408	10	0.55	15	-94
7-Apr-11	15.22	273.07	5.62	0.366	-	0.61	13.9	-136	
2-Aug-11	17.56	270.73	-	-	-	-	-	-	
AIA-SP-01 220	1-Jun-99	-	-	6.62	0.06	-	10.05	11.63	-
	1-Nov-99	-	-	6.74	0.088	-	11.52	11.46	-
	1-Nov-00	-	-	7.36	0.086	-	9.35	11.8	-
	15-Feb-01	-	-	5.95	0.096	-	7.1	11.6	-
	27-Aug-01	-	-	6.38	0.094	-	9.22	12.2	-
	12-Dec-01	-	-	6.71	0.098	-	9.46	11.6	-
	27-Feb-02	-	-	6.4	0.037	-	9.57	12	-
	20-May-02	-	-	6.8	0.075	-	9.04	11.6	-
19-Aug-02	-	-	6.65	0.073	-	9.89	11.5	-	

Table 2-1 - Depth to Water and Field Parameter Measurements
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID TOC	Date	DTW (ft bgs)	GWELEV (ft AMSL)	pH	Cond. (ms/cm)	Turbidity	DO (ppm)	Temp (°C)	ORP (mv)
AIA-SP-01 (cont)	12-Nov-02	-	-	6.95	0.08	-	9.12	11.2	-
	10-Mar-03	-	-	-	0.078	-	9.45	11.3	-
	3-Jun-03	-	-	6.7	0.09	-	9.3	12	-
	29-Sep-03	-	-	-	-	-	-	-	-
	8-Dec-03	-	-	7.18	0.086	-	9.42	11.5	-
	4-Mar-04	-	-	6.32	0.088	-	8.03	11.2	-
	7-Jun-04	-	-	-	-	-	-	-	-
	14-Sep-04	-	-	6.18	0.085	-	-	12.1	-
	20-Dec-04	-	-	7.32	0.085	-	-	11.1	-
21-Mar-05	-	-	6.73	0.084	-	-	11.3	-	
AIA-SP-02 200	1-Jun-99	-	-	7.44	0.055	-	10.49	11.42	-
	1-Nov-99	-	-	7.27	0.085	-	12.34	11.26	-
	28-Aug-01	-	-	6.49	0.09	-	9.93	12.7	-
	27-Feb-02	-	-	6.86	0.08	-	7.13	11.7	-
	20-May-02	-	-	6.5	0.069	-	8.78	11.3	-
	11-Nov-02	-	-	6.3	0.09	-	-	11.1	-
	19-Aug-02	-	-	7.03	0.07	-	9.87	11.2	-
	10-Mar-03	-	-	-	0.077	-	7.05	11.2	-
	2-Jun-03	-	-	6.8	0.09	-	8	12	-
	29-Sep-03	-	-	-	-	-	-	-	-
	8-Dec-03	-	-	7.46	0.086	-	7.99	11.3	-
	4-Mar-04	-	-	6.65	0.087	-	7.94	10.8	-
	7-Jun-04	-	-	6.45	0.094	-	-	11.8	-
	14-Sep-04	-	-	6.45	0.085	-	-	12.3	-
	20-Dec-04	-	-	7.31	0.082	-	-	11.1	-
19-Mar-05	-	-	6.68	0.083	-	-	10.7	-	
AIA-SP-03 148.3	1-Jun-99	-	-	7.78	0.051	-	10.43	13.09	-
	1-Nov-99	-	-	6.9	0.053	-	10.81	11.54	-
	27-Aug-01	-	-	7.04	0.071	-	10.33	12.3	-
	26-Nov-01	-	-	6.9	0.077	-	10.5	10.9	-
	27-Feb-02	-	-	6.87	0.074	-	7.77	10.5	-
	20-May-02	-	-	6.7	0.065	-	8.19	10.9	-
	19-Aug-02	-	-	6.87	0.064	-	9.43	11.4	-
	11-Nov-02	-	-	6.09	0.078	-	-	11	-
	10-Mar-03	-	-	-	0.065	-	9.34	10.7	-
	2-Jun-03	-	-	6.8	0.07	-	7.4	12	-
	29-Sep-03	-	-	-	-	-	-	-	-
	5-Dec-03	-	-	6.22	0.077	-	7.92	10.8	-
	4-Mar-04	-	-	6.57	0.08	-	8.25	10.4	-
	7-Jun-04	-	-	7.06	0.094	-	7.63	11.4	-
	14-Sep-04	-	-	6.39	0.076	-	-	11.8	-
20-Dec-04	-	-	7.3	0.067	-	-	10.4	-	
19-Mar-05	-	-	6.34	0.07	-	-	10.6	-	
AIA-SP-04 163.4	1-Jun-99	-	-	7.46	0.055	-	10.78	11.52	-
	1-Nov-99	-	-	7.15	0.059	-	10.8	11.03	-
	27-Aug-01	-	-	7.44	0.077	-	7.5	12.2	-
	26-Nov-01	-	-	7.72	0.077	-	11.4	10.6	-
	27-Feb-02	-	-	6.87	0.074	-	9.77	10.5	-
	20-May-02	-	-	7.23	0.068	-	9.02	10.7	-
	19-Aug-02	-	-	7.18	0.065	-	10.48	11.3	-
	11-Nov-02	-	-	6.45	0.081	-	-	10.7	-

Table 2-1 - Depth to Water and Field Parameter Measurements
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID TOC	Date	DTW (ft bgs)	GWELEV (ft AMSL)	pH	Cond. (ms/cm)	Turbidity	DO (ppm)	Temp (°C)	ORP (mv)
AIA-SP-04 (cont)	10-Mar-03	-	-	-	0.067	-	9.46	10.5	-
	2-Jun-03	-	-	7.6	0.07	-	9.1	12	-
	29-Sep-03	-	-	-	-	-	-	-	-
	5-Dec-03	-	-	6.65	0.72	-	8.4	10.5	-
	4-Mar-04	-	-	7.07	0.074	-	7.96	10.2	-
	7-Jun-04	-	-	7.36	0.077	-	7.32	10.9	-
	14-Sep-04	-	-	6.4	0.08	-	-	11.7	-
	20-Dec-04	-	-	7.22	0.125	-	-	10.1	-
19-Mar-05	-	-	6.87	0.08	-	-	10.2	-	
AIA-SP-05 240	1-Jun-99	-	-	7.52	0.051	-	10.76	11.02	-
	1-Nov-99	-	-	7.4	0.056	-	10.41	11.01	-
	27-Aug-01	-	-	6.95	0.081	-	10.58	11.6	-
	25-Feb-02	-	-	6.86	0.045	-	10.45	10.8	-
	20-May-02	-	-	6.52	0.044	-	9.05	10.5	-
	19-Aug-02	-	-	6.48	0.06	-	10.29	10.9	-
	11-Nov-02	-	-	6.17	0.08	-	-	11	-
	10-Mar-03	-	-	-	0.053	-	8.13	10.4	-
	2-Jun-03	-	-	6.6	0.05	-	8.2	11	-
	29-Sep-03	-	-	-	-	-	-	-	-
	5-Dec-03	-	-	6.7	0.7	-	8.17	10.3	-
	4-Mar-04	-	-	6.47	0.048	-	8.62	11	-
	7-Jun-04	-	-	7.58	0.075	-	6.94	10.5	-
	14-Sep-04	-	-	-	-	-	-	-	-
	20-Dec-04	-	-	5.21	0.032	-	-	10.6	-
19-Mar-05	-	-	6.36	0.064	-	-	10.9	-	

Notes:

- TOC = Top of casing elevation in feet
- DTW ft bgs = Depth to water in feet below ground surface
- GWELEV (ft AMSL) = Groundwater elevation in feet above mean sea level
- Cond. (ms/cm) = Conductivity microsiemens per centimeter
- DO (ppm) = Dissolved oxygen parts per million
- Temp. (°C) = Temperature degrees celsius
- ORP (mv) = Oxygen / reduction potential millivolts
- = No data, not applicable
- * = It is suspected that the dissolved oxygen probe did not calibrate properly.

Table 3-1 - RDX and Dissolved Metals Analytical Results
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID	Date	RDX (µg/L)	As (µg/L)	Ba (µg/L)	Cd (µg/L)	Cr (µg/L)	Pb (µg/L)	Hg (µg/L)	Se (µg/L)	Ag (µg/L)
	Cleanup Levels	0.8	5	-	5	50	15	2	-	-
98-IA-MW01	23-Jun-99	1.4 R	-	-	-	-	-	-	-	-
	9-Nov-99	1.0 U	-	-	-	-	-	-	-	-
	10-Apr-00	0.4 J	-	0.07 J	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	29-Aug-00	0.4	-	0.3	0.1 U	0.1	0.1 U	0.01 U	-	-
	13-Nov-00	0.5	-	0.3	0.1 U	0.2	0.1 U	0.01 U	-	-
	21-May-01	0.4	-	0.2	0.1 U	0.2	0.1 U	0.01 U	-	-
	28-Aug-01	0.2 U	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	27-Feb-02	0.4	-	-	-	-	-	-	-	-
	29-May-02	0.4	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	26-Aug-02	0.4	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	10-Mar-03	0.3	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	2-Jun-03	0.4	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	18-Sep-03	0.4	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	5-Mar-04	0.3	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	7-Jun-04	0.4	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	19-Mar-05	0.3	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	27-Sep-05	0.3	-	-	-	-	-	-	-	-
	27-Mar-06	0.3	-	-	-	-	-	-	-	-
	7-Aug-06	0.2 J	-	-	-	-	-	-	-	-
	2-May-07	0.2 U	0.1 U	0.202	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	11-Sep-07	0.2	-	-	-	-	-	-	-	-
	24-Mar-08	0.4	-	-	-	-	-	-	-	-
	16-Sep-08	0.22	-	-	-	-	-	-	-	-
	Duplicate	16-Sep-08	0.21	-	-	-	-	-	-	-
		9-Mar-09	0.24	0.1 U	0.27	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	Duplicate	28-Sep-09	0.29	-	-	-	-	-	-	-
		28-Sep-09	0.29	-	-	-	-	-	-	-
		26-Feb-10	0.27	-	-	-	-	-	-	-
		13-Sep-10	0.25	-	-	-	-	-	-	-
		4-Apr-11	0.25	-	-	-	-	-	-	-
		2-Aug-11	0.20	-	-	-	-	-	-	-
		27-Feb-12	0.21	-	-	-	-	-	-	-
		6-Aug-12	0.18	-	-	-	-	-	-	-
	20-Apr-13	0.17	-	-	-	-	-	-	-	
	26-Aug-13	0.14	-	-	-	-	-	-	-	
	12-May-14	0.15	-	-	-	-	-	-	-	
	20-Oct-14	0.14 C	-	-	-	-	-	-	-	
	13-Apr-15	0.16 C	-	-	-	-	-	-	-	
	25-Apr-16	0.2 U	-	-	-	-	-	-	-	
Duplicate	1-Nov-16	0.2 U	-	-	-	-	-	-	-	
	1-Nov-16	0.2 U	-	-	-	-	-	-	-	
	10-Apr-17	0.2 U	-	-	-	-	-	-	-	
Duplicate	28-Aug-17	0.12 JN	-	-	-	-	-	-	-	
	28-Aug-17	0.69 JN	-	-	-	-	-	-	-	
98-IA-MW02	23-Jun-99	3.2 R	-	-	-	-	-	-	-	
	9-Nov-99	1.0 U	-	-	-	-	-	-	-	
	10-Apr-00	0.6	-	0.07 J	0.1 U	0.1 U	0.1 U	0.01 U	-	
	29-Aug-00	0.2	-	0.3	0.1 U	0.1	0.1 U	0.01 U	-	
	13-Nov-00	0.2 U	-	0.2	0.1 U	0.1	0.1 U	0.01 U	-	
	27-Feb-02	0.7	-	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	-	
	29-May-02	0.7	-	0.1	0.1 U	0.1 U	0.1 U	0.01 U	-	
	27-Mar-06	0.5	-	-	-	-	-	-	-	
	2-May-07	0.3	0.1 U	0.165	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
	11-Sep-07	0.1	-	-	-	-	-	-	-	
	24-Mar-08	1.3 *	-	-	-	-	-	-	-	
	16-Sep-08	0.1 U	-	-	-	-	-	-	-	
	9-Mar-09	0.24	0.1 U	0.223	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	
	26-Feb-10	0.15	-	-	-	-	-	-	-	
13-Sep-10	0.2	-	-	-	-	-	-	-		
4-Apr-11	0.44	-	-	-	-	-	-	-		

Table 3-1 - RDX and Dissolved Metals Analytical Results
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID	Date	RDX (µg/L)	As (µg/L)	Ba (µg/L)	Cd (µg/L)	Cr (µg/L)	Pb (µg/L)	Hg (µg/L)	Se (µg/L)	Ag (µg/L)	
Cleanup Levels		0.8	5	-	5	50	15	2	-	-	
98-IA-MW02 Cont.	2-Aug-11	0.26	-	-	-	-	-	-	-	-	
	27-Feb-12	0.1 U	-	-	-	-	-	-	-	-	
	6-Aug-12	0.24	-	-	-	-	-	-	-	-	
	20-Apr-13	0.25	-	-	-	-	-	-	-	-	
	26-Aug-13	0.13	-	-	-	-	-	-	-	-	
	12-May-14	0.51	-	-	-	-	-	-	-	-	
	20-Oct-14	0.09 C	-	-	-	-	-	-	-	-	
	20-Oct-14	0.11 C	-	-	-	-	-	-	-	-	
	13-Apr-15	0.38 C	-	-	-	-	-	-	-	-	
	25-Apr-16	0.61	-	-	-	-	-	-	-	-	
1-Nov-16	Well too dry to sample										
10-Apr-17	0.55 C	-	-	-	-	-	-	-	-	-	
28-Aug-17	0.16 J	-	-	-	-	-	-	-	-	-	
98-IA-MW03	23-Jun-99	1.0 U	-	-	-	0.1 U	-	-	-	-	
	9-Nov-99	1.0 U	-	-	-	-	-	-	-	-	
	10-Apr-00	0.5 U	-	0.2 J	0.1 U	0.3 J	0.1 U	0.01 U	-	-	
	29-Aug-00	0.2	-	0.4	0.1 U	0.1	0.1 U	0.01 U	-	-	
	13-Nov-00	0.2 U	-	0.4	0.1 U	0.1	0.1 U	0.01 U	-	-	
	14-Feb-01	0.2	-	0.3	0.1 U	0.2	0.1 U	0.01 U	-	-	
	27-Feb-02	0.3	-	-	-	-	-	-	-	-	
	29-May-02	0.2 U	-	0.3	0.1 U	0.2	0.1 U	0.01 U	-	-	
	26-Aug-02	0.5	-	0.4	0.1 U	0.2	0.1 U	0.01 U	-	-	
	18-Nov-02	0.2 U	-	0.3	0.1 U	0.2	0.1 U	0.01 U	-	-	
	10-Mar-03	0.2 U	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	2-Jun-03	0.2 U	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	18-Sep-03	0.5	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	8-Dec-03	0.6	-	0.3	0.1 U	0.2	0.1 U	0.01 U	-	-	
	5-Mar-04	0.3	-	0.3	0.1 U	0.1	0.1 U	0.01 U	-	-	
	7-Jun-04	0.5	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	14-Sep-04	0.4	-	0.3	0.1 U	0.1	0.1 U	0.01 U	-	-	
	27-Sep-05	0.4	-	-	-	-	-	-	-	-	
	27-Mar-06	0.4	-	-	-	-	-	-	-	-	
	7-Aug-06	0.9	-	-	-	-	-	-	-	-	
	2-May-07	1.0	0.1 U	0.279	0.1 U	0.356	0.1 U	0.1 U	0.1 U	0.1 U	
	11-Sep-07	0.1	-	-	-	-	-	-	-	-	
	24-Mar-08	1.5	-	-	-	-	-	-	-	-	
	29-Sep-08	1.16	-	-	-	-	-	-	-	-	
	9-Mar-09	1.11	0.1 U	0.292	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U	
	28-Sep-09	1.08	-	-	-	-	-	-	-	-	
	26-Feb-10	1.2	-	-	-	-	-	-	-	-	
	13-Sep-10	1.2	-	-	-	-	-	-	-	-	
	Duplicate	13-Sep-10	1.1	-	-	-	-	-	-	-	-
		4-Apr-11	1.2	-	-	-	-	-	-	-	-
		1-Aug-11	1.3	-	-	-	-	-	-	-	-
		24-Mar-12	1.2	-	-	-	-	-	-	-	-
		6-Aug-12	1.1	-	-	-	-	-	-	-	-
Duplicate	20-Apr-13	0.73	-	-	-	-	-	-	-	-	
	26-Aug-13	0.75	-	-	-	-	-	-	-	-	
	26-Aug-13	0.74	-	-	-	-	-	-	-	-	
Duplicate	12-May-14	0.71	-	-	-	-	-	-	-	-	
	20-Oct-14	0.71 C	-	-	-	-	-	-	-	-	
	13-Apr-15	0.68 C	-	-	-	-	-	-	-	-	
	13-Apr-15	0.69 C	-	-	-	-	-	-	-	-	
	19-Oct-15	0.61 C	-	-	-	-	-	-	-	-	
Duplicate	25-Apr-16	0.55	-	-	-	-	-	-	-	-	
	25-Apr-16	0.55	-	-	-	-	-	-	-	-	
	1-Nov-16	0.40	-	-	-	-	-	-	-	-	
	10-Apr-17	0.44 C	-	-	-	-	-	-	-	-	
	28-Aug-17	0.44	-	-	-	-	-	-	-	-	
98-IA-MW04	23-Jun-99	1.3 R	-	-	-	0.1 U	-	-	-	-	
	9-Nov-99	1.0 U	-	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	10-Apr-00	0.5 J	-	0.12 J	0.1 U	0.07 J	0.1 U	0.01 U	-	-	
	29-Aug-00	0.5	-	0.3	0.1 U	0.1	0.1 U	0.01 U	-	-	
	13-Nov-00	0.6	-	0.3	0.1 U	0.1	0.1 U	0.01 U	-	-	

Table 3-1 - RDX and Dissolved Metals Analytical Results
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID	Date	RDX (µg/L)	As (µg/L)	Ba (µg/L)	Cd (µg/L)	Cr (µg/L)	Pb (µg/L)	Hg (µg/L)	Se (µg/L)	Ag (µg/L)
	Cleanup Levels	0.8	5	-	5	50	15	2	-	-
98-IA-MW04 (cont)	14-Feb-01	0.5	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	27-Feb-02	0.5	-	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	26-Aug-02	0.5	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	18-Nov-02	0.5	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	10-Mar-03	0.4	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	2-Jun-03	0.5	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	18-Sep-03	0.3	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	8-Dec-03	0.5	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	5-Mar-04	0.4	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	7-Jun-04	0.4	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	14-Sep-04	0.4	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	20-Dec-04	0.4	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	19-Mar-05	0.4	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	27-Sep-05	0.4	-	-	-	-	-	-	-	-
	27-Mar-06	0.4	-	-	-	-	-	-	-	-
	7-Aug-06	0.3 J	-	-	-	-	-	-	-	-
	2-May-07	0.3	0.1 U	0.172	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	11-Sep-07	0.4	-	-	-	-	-	-	-	-
	24-Mar-08	0.6	-	-	-	-	-	-	-	-
	29-Sep-08	0.37	-	-	-	-	-	-	-	-
	9-Mar-09	0.36	0.1 U	0.227	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U
	28-Sep-09	0.46	-	-	-	-	-	-	-	-
	26-Feb-10	0.43	-	-	-	-	-	-	-	-
	13-Sep-10	0.45	-	-	-	-	-	-	-	-
	4-Apr-11	0.43	-	-	-	-	-	-	-	-
	1-Aug-11	0.46	-	-	-	-	-	-	-	-
	Duplicate	27-Mar-12	0.40	-	-	-	-	-	-	-
27-Mar-12		0.39	-	-	-	-	-	-	-	
6-Aug-12		0.40	-	-	-	-	-	-	-	
20-Apr-13		0.37	-	-	-	-	-	-	-	
26-Aug-13		0.16	-	-	-	-	-	-	-	
Duplicate	12-May-14	0.31	-	-	-	-	-	-	-	
	12-May-14	0.34	-	-	-	-	-	-	-	
	20-Oct-14	0.37 C	-	-	-	-	-	-	-	
	13-Apr-15	0.37 C	-	-	-	-	-	-	-	
	19-Oct-15	0.36 C	-	-	-	-	-	-	-	
25-Apr-16	0.33	-	-	-	-	-	-	-		
1-Nov-16	0.24	-	-	-	-	-	-	-		
10-Apr-17		Restricted Access								
28-Aug-17	0.27	-	-	-	-	-	-	-	-	
98-IA-MW05	23-Jun-99	1.0 U	-	-	-	0.1 U	-	-	-	
	10-Apr-00	0.5 U	-	0.33 J	0.01 J	0.71 J	0.03 J	0.01 U	-	
	10-Mar-03	0.2 U	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	
	2-Jun-03	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	
	8-Dec-03	0.2 U	-	0.3	0.1 U	0.3	0.1 U	0.01 U	-	
	7-Jun-04	0.2 U	-	-	-	-	-	-	-	
	20-Dec-04	0.2 U	-	-	-	-	-	-	-	
	19-Mar-05	0.2 U	-	-	-	-	-	-	-	
	27-Mar-06	0.2 U	-	-	-	-	-	-	-	
	2-May-07	0.2 U	0.1 U	0.019	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
	9-Mar-09	0.1 U	0.1 U	0.11	0.1 U	0.11	0.1 U	0.01 U	0.1 U	
	Duplicate	9-Mar-09	0.1 U	0.1 U	0.12	0.1 U	0.10	0.1 U	0.01 U	0.1 U
		26-Feb-10	0.1 U	-	-	-	-	-	-	-
	Duplicate	26-Feb-10	0.1 U	-	-	-	-	-	-	-
		4-Apr-11	0.099 U	-	-	-	-	-	-	-
	Duplicate	4-Apr-11	0.099 U	-	-	-	-	-	-	-
1-Aug-11		0.099 U	-	-	-	-	-	-	-	
27-Feb-12		0.1 U	-	-	-	-	-	-	-	
6-Aug-12	0.1 U	-	-	-	-	-	-	-		

Table 3-1 - RDX and Dissolved Metals Analytical Results
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID	Date	RDX (µg/L)	As (µg/L)	Ba (µg/L)	Cd (µg/L)	Cr (µg/L)	Pb (µg/L)	Hg (µg/L)	Se (µg/L)	Ag (µg/L)
Cleanup Levels		0.8	5	-	5	50	15	2	-	-
98-IA-MW05 (cont)	20-Apr-13	0.1 U	-	-	-	-	-	-	-	-
	12-May-14	0.1 U	-	-	-	-	-	-	-	-
	13-Apr-15	0.04 U	-	-	-	-	-	-	-	-
	25-Apr-16	0.2 U	-	-	-	-	-	-	-	-
	1-Nov-16	Well too dry to sample								
	10-Apr-17	Restricted Access								
	28-Aug-17	0.15 JN	-	-	-	-	-	-	-	-
98-IA-MW06	23-Jun-99	1.0 U	-	-	-	-	-	-	-	-
	9-Nov-99	1.0 U	-	-	-	-	-	-	-	-
	10-Apr-00	0.5 U	-	0.09 J	0.1 U	0.27 J	0.1 U	0.01 U	-	-
	29-Aug-00	0.2 U	-	0.4	0.1 U	0.4	0.1 U	0.01 U	-	-
	13-Nov-00	0.2	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	14-Feb-01	0.2 U	-	0.4	0.1 U	0.1	0.1 U	0.01 U	-	-
	21-May-01	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	28-Aug-01	0.2 U	-	0.2	-	0.1 U	-	-	-	-
	5-Dec-01	0.2 U	-	0.2	-	0.1 U	-	-	-	-
	27-Feb-02	0.2 U	-	-	-	-	-	-	-	-
	29-May-02	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	26-Aug-02	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	10-Mar-03	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	2-Jun-03	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	8-Dec-03	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	5-Mar-04	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	7-Jun-04	-	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	20-Dec-04	-	-	0.2	0.1 U	0.1	0.1 U	0.01 U	-	-
	19-Mar-05	-	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	2-May-07	0.2 U	0.1 U	0.16	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
10-Mar-09	0.1 U	0.1 U	0.15	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U	
5-Apr-11	0.1 U	-	-	-	-	-	-	-	-	
98-IA-MW07	23-Jun-99	1.0 U	-	-	-	0.1 U	-	-	-	-
	9-Nov-99	1.0 U	-	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	10-Apr-00	0.5 U	-	0.2 J	0.1 U	0.02 J	0.1 U	0.01 U	-	-
	29-Aug-00	0.2 U	-	0.4	0.1 U	0.1	0.1 U	0.01 U	-	-
	13-Nov-00	0.2 U	-	0.5	0.1 U	0.1	0.1 U	0.01 U	-	-
	27-Feb-02	0.2 U	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	26-Aug-02	0.2 U	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	2-Jun-03	0.2 U	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	5-Mar-04	0.2 U	-	0.4	0.1 U	0.2	0.1 U	0.01 U	-	-
	7-Jun-04	0.2 U	-	0.4	0.1 U	0.2	0.1 U	0.01 U	-	-
	27-Mar-06	0.2 U	-	-	-	-	-	-	-	-
	2-May-07	0.2 U	0.1 U	0.31	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	24-Mar-08	0.1 U	-	-	-	-	-	-	-	-
	10-Mar-09	0.1 U	0.1 U	0.266	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U
	26-Feb-10	0.1 U	-	-	-	-	-	-	-	-
	5-Apr-11	0.1 U	-	-	-	-	-	-	-	-
	27-Feb-12	0.1 U	-	-	-	-	-	-	-	-
98-IA-MW08	23-Jun-99	-	-	-	-	0.1 U	-	-	-	-
	9-Nov-99	1.0 U	-	-	-	0.1 U	-	-	-	-
	10-Apr-00	0.5 U	-	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	29-Aug-00	0.2 U	-	0.5	0.1 U	0.2	0.1 U	0.01 U	-	-
	13-Nov-00	0.3	-	0.4	0.1 U	0.1	0.1 U	0.01 U	-	-
	14-Feb-01	-	-	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	21-May-01	-	-	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	28-Aug-01	-	-	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	5-Dec-01	-	-	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	27-Feb-02	0.2 U	-	0.4	0.1 U	0.1	0.1 U	0.01 U	-	-
29-May-02	0.2 U	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
26-Aug-02	0.2 U	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-	

Table 3-1 - RDX and Dissolved Metals Analytical Results
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID	Date	RDX (µg/L)	As (µg/L)	Ba (µg/L)	Cd (µg/L)	Cr (µg/L)	Pb (µg/L)	Hg (µg/L)	Se (µg/L)	Ag (µg/L)
	Cleanup Levels	0.8	5	-	5	50	15	2	-	-
98-IA-MW08 (cont)	18-Nov-02	0.2 U	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	10-Mar-03	0.2 U	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	2-Jun-03	0.2 U	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	18-Sep-03	0.2 U	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	8-Dec-03	0.2 U	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	5-Mar-04	0.2 U	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	7-Jun-04	0.2 U	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	2-May-07	0.2 U	0.1 U	0.246	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	10-Mar-09	0.1 U	0.1 U	0.258	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U
7-Apr-11	0.1 U	-	-	-	-	-	-	-	-	
98-IA-MW09	23-Jun-99	-	-	-	-	-	0.1 U	-	-	-
	9-Nov-99	1.0 U	-	0.1 U	0.1 U	-	0.12	0.01 U	-	-
	10-Apr-00	0.5 U	-	0.1 U	0.1 U	-	0.1 U	0.01 U	-	-
	29-Aug-00	0.2 U	-	0.6	0.1 U	0.3	0.1 U	0.01 U	-	-
	13-Nov-00	0.4	-	0.5	0.1 U	0.3	0.1 U	0.01 U	-	-
	14-Feb-01	0.2 U	-	0.5	0.1 U	0.3	0.1 U	0.01 U	-	-
	21-May-01	0.2 U	-	0.6	0.1 U	0.3	0.1 U	0.01 U	-	-
	28-Aug-01	0.2 U	-	0.5	-	0.2	-	-	-	-
	5-Dec-01	0.2 U	-	0.5	-	0.4	-	-	-	-
	27-Feb-02	0.2 U	-	0.5	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	29-May-02	0.2 U	-	0.5	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	26-Aug-02	0.2 U	-	0.5	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	18-Nov-02	0.2 U	-	0.5	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	10-Mar-03	0.2 U	-	0.5	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	2-Jun-03	0.2 U	-	0.5	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	18-Sep-03	0.2 U	-	0.5	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	8-Dec-03	0.2 U	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	5-Mar-04	0.2 U	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	7-Jun-04	0.2 U	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	14-Sep-04	0.2 U	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	20-Dec-04	0.2 U	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	19-Mar-05	0.2 U	-	0.5	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	2-May-07	0.2 U	0.1 U	0.342	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	11-Mar-09	0.1 U	0.1 U	0.316	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U
5-Apr-11	0.1 U	-	-	-	-	-	-	-	-	
98-IA-MW10	23-Jun-99	-	-	-	-	-	0.1 U	-	-	-
	9-Nov-99	1.0 U	-	-	-	-	0.1 U	-	-	-
	10-Apr-00	0.5 U	-	-	-	-	0.1 U	-	-	-
	29-Aug-00	0.2 U	-	0.4	0.1 U	0.3	0.1 U	0.01 U	-	-
	13-Nov-00	0.3	-	0.3	0.1 U	0.2	0.1 U	0.01 U	-	-
	14-Feb-01	0.2 U	-	0.2	0.1 U	0.1	0.1 U	0.01 U	-	-
	21-May-01	0.2 U	-	0.1 U	0.1 U	0.2	0.1 U	0.01 U	-	-
	28-Aug-01	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	5-Dec-01	0.2 U	-	0.2	0.1 U	0.1	0.1 U	0.01 U	-	-
	27-Feb-02	0.2 U	-	0.2	0.1 U	0.1	0.1 U	0.01 U	-	-
	26-Aug-02	0.2 U	-	0.2	0.1 U	0.1	0.1 U	0.01 U	-	-
	18-Nov-02	0.2 U	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	10-Mar-03	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	2-Jun-03	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	18-Sep-03	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	8-Dec-03	0.2 U	-	0.1	0.1 U	0.1	0.1 U	0.01 U	-	-
	5-Mar-04	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	7-Jun-04	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	14-Sep-04	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	20-Dec-04	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-

Table 3-1 - RDX and Dissolved Metals Analytical Results
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID	Date	RDX (µg/L)	As (µg/L)	Ba (µg/L)	Cd (µg/L)	Cr (µg/L)	Pb (µg/L)	Hg (µg/L)	Se (µg/L)	Ag (µg/L)				
Cleanup Levels		0.8	5	-	5	50	15	2	-	-				
98-IA-MW10 (cont)	19-Mar-05	0.2	U	-	-	-	-	-	-	-				
	2-May-07	0.2	U	0.1	U	0.232	0.1	U	0.1	U	0.1	U		
	11-Mar-09	0.1	U	0.1	U	0.178	0.1	U	0.1	U	0.1	U		
	5-Apr-11	0.1	U	-	-	-	-	-	-	-				
01-IA-MW11	27-Feb-02	0.2	U	-	1.9	0.1	U	0.1	0.1	U	0.1	U		
	29-May-02	0.4	-	0.2	0.1	U	0.1	U	0.1	U	-	-		
	26-Aug-02	0.2	U	-	0.7	0.1	U	0.1	0.1	U	0.1	U		
	18-Nov-02	0.2	U	-	0.6	0.1	U	0.1	0.1	U	0.01	U		
	10-Mar-03	0.2	U	-	0.6	0.1	U	0.1	U	0.01	U	-		
	2-Jun-03	0.2	U	-	0.5	0.1	U	0.1	U	0.01	U	-		
	18-Sep-03	0.2	U	-	0.4	0.1	U	0.1	U	0.01	U	-		
	8-Dec-03	0.2	U	-	0.4	0.1	U	0.1	U	0.01	U	-		
	5-Mar-04	0.2	U	-	0.5	0.1	U	0.1	U	0.01	U	-		
	7-Jun-04	0.2	U	-	0.5	0.1	U	0.1	U	0.01	U	-		
	14-Sep-04	0.2	U	-	0.4	0.1	U	0.1	U	0.01	U	-		
	20-Dec-04	0.2	U	-	0.4	0.1	U	0.1	U	0.01	U	-		
	19-Mar-05	0.2	U	-	0.3	0.1	U	0.1	U	0.01	U	-		
	27-Mar-06	0.2	U	-	-	-	-	-	-	-	-	-		
	2-May-07	0.2	U	0.1	U	0.431	0.1	U	0.1	U	0.1	U	0.1	U
	24-Mar-08	0.1	U	-	-	-	-	-	-	-	-	-		
	9-Mar-09	0.1	U	0.1	U	0.547	0.1	U	0.1	U	0.01	U	0.1	U
	26-Feb-10	0.1	U	-	-	-	-	-	-	-	-	-		
	Duplicate	26-Feb-10	0.1	U	-	-	-	-	-	-	-	-		
		4-Apr-11	0.099	U	-	-	-	-	-	-	-	-		
01-IA-MW12	27-Feb-02	0.2	U	-	0.1	0.1	U	0.1	U	0.1	U	-		
	29-May-02	-	-	0.2	0.1	U	0.1	0.1	U	0.1	U	-		
	26-Aug-02	0.2	U	-	0.2	0.1	U	0.1	U	0.1	U	-		
	18-Nov-02	0.2	U	-	0.2	0.1	U	0.1	U	0.1	U	-		
	10-Mar-03	0.2	U	-	0.2	0.1	U	0.1	U	0.1	U	-		
	2-Jun-03	0.2	U	-	0.2	0.1	U	0.1	U	0.1	U	-		
	18-Sep-03	0.2	U	-	0.2	0.1	U	0.1	U	0.1	U	-		
	8-Dec-03	0.2	U	-	0.1	0.1	U	0.1	U	0.1	U	-		
	5-Mar-04	0.2	U	-	0.1	0.1	U	0.1	U	0.1	U	-		
	7-Jun-04	0.2	U	-	0.1	0.1	U	0.1	U	0.1	U	-		
	14-Sep-04	0.2	U	-	0.1	0.1	U	0.1	U	0.1	U	-		
	20-Dec-04	0.2	U	-	0.2	0.1	U	0.1	U	0.1	U	-		
	19-Mar-05	0.2	U	-	0.1	0.1	U	0.1	U	0.1	U	-		
	2-May-07	0.2	U	0.1	U	0.165	0.1	U	0.1	U	0.1	U	0.1	U
	10-Mar-09	0.1	U	0.1	U	0.16	0.1	U	0.1	U	0.01	U	0.1	U
4-Apr-11	0.099	U	-	-	-	-	-	-	-	-	-			
01-IA-MW13	27-Feb-02	0.2	U	-	0.3	0.1	U	0.1	0.1	U	0.1	U		
	26-Aug-02	0.2	U	-	0.4	0.1	U	0.1	U	0.1	U	-		
	18-Nov-02	0.2	U	-	0.4	0.1	U	0.1	U	0.1	U	-		
	10-Mar-03	0.2	U	-	0.4	0.1	U	0.1	0.1	U	0.1	U		
	2-Jun-03	0.2	U	-	0.3	0.1	U	0.1	U	0.1	U	-		
	18-Sep-03	0.2	U	-	0.3	0.1	U	0.1	0.1	U	0.1	U		
	8-Dec-03	0.2	U	-	0.3	0.1	U	0.1	0.1	U	0.1	U		
	5-Mar-04	0.2	U	-	0.4	0.1	U	0.1	0.1	U	0.1	U		
	7-Jun-04	0.2	U	-	0.3	0.1	U	0.1	0.1	U	0.1	U		
	14-Sep-04	0.2	U	-	0.3	0.1	U	0.1	U	0.1	U	-		
	20-Dec-04	0.2	U	-	0.3	0.1	U	0.1	U	0.1	U	-		
	19-Mar-05	0.2	U	-	0.3	0.1	U	0.1	U	0.1	U	-		
	2-May-07	0.2	U	0.1	U	0.391	0.1	U	0.114	0.1	U	0.1	U	
	11-Mar-09	0.1	U	0.1	U	0.29	0.1	U	0.1	U	0.01	U	0.1	U
	5-Apr-11	0.1	U	-	-	-	-	-	-	-	-			

Table 3-1 - RDX and Dissolved Metals Analytical Results
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID	Date	RDX (µg/L)	As (µg/L)	Ba (µg/L)	Cd (µg/L)	Cr (µg/L)	Pb (µg/L)	Hg (µg/L)	Se (µg/L)	Ag (µg/L)
Cleanup Levels		0.8	5	-	5	50	15	2	-	-
01-IA-MW14	27-Feb-02	0.2 U	-	1	0.1 U	0.3	0.3	0.01 U	-	-
	29-May-02	0.2 U	-	0.8	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	26-Aug-02	0.2 U	-	0.8	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	10-Mar-03	0.2 U	-	0.5	0.1 U	0.2	0.1 U	0.01 U	-	-
	2-Jun-03	0.2 U	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	8-Dec-03	0.2 U	-	-	-	-	-	-	-	-
	5-Mar-04	0.2 U	-	0.3	0.1 U	0.2	0.1 U	-	-	-
	7-Jun-04	0.2 U	-	0.4	0.1 U	0.4	0.1 U	-	-	-
	14-Sep-04	-	-	-	-	-	-	0.01 U	-	-
	20-Dec-04	-	-	-	-	-	-	0.01 U	-	-
	19-Mar-05	0.2 U	-	0.4	0.1 U	0.4	0.1 U	0.01 U	-	-
	2-May-07	0.2 U	0.261	0.605	0.1 U	0.359	0.1 U	0.01 U	0.1 U	0.1 U
	11-Mar-09	0.1 U	0.217	0.437	0.1 U	0.27	0.1 U	0.01 U	0.1 U	0.1 U
	5-Apr-11	0.1 U	-	-	-	-	-	-	-	-
01-IA-MW15	26-Aug-02	0.2 U	-	0.5	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	18-Nov-02	0.2 U	-	0.7	0.1 U	0.1	0.1 U	0.01 U	-	-
	10-Mar-03	0.2 U	-	0.7	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	2-Jun-03	0.2 U	-	0.5	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	18-Sep-03	0.2 U	-	0.5	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	8-Dec-03	0.2 U	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	5-Mar-04	0.2 U	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	7-Jun-04	0.2 U	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	20-Dec-04	0.2 U	-	0.7	0.1 U	0.1	0.1 U	0.01 U	-	-
	19-Mar-05	0.2 U	-	0.6	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	2-May-07	0.2 U	0.115	0.315	0.1 U	0.114	0.1 U	0.1 U	0.1 U	0.1 U
	10-Mar-09	0.1 U	0.126	0.386	0.1 U	0.145	0.1 U	0.1 U	0.1 U	0.1 U
	Duplicate 10-Mar-09	0.1 U	0.113	0.412	0.1 U	0.134	0.1 U	0.01 U	0.1 U	0.1 U
	Duplicate 5-Apr-11	0.1 U	-	-	-	-	-	-	-	-
9700-MW1	23-Jun-99	-	-	-	-	-	0.1 U	-	-	-
	9-Nov-99	1.0 U	-	-	-	-	0.1 U	-	-	-
	10-Apr-00	0.5 U	-	-	-	-	0.1 U	-	-	-
	29-Aug-00	0.2 U	-	0.5	0.1 U	0.3	0.1 U	0.01 U	-	-
	13-Nov-00	0.2 U	-	0.5	0.1 U	0.2	0.1 U	0.01 U	-	-
	14-Feb-01	0.2 U	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	21-May-01	0.2 U	-	0.4	0.1 U	0.1	0.1 U	0.01 U	-	-
	28-Aug-01	0.5	-	0.2	-	0.2	-	-	-	-
	5-Dec-01	0.2 U	-	0.4	-	0.1	-	-	-	-
	27-Feb-02	0.2 U	-	0.4	0.1 U	0.2	0.1 U	0.01 U	-	-
	29-May-02	0.2 U	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	26-Aug-02	0.2 U	-	0.5	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	18-Nov-02	0.2 U	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	10-Mar-03	0.2 U	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	2-Jun-03	0.2 U	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	18-Sep-03	0.2 U	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	8-Dec-03	0.2 U	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	5-Mar-04	0.2 U	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	7-Jun-04	0.2 U	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	14-Sep-04	0.2 U	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	20-Dec-04	0.2 U	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	19-Mar-05	0.2 U	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	10-Mar-09	0.1 U	0.1 U	0.235	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U
	7-Apr-11	0.1 U	-	-	-	-	-	-	-	-

Table 3-1 - RDX and Dissolved Metals Analytical Results
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID	Date	RDX (µg/L)	As (µg/L)	Ba (µg/L)	Cd (µg/L)	Cr (µg/L)	Pb (µg/L)	Hg (µg/L)	Se (µg/L)	Ag (µg/L)
Cleanup Levels		0.8	5	-	5	50	15	2	-	-
MW-3(3138)	23-Jun-99	-	-	-	-	-	0.1 U	-	-	-
	9-Nov-99	1.0 U	-	-	-	-	0.1 U	-	-	-
	10-Apr-00	0.5 U	-	-	-	-	0.1 U	-	-	-
	29-Aug-00	0.2 U	-	26.8	0.1 U	0.28	0.1 U	0.01 U	-	-
	13-Nov-00	0.2 U	-	20.1	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	21-May-01	0.2 U	-	20.5	0.1 U	0.1	0.1 U	0.01 U	-	-
	5-Dec-01	0.2 U	-	16.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	27-Feb-02	0.2 U	-	22.4	0.1 U	0.1	0.1 U	0.01 U	-	-
	29-May-02	0.2 U	-	23.6	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	26-Aug-02	0.2 U	-	21.1	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	18-Nov-02	0.2 U	-	17.7	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	10-Mar-03	0.2 U	-	23.1	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	2-Jun-03	0.2 U	-	19.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	18-Sep-03	0.2 U	-	17.6	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	8-Dec-03	0.2 U	-	17.9	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	5-Mar-04	0.2 U	-	21	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	7-Jun-04	0.2 U	-	21.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	14-Sep-04	0.2 U	-	19.9	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	20-Dec-04	0.2 U	-	19	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	19-Mar-05	0.2 U	-	23.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
2-May-07	0.2 U	0.447	18.8	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
11-Mar-09	0.1 U	0.564	16.9	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U	
7-Apr-11	0.1 U	-	-	-	-	-	-	-	-	
85-PA-384	23-Jun-99	-	-	-	-	-	0.1 U	0.01 U	-	-
	9-Nov-99	1.0 U	-	-	-	-	0.1 U	0.01 U	-	-
	10-Apr-00	0.5 U	-	-	-	-	0.1 U	0.01 U	-	-
	29-Aug-00	0.2 U	-	0.4	0.1 U	0.1	0.1 U	0.01 U	-	-
	13-Nov-00	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	14-Feb-01	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	21-May-01	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	28-Aug-01	0.2 U	-	0.2	0.1 U	0.01 U	0.1 U	0.01 U	-	-
	5-Dec-01	0.2 U	-	0.1	0.1 U	0.01 U	0.1 U	0.01 U	-	-
	27-Feb-02	0.2 U	-	-	-	-	-	-	-	-
	29-May-02	0.2 U	-	0.1	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	26-Aug-02	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	18-Nov-02	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	10-Mar-03	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	2-Jun-03	0.2 U	-	0.1	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	18-Sep-03	0.2 U	-	0.1	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	8-Dec-03	0.2 U	-	0.1	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	5-Mar-04	0.2 U	-	0.1	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	7-Jun-04	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	14-Sep-04	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
20-Dec-04	0.2 U	-	0.1	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
19-Mar-05	0.2 U	-	0.1	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
2-May-07	0.2 U	0.1 U	0.174	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
10-Mar-09	0.1 U	0.1 U	0.204	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U	
7-Apr-11	0.1 U	-	-	-	-	-	-	-	-	
AIA-SP01	23-Jun-99	1.0 U	-	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	9-Nov-99	1.0 U	-	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	10-Apr-00	0.3 J	-	0.1 J	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	29-Aug-00	0.4	-	0.3	0.1 U	0.2	0.1 U	0.01 U	-	-
	13-Nov-00	0.3	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	14-Feb-01	0.4	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	21-May-01	0.3	-	0.4	0.1 U	0.4	0.1 U	0.01 U	-	-
	28-Aug-01	0.3	-	0.2	-	0.1 U	-	-	-	-
	5-Dec-01	0.2	-	0.2	-	0.1 U	-	-	-	-
	27-Feb-02	0.3	-	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	-	-

Table 3-1 - RDX and Dissolved Metals Analytical Results
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID	Date	RDX (µg/L)	As (µg/L)	Ba (µg/L)	Cd (µg/L)	Cr (µg/L)	Pb (µg/L)	Hg (µg/L)	Se (µg/L)	Ag (µg/L)	
	Cleanup Levels	0.8	5	-	5	50	15	2	-	-	
AIA-SP01 (cont)	29-May-02	0.5	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	26-Aug-02	0.4	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	18-Nov-02	0.3	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	10-Mar-03	0.4	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	2-Jun-03	0.3	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	18-Sep-03	0.4	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	8-Dec-03	0.3	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	5-Mar-04	0.2	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	7-Jun-04	0.4	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	14-Sep-04	0.3	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	20-Dec-04	0.3	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	19-Mar-05	0.2	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	27-Sep-05	0.3	-	-	-	-	-	-	-	-	-
	27-Mar-06	0.3	-	-	-	-	-	-	-	-	-
	7-Aug-06	0.6	-	-	-	-	-	-	-	-	-
	2-May-07	0.2	0.1 U	0.172	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	11-Sep-07	0.2	-	-	-	-	-	-	-	-	-
	24-Mar-08	0.4	-	-	-	-	-	-	-	-	-
	29-Sep-08	0.20	-	-	-	-	-	-	-	-	-
	9-Mar-09	0.12	0.1 U	0.219	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U	0.1 U
	28-Sep-09	0.23	-	-	-	-	-	-	-	-	-
	26-Feb-10	0.1 U	-	-	-	-	-	-	-	-	-
	13-Sep-10	0.24	-	-	-	-	-	-	-	-	-
	4-Apr-11	0.28	-	-	-	-	-	-	-	-	-
	2-Aug-11	0.24	-	-	-	-	-	-	-	-	-
	24-Mar-12	0.15	-	-	-	-	-	-	-	-	-
	6-Aug-12	0.16	-	-	-	-	-	-	-	-	-
	20-Apr-13	0.16	-	-	-	-	-	-	-	-	-
	Duplicate	20-Apr-13	0.16	-	-	-	-	-	-	-	-
		26-Aug-13	0.15	-	-	-	-	-	-	-	-
		12-May-14	0.32	-	-	-	-	-	-	-	-
		20-Oct-14	0.18 C	-	-	-	-	-	-	-	-
		14-Apr-15	0.21 C	-	-	-	-	-	-	-	-
19-Oct-15		0.19 JC	-	-	-	-	-	-	-	-	
25-Apr-16		0.35	-	-	-	-	-	-	-	-	
1-Nov-16		0.15 J	-	-	-	-	-	-	-	-	
10-Apr-17		0.18 J	-	-	-	-	-	-	-	-	
28-Aug-17		0.18 J	-	-	-	-	-	-	-	-	
AIA-SP02	23-Jun-99	1.0 U	-	-	-	-	-	-	-	-	
	9-Nov-99	1.0 U	-	-	-	-	-	-	-	-	
	10-Apr-00	0.5 J	-	0.07 J	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	29-Aug-00	0.2	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	13-Nov-00	0.2	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	14-Feb-01	0.2	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	21-May-01	-	-	-	0.1 U	0.3	0.1 U	0.01 U	-	-	
	28-Aug-01	0.2 U	-	0.2	-	0.1 U	-	-	-	-	
	5-Dec-01	0.2	-	0.2	-	0.1 U	-	-	-	-	
	27-Feb-02	0.2 U	-	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	29-May-02	0.3	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	26-Aug-02	0.4	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	18-Nov-02	0.3	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	10-Mar-03	0.4	-	0.4	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	2-Jun-03	0.4	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	18-Sep-03	0.4	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	8-Dec-03	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	5-Mar-04	0.2	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	7-Jun-04	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	14-Sep-04	0.3	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
20-Dec-04	0.3	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-		
19-Mar-05	0.2	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-		

Table 3-1 - RDX and Dissolved Metals Analytical Results
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID	Date	RDX (µg/L)	As (µg/L)	Ba (µg/L)	Cd (µg/L)	Cr (µg/L)	Pb (µg/L)	Hg (µg/L)	Se (µg/L)	Ag (µg/L)
	Cleanup Levels	0.8	5	-	5	50	15	2	-	-
AIA-SP02 (cont)	27-Sep-05	0.2	-	-	-	-	-	-	-	-
	27-Mar-06	0.2	-	-	-	-	-	-	-	-
	7-Aug-06	0.3	-	-	-	-	-	-	-	-
	2-May-07	2.14 *	0.1 U	0.141	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	11-Sep-07	0.1	-	-	-	-	-	-	-	-
	24-Mar-08	0.4	-	-	-	-	-	-	-	-
	29-Sep-08	0.16	-	-	-	-	-	-	-	-
	9-Mar-09	0.14	0.1 U	0.215	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U
	28-Sep-09	0.19	-	-	-	-	-	-	-	-
	26-Feb-10	0.78	-	-	-	-	-	-	-	-
	13-Sep-10	0.16	-	-	-	-	-	-	-	-
	4-Apr-11	0.22	-	-	-	-	-	-	-	-
	2-Aug-11	0.18	-	-	-	-	-	-	-	-
	24-Mar-12	0.14	-	-	-	-	-	-	-	-
	6-Aug-12	0.16	-	-	-	-	-	-	-	-
	20-Apr-13	0.099	-	-	-	-	-	-	-	-
	26-Aug-13	0.1	-	-	-	-	-	-	-	-
	12-May-14	0.16	-	-	-	-	-	-	-	-
	20-Oct-14	0.11 C	-	-	-	-	-	-	-	-
	13-Apr-15	0.56 C	-	-	-	-	-	-	-	-
19-Oct-15	0.5 C	-	-	-	-	-	-	-	-	
25-Apr-16	0.41	-	-	-	-	-	-	-	-	
1-Nov-16	0.2 U	-	-	-	-	-	-	-	-	
10-Apr-17	0.2 U	-	-	-	-	-	-	-	-	
28-Aug-17	0.14 J	-	-	-	-	-	-	-	-	
AIA-SP03	23-Jun-99	1.0 U	-	1.0 U	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	9-Nov-99	1.0 U	-	1.0 U	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	10-Apr-00	0.5 U	-	0.14 J	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	29-Aug-00	0.3	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	13-Nov-00	0.3	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	14-Feb-01	0.4	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	21-May-01	0.3	-	0.4	0.1 U	0.3	0.1 U	0.01 U	-	-
	28-Aug-01	0.3	-	0.4	-	0.1 U	-	-	-	-
	5-Dec-01	0.3	-	0.2	-	0.2	-	-	-	-
	27-Feb-02	0.3	-	1.0 U	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	29-May-02	0.3	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	26-Aug-02	0.4	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	18-Nov-02	0.4	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	10-Mar-03	0.3	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	2-Jun-03	0.3	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	18-Sep-03	0.4	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	8-Dec-03	0.4	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	5-Mar-04	0.2	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	7-Jun-04	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	14-Sep-04	0.3	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	20-Dec-04	0.2	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	19-Mar-05	0.2	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-
	27-Sep-05	0.2	-	-	-	-	-	-	-	-
	27-Mar-06	0.2	-	-	-	-	-	-	-	-
	7-Aug-06	0.2 J	-	-	-	-	-	-	-	-
	2-May-07	0.2 U	0.1 U	0.217	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	11-Sep-07	0.1	-	-	-	-	-	-	-	-
	24-Mar-08	0.4	-	-	-	-	-	-	-	-
	29-Sep-08	0.156	-	-	-	-	-	-	-	-
	9-Mar-09	0.1 U	0.1 U	0.175	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U
	28-Sep-09	0.171	-	-	-	-	-	-	-	-
	26-Feb-10	0.12	-	-	-	-	-	-	-	-
	13-Sep-10	0.11	-	-	-	-	-	-	-	-
4-Apr-11	0.13	-	-	-	-	-	-	-	-	
1-Aug-11	0.14	-	-	-	-	-	-	-	-	

Table 3-1 - RDX and Dissolved Metals Analytical Results
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID	Date	RDX (µg/L)	As (µg/L)	Ba (µg/L)	Cd (µg/L)	Cr (µg/L)	Pb (µg/L)	Hg (µg/L)	Se (µg/L)	Ag (µg/L)						
Cleanup Levels		0.8	5	-	5	50	15	2	-	-						
AIA-SP03 (cont)	24-Mar-12	0.13	-	-	-	-	-	-	-	-						
	6-Aug-12	0.1	U	-	-	-	-	-	-	-						
	20-Apr-13	0.087	J	-	-	-	-	-	-	-						
	26-Aug-13	0.063	J	-	-	-	-	-	-	-						
	12-May-14	0.058	J	-	-	-	-	-	-	-						
	20-Oct-14	0.066	JC	-	-	-	-	-	-	-						
	19-Oct-15	0.55	C	-	-	-	-	-	-	-						
	25-Apr-16	0.48		-	-	-	-	-	-	-						
	1-Nov-16	0.32		-	-	-	-	-	-	-						
10-Apr-17	0.38	C	-	-	-	-	-	-	-							
28-Aug-17	0.40		-	-	-	-	-	-	-							
AIA-SP04	23-Jun-99	1.0	U	-	0.1	U	0.1	U	0.1	U	0.01	U	-	-		
	9-Nov-99	1.0	U	-	0.1	U	0.1	U	0.1	U	0.01	U	-	-		
	10-Apr-00	0.9		-	0.05	J	0.1	U	0.15	0.1	U	0.01	U	-		
	29-Aug-00	0.8		-	0.4	0.1	U	0.2	0.2	0.01	U	-	-			
	13-Nov-00	0.9		-	0.1	0.1	U	0.1	U	0.01	U	-	-			
	14-Feb-01	0.7		-	0.2	0.1	U	0.1	U	0.01	U	-	-			
	21-May-01	0.7		-	0.2	0.1	U	0.1	U	0.01	U	-	-			
	28-Aug-01	0.7		-	0.2	-	0.1	U	-	-	-	-	-			
	5-Dec-01	0.6		-	0.2	-	0.1	U	-	-	-	-	-			
	27-Feb-02	0.6		-	0.1	U	0.1	U	0.1	U	0.01	U	-	-		
	29-May-02	0.7		-	0.4	0.1	U	0.1	U	0.01	U	-	-			
	26-Aug-02	0.7		-	0.4	0.1	U	0.1	U	0.01	U	-	-			
	18-Nov-02	0.8		-	0.2	0.1	U	0.1	U	0.01	U	-	-			
	10-Mar-03	0.7		-	0.3	0.1	U	0.1	U	0.01	U	-	-			
	2-Jun-03	0.5		-	0.2	0.1	U	0.1	U	0.01	U	-	-			
	18-Sep-03	0.6		-	0.2	0.1	U	0.1	U	0.01	U	-	-			
	8-Dec-03	0.5		-	0.2	0.1	U	0.1	U	0.01	U	-	-			
	5-Mar-04	0.5		-	0.3	0.1	U	0.1	U	0.01	U	-	-			
	7-Jun-04	0.7		-	0.3	0.1	U	0.1	U	0.01	U	-	-			
	14-Sep-04	0.5		-	0.2	0.1	U	0.1	U	0.01	U	-	-			
	20-Dec-04	0.4		-	0.2	0.1	U	0.1	U	0.01	U	-	-			
	19-Mar-05	0.5		-	-	-	-	-	-	-	-	-	-			
	27-Sep-05	0.5		-	-	-	-	-	-	-	-	-	-			
	27-Mar-06	0.5		-	-	-	-	-	-	-	-	-	-			
	7-Aug-06	0.8		-	-	-	-	-	-	-	-	-	-			
	2-May-07	0.6		0.1	U	0.192	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
	11-Sep-07	0.9		-	-	-	-	-	-	-	-	-	-			
	24-Mar-08	1.0		-	-	-	-	-	-	-	-	-	-			
	29-Sep-08	0.781		-	-	-	-	-	-	-	-	-	-			
	9-Mar-09	0.67		0.1	U	0.161	0.1	U	0.1	U	0.01	U	0.1	U	0.1	U
	28-Sep-09	0.724		-	-	-	-	-	-	-	-	-	-			
	26-Feb-10	0.15		-	-	-	-	-	-	-	-	-	-			
	13-Sep-10	0.89		-	-	-	-	-	-	-	-	-	-			
4-Apr-11	0.87		-	-	-	-	-	-	-	-	-	-				
1-Aug-11	1.1		-	-	-	-	-	-	-	-	-	-				
24-Mar-12	1.1		-	-	-	-	-	-	-	-	-	-				
6-Aug-12	0.85		-	-	-	-	-	-	-	-	-	-				
20-Apr-13	0.7		-	-	-	-	-	-	-	-	-	-				
26-Aug-13	0.59		-	-	-	-	-	-	-	-	-	-				
12-May-14	0.63		-	-	-	-	-	-	-	-	-	-				
20-Oct-14	0.8	C	-	-	-	-	-	-	-	-	-	-				
13-Apr-15	0.38	J	-	-	-	-	-	-	-	-	-	-				
19-Oct-15	0.36	C	-	-	-	-	-	-	-	-	-	-				
25-Apr-16	0.41		-	-	-	-	-	-	-	-	-	-				
1-Nov-16	0.24		-	-	-	-	-	-	-	-	-	-				
10-Apr-17	Restricted Access															
28-Aug-17	0.31		-	-	-	-	-	-	-	-						
AIA-SP05	23-Jun-99	1.0	U	-	0.1	U	0.1	U	0.1	U	0.01	U	-	-		
	9-Nov-99	1.0	U	-	0.1	U	0.1	U	0.1	U	0.01	U	-	-		
	10-Apr-00	0.5	U	-	0.1	U	0.1	U	0.1	U	0.01	U	-	-		
	29-Aug-00	0.2	U	-	0.3	0.1	U	0.1	U	0.01	U	-	-			
	13-Nov-00	0.2	U	-	0.1	0.1	U	0.1	U	0.01	U	-	-			
	14-Feb-01	0.2	U	-	0.1	0.1	U	0.1	U	0.01	U	-	-			
21-May-01	0.3		-	0.4	0.1	U	0.3	0.1	U	0.01	U	-	-			

Table 3-1 - RDX and Dissolved Metals Analytical Results
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID	Date	RDX (µg/L)	As (µg/L)	Ba (µg/L)	Cd (µg/L)	Cr (µg/L)	Pb (µg/L)	Hg (µg/L)	Se (µg/L)	Ag (µg/L)	
	Cleanup Levels	0.8	5	0.1	5	50	15	2	-	-	
AIA-SP05 cont.	28-Aug-01	0.2 U	-	0.1	-	0.1 U	-	-	-	-	
	5-Dec-01	0.2 U	-	0.1	-	0.1 U	-	-	-	-	
	27-Feb-02	0.2 U	-	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	29-May-02	0.2 U	-	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	26-Aug-02	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	18-Nov-02	0.2 U	-	0.1	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	10-Mar-03	0.2 U	-	0.1	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	2-Jun-03	0.2 U	-	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	18-Sep-03	0.2 U	-	0.1	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	8-Dec-03	0.2 U	-	0.1	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	5-Mar-04	0.2 U	-	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	7-Jun-04	0.2 U	-	0.1	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	14-Sep-04	0.2 U	-	0.3	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	20-Dec-04	0.2 U	-	0.1	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	19-Mar-05	0.2 U	-	0.1	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	27-Sep-05	0.2 U	-	-	-	-	-	-	-	-	-
	27-Mar-06	0.2 U	-	-	-	-	-	-	-	-	-
	7-Aug-06	0.2 U	-	-	-	-	-	-	-	-	-
	2-May-07	0.2 U	0.1 U	0.19	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
	11-Sep-07	0.1 U	-	-	-	-	-	-	-	-	-
	24-Mar-08	0.1 U	-	-	-	-	-	-	-	-	-
	29-Sep-08	0.1 U	-	-	-	-	-	-	-	-	-
	9-Mar-09	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U	0.1 U
	28-Sep-09	0.1 U	-	-	-	-	-	-	-	-	-
	26-Feb-10	0.15	-	-	-	-	-	-	-	-	-
	13-Sep-10	0.13	-	-	-	-	-	-	-	-	-
	4-Apr-11	0.099 U	-	-	-	-	-	-	-	-	-
	1-Aug-11	0.099	-	-	-	-	-	-	-	-	-
	24-Mar-12	0.1 U	-	-	-	-	-	-	-	-	-
	6-Aug-12	0.1 U	-	-	-	-	-	-	-	-	-
	20-Apr-13	0.1 U	-	-	-	-	-	-	-	-	-
	26-Aug-13	0.028	-	-	-	-	-	-	-	-	-
	12-May-14	0.017 J	-	-	-	-	-	-	-	-	-
20-Oct-14	0.04 U	-	-	-	-	-	-	-	-	-	
13-Apr-15	0.04 U	-	-	-	-	-	-	-	-	-	
19-Oct-15	0.2 U	-	-	-	-	-	-	-	-	-	
25-Apr-16	0.2 U	-	-	-	-	-	-	-	-	-	
1-Nov-16	0.2 U	-	-	-	-	-	-	-	-	-	
10-Apr-17		Restricted Access									
28-Aug-17	0.14 JN	-	-	-	-	-	-	-	-	-	
Hatchery	18-Nov-02	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	2-Jun-03	0.2 U	-	-	-	-	-	-	-	-	
	18-Sep-03	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	8-Dec-03	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	7-Jun-04	0.2 U	-	-	-	-	-	-	-	-	
	14-Sep-04	0.2 U	-	-	-	-	-	-	-	-	
	20-Dec-04	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	19-Mar-05	0.2 U	-	0.2	0.1 U	0.1 U	0.1 U	0.01 U	-	-	
	27-Sep-05	0.2 U	-	-	-	-	-	-	-	-	
	27-Mar-06	0.2 U	-	-	-	-	-	-	-	-	
	7-Aug-06	0.2 U	-	-	-	-	-	-	-	-	
	2-May-07	0.2 U	0.1 U	0.205	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	
	11-Sep-07	0.1 U	-	-	-	-	-	-	-	-	
	24-Mar-08	0.1 U	-	-	-	-	-	-	-	-	
	11-Mar-09	0.1 U	0.1 U	0.196	0.1 U	0.1 U	0.1 U	0.01 U	0.1 U	0.1 U	
	28-Sep-09	0.1 U	-	-	-	-	-	-	-	-	
	26-Feb-10	0.098	-	-	-	-	-	-	-	-	
13-Sep-10	0.09 J	-	-	-	-	-	-	-	-		
4-Apr-11	0.12	-	-	-	-	-	-	-	-		
2-Aug-11	0.1 U	-	-	-	-	-	-	-	-		

Table 3-1 - RDX and Dissolved Metals Analytical Results
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Location ID	Date	RDX (µg/L)	As (µg/L)	Ba (µg/L)	Cd (µg/L)	Cr (µg/L)	Pb (µg/L)	Hg (µg/L)	Se (µg/L)	Ag (µg/L)
Cleanup Levels		0.8	5	-	5	50	15	2	-	-
Hatchery (cont)	24-Mar-12	0.14	-	-	-	-	-	-	-	-
	6-Aug-12	0.1	U	-	-	-	-	-	-	-
Duplicate	6-Aug-12	0.1	U	-	-	-	-	-	-	-
	20-Apr-13	0.1	U	-	-	-	-	-	-	-
	12-May-14	0.071	J	-	-	-	-	-	-	-
	20-Oct-14	0.1	C	-	-	-	-	-	-	-
	14-Apr-15	0.078	J	-	-	-	-	-	-	-
Duplicate	19-Oct-15	0.120	JN	-	-	-	-	-	-	-
	19-Oct-15	0.2	U	-	-	-	-	-	-	-
	25-Apr-16	0.2	U	-	-	-	-	-	-	-
	1-Nov-16	0.2	U	-	-	-	-	-	-	-
	10-Apr-17	0.2	U	-	-	-	-	-	-	-
	28-Aug-17	0.2	U	-	-	-	-	-	-	-

Notes:

RDX = Research Department eXplosive

As = Arsenic

Ba = Barium

Cd = Cadmium

Cr = Chromium

Pb = Lead

Hg = Mercury

Se = Selenium

Ag = Silver

µg/L = Micrograms per liter

0.1/0.04 U = Analyte not detected at or above laboratory practical quantification limit of 0.2 or 0.04 µg/L

BOLD = Analyte detected at or above laboratory practical quantification limit of 0.1 µg/L

BOLD = Analyte detected at or above cleanup level

R = Results rejected due to matrix interference

J = Estimated concentration

C = Qualitatively confirmed by gas chromatography/mass spectrometry methods/pattern recognition/comparing historical data

U = Analyte not detected at or above method detection limit

- = Not sampled, not applicable, no data

* - Suspected outliers. Checked analytical reports and did not find qualifier for results.

RDX cleanup level is for groundwater, MTCA Method B, Carcinogen, standard formula value.

Metals cleanup levels are MTCA Method A cleanup levels for groundwater.

Table 4-1 - Relative Percent Difference between Primary and Duplicate Samples
 Artillery Impact Area, Joint Base Lewis-McChord, Washington 98433

Sample ID Duplicate ID	RDX (µg/L)
November 2016*	
98-IA-MW01	0.2
Dup 1	0.2
RPD	0%
April 2017	
Restricted Access. No duplicates collected.	
August 2017**	
98-IA-MW01	0.12
Dup 1	0.69
RPD	141%

Notes:

* No detections reported above the reporting limit

** Estimated concentrations

µg/L = Micrograms per liter

RPD = Relative Percent Difference

Table 5-1 - Descriptive Statistics
 Artillery Impact Area, Joint Base Lewis - McChord, Washington 98433

Well ID	First Sample Date	Last Sample Date	Number of ND's	Number of Samples	Sample Mean	Standard Deviation	Minimum RDX Conc.	Maximum RDX Conc.	Date*	Normally or Log Normally Distributed?
Artillery Impact Area										
98-IA-MW01	23-Jun-99	28-Aug-17	6	39	0.320	0.234	0.12	1.4	23-Jun-99	No
98-IA-MW02	23-Jun-99	28-Aug-17	4	27	0.489	0.617	0.09	3.2	23-Jun-99	Yes
98-IA-MW03	23-Jun-99	28-Aug-17	8	42	0.664	0.385	0.1	1.5	24-Mar-08	No
98-IA-MW04	23-Jun-99	28-Aug-17	1	42	0.441	0.186	0.16	1.3	24-Mar-08	No
98-IA-MW05	23-Jun-99	28-Aug-17	23	22	0.199	0.201	0.04	1	-	non-detects
AIA-SP01	23-Jun-99	28-Aug-17	3	47	0.307	0.178	0.12	1	9-Nov-99	No
AIA-SP02	23-Jun-99	28-Aug-17	8	45	0.291	0.208	0.099	1	9-Nov-99	No
AIA-SP03	23-Jun-99	28-Aug-17	7	46	0.287	0.198	0.058	1	9-Nov-99	Yes
AIA-SP04	23-Jun-99	28-Aug-17	2	46	0.671	0.221	0.15	1.1	27-Feb-12	Yes
AIA-SP05	23-Jun-99	28-Aug-17	41	46	0.205	0.188	0.017	1	9-Nov-99	non-detects
Hatchery	18-Nov-02	28-Aug-17	25	32	0.151	0.051	0.071	0.2	2-May-07	non-detects

Notes:

- = Not Applicable

* = Date sample was collected from monitoring well or spring with highest concentration of RDX

Statistics were not run if non-detects are more than half of the data set per well per analyte.

Alpha level set at 0.05 for summary statistics

Table 5-2 - Test for Normality and Linear Regression Trends of RDX Concentrations
 Artillery Impact Area, Joint Base Lewis - McChord, Washington 98433

Well ID	P Value	Normally Distributed?	Log P Value	Log Normally Distributed?	Linear Regression P Value	Slope	Trend	Statistically?
98-IA-MW01	<0.0001	No	0.0035	No	-	-	-	-
98-IA-MW02	<0.0001	No	0.3134	Yes	0.0242	-0.0001265	Decreasing	Yes
98-IA-MW03	0.0107	No	0.0155	No	-	-	-	-
98-IA-MW04	<0.0001	No	0.0006	No	-	-	-	-
AIA-SP01	<0.0001	No	0.0335	No	-	-	-	-
AIA-SP02	<0.0001	No	0.0062	No	-	-	-	-
AIA-SP03	<0.0001	No	0.1849	Yes	0.0088	-0.0000383	Decreasing	Yes
AIA-SP04	0.7387	Yes	-	-	0.0544	-0.0000323	Decreasing	No

Notes:

- = Not measured, not applicable

Alpha level set at 0.05 for linear regression

Table 5-3 - Mann-Kendall Test on Non-Parametric RDX Concentrations

Artillery Impact Area, Joint Base Lewis - McChord, Washington 98433

Well ID	Tau Statistic	Two Tailed P Value	Trend	Statistically?
98-IA-MW01	-0.70	<0.0001	Decreasing	Yes
98-IA-MW03	0.24	0.0295	Increasing	Yes
98-IA-MW04	-0.55	<0.0001	Decreasing	Yes
AIA-SP01	-0.47	<0.0001	Decreasing	Yes
AIA-SP02	-0.30	0.0050	Decreasing	Yes

Notes:

Alpha level set at 0.05 for Kendall's Tau test for correlation

APPENDIX A

**COMPLETED FIELD FORMS AND
LABORATORY ANALYTICAL REPORTS**

(PROVIDED ON DISC)



ALS Environmental
ALS Group USA, Corp
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Kelso, WA 98626
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F : +1 360 636 1068
www.alsglobal.com

December 05, 2016

Analytical Report for Service Request No: K1613397

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

RE: JBLM AIA / TO 01B

Dear Scott,

Enclosed are the results of the sample(s) submitted to our laboratory November 02, 2016
For your reference, these analyses have been assigned our service request number **K1613397**.

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 contact me 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.
Senior Project
Manager



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 Nitroaromatics and Nitramines (Explosives)

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	-
ISO 17025	http://www.pjllabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
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
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
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Phone (360)577-7222 Fax (360)636-1068
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ALS ENVIRONMENTAL

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

Service Request No.: K1613397
Date Received: 11/02/16

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

Eleven water samples were received for analysis at ALS Environmental on 11/02/16. 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.

Explosives by EPA Method 8330

Lab Control Sample Exceptions:

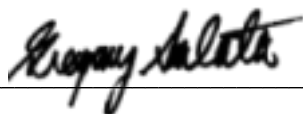
The lower DOD-specific control criterion of a few compounds for Laboratory Control Sample (LCS) KWG1610140 was outside the lower control criterion. Recovery in the matrix spike and duplicate matrix spike was acceptable, which indicated the analytical batch was in control and the outlier was isolated to the LCS. The error associated with reduced recovery indicated a potential low bias. The data was flagged to indicate the problem.

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.

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

Approved by _____





Chain of Custody

ALS Environmental—Kelso Laboratory
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ALS Environmental

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 PH: (360) 577-7222

Chain-of-Custody

K1613397

WORKORDER #	
PAGE	1 of 1

PROJECT NAME: JBLM AIA		SAMPLER: V. Sunrise Patterson		DATE:	11/1/2016		TURNAROUND:		21 Day		DISPOSAL:	By Lab	
PROJECT No. TO 01B		SITE ID:		EDD FORMAT:		PURCHASE ORDER:		PO-1281AU		BILL TO COMPANY:		Sealaska Environmental Services, LLC	
COMPANY NAME: Sealaska Environmental Services, LLC		INVOICE ATTN TO:		ADDRESS:		CITY / STATE / ZIP:		PHONE:		E-MAIL:		aaron.vernik@sealaska.com	
SEND REPORT TO: Aaron Vernik		ADDRESS:		CITY / STATE / ZIP:		PHONE:		E-MAIL:		EPA SW846-8330 Nitroaromatics/Nitramines			
ADDRESS: 18743 Front Street NE, STE 201		CITY / STATE / ZIP:		PHONE:		E-MAIL:							
CITY / STATE / ZIP: Poulsbo, WA		PHONE:		E-MAIL:									
PHONE: (425) 326-0280		E-MAIL:											
E-MAIL: aaron.vernik@sealaska.com													
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	MS/MSD						
1	AIA161101AIASP01	W	11/1/2016	9:10	2	8	NO	2					
2	AIA161101AIASP02	W	11/1/2016	12:15	2	8	NO	2					
3	AIA161101AIASP03	W	11/1/2016	9:45	2	8	NO	2					
4	AIA161101AIASP04	W	11/1/2016	11:20	6	8	NO	2					
5	AIA161101AIASP05	W	11/1/2016	10:30	2	8	NO	2					
6	AIA161101FHDS	W	11/1/2016	9:10	2	8	YES	6					
7	AIA161101IDW	W	11/1/2016	14:10	2	8	NO	2					
8	AIA16110198IAMW01	W	11/1/2016	13:15	2	8	NO	2					
9	AIA16110198IAMW03	W	11/1/2016	9:30	2	8	NO	2					
10	AIA16110198IAMW04	W	11/1/2016	11:10	2	8	NO	2					
11	AIA16110198IAMW11	W	11/1/2016	13:20	2	8	NO	2					

*Time Zone: PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:
AS PER CONTRACT

QC PACKAGE (check below)	
<input type="checkbox"/>	LEVEL II (Standard QC)
<input type="checkbox"/>	LEVEL III (Std QC + forms)
<input type="checkbox"/>	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	<i>[Signature]</i>	V. Sunrise Patterson	11/1/2016	9:00
RECEIVED BY		MC Delivery		
RELINQUISHED BY		MC Delivery		
RECEIVED BY	<i>[Signature]</i>	SWOLF	11/2/16	11:30
RELINQUISHED BY				
RECEIVED BY				



PC Carra

Cooler Receipt and Preservation Form

Client Sealaska Service Request K16 13397
 Received: 11/2/16 Opened: 11/2/16 By: [Signature] Unloaded: 11/2/16 By: [Signature]

1. Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
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? 2 front & 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 NA	Tracking Number NA	Filed
-0.5	-0.5	0.7	0.7	0	351			<input checked="" type="checkbox"/>
-0.3	-0.4	2.8	2.4	-0.1	323			
-0.7	-0.5	1.2	1.4	+0.2	364			

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. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA Y N
 If applicable, tissue samples were received: Frozen Partially Thawed Thawed
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	Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions:
Rec'd 6 bottles for 6th sample, not the fourth
Time for QC sample does not match COC.



Nitroaromatics and Nitramines (Explosives)

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 AIA/TO 01B

Service Request: K1613397

**Cover Page - Organic Analysis Data Package
 Nitroaromatics and Nitramines (Explosives)**

Sample Name	Lab Code	Date Collected	Date Received
AIA161101AIASP01	K1613397-001	11/01/2016	11/02/2016
AIA161101AIASP02	K1613397-002	11/01/2016	11/02/2016
AIA161101AIASP03	K1613397-003	11/01/2016	11/02/2016
AIA161101AIASP04	K1613397-004	11/01/2016	11/02/2016
AIA161101AIASP05	K1613397-005	11/01/2016	11/02/2016
AIA161101FHDS	K1613397-006	11/01/2016	11/02/2016
AIA161101IDW	K1613397-007	11/01/2016	11/02/2016
AIA16110198IAMW01	K1613397-008	11/01/2016	11/02/2016
AIA16110198IAMW03	K1613397-009	11/01/2016	11/02/2016
AIA16110198IAMW04	K1613397-010	11/01/2016	11/02/2016
AIA16110198IAMW11	K1613397-011	11/01/2016	11/02/2016
AIA161101FHDSMS	KWG1610140-1	11/01/2016	11/02/2016
AIA161101FHDSMS	KWG1610140-2	11/01/2016	11/02/2016

Analytical Results

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

Service Request: K1613397
Date Collected: 11/01/2016
Date Received: 11/02/2016

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA161101AIASP01
Lab Code: K1613397-001
Extraction Method: EPA 3535A
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	0.10	JP	0.11	0.11	0.038	1	11/06/16	11/18/16	KWG1610140	
RDX	0.15	J	0.21	0.21	0.12	1	11/06/16	11/18/16	KWG1610140	
1,3,5-Trinitrobenzene	ND	U	0.21	0.21	0.15	1	11/06/16	11/18/16	KWG1610140	
1,3-Dinitrobenzene	ND	U	0.11	0.11	0.047	1	11/06/16	11/18/16	KWG1610140	
3,5-Dinitroaniline	ND	U	0.21	0.21	0.086	1	11/06/16	11/18/16	KWG1610140	
TETRYL	ND	U	0.21	0.21	0.11	1	11/06/16	11/18/16	KWG1610140	
Nitrobenzene	ND	U	0.11	0.11	0.028	1	11/06/16	11/18/16	KWG1610140	
4-Amino-2,6-dinitrotoluene	ND	U	0.11	0.11	0.033	1	11/06/16	11/18/16	KWG1610140	
2-Amino-4,6-dinitrotoluene	ND	U	0.11	0.11	0.035	1	11/06/16	11/18/16	KWG1610140	
2,4,6-Trinitrotoluene	ND	U	0.21	0.21	0.094	1	11/06/16	11/18/16	KWG1610140	
2,6-Dinitrotoluene	ND	U	0.21	0.21	0.056	1	11/06/16	11/18/16	KWG1610140	
2,4-Dinitrotoluene	ND	U	0.21	0.21	0.087	1	11/06/16	11/18/16	KWG1610140	
2-Nitrotoluene	ND	U	0.11	0.11	0.033	1	11/06/16	11/18/16	KWG1610140	
4-Nitrotoluene	ND	U	0.11	0.11	0.025	1	11/06/16	11/18/16	KWG1610140	
3-Nitrotoluene	ND	U	0.11	0.11	0.035	1	11/06/16	11/16/16	KWG1610140	
Nitroglycerin	ND	U	1.1	1.1	0.60	1	11/06/16	11/18/16	KWG1610140	
Pentaerythritol Tetranitrate	ND	U	1.1	1.1	0.67	1	11/06/16	11/18/16	KWG1610140	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	70	23-98	11/18/16	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1613397
Date Collected: 11/01/2016
Date Received: 11/02/2016

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA161101AIASP02
Lab Code: K1613397-002
Extraction Method: EPA 3535A
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	0.072	JP	0.10	0.10	0.037	1	11/06/16	11/18/16	KWG1610140	*
RDX	ND	U	0.20	0.20	0.11	1	11/06/16	11/18/16	KWG1610140	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	11/06/16	11/18/16	KWG1610140	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	11/06/16	11/18/16	KWG1610140	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	11/06/16	11/18/16	KWG1610140	
TETRYL	ND	U	0.20	0.20	0.099	1	11/06/16	11/18/16	KWG1610140	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	11/06/16	11/18/16	KWG1610140	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	11/06/16	11/18/16	KWG1610140	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	11/06/16	11/18/16	KWG1610140	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	11/06/16	11/18/16	KWG1610140	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	11/06/16	11/18/16	KWG1610140	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	11/06/16	11/18/16	KWG1610140	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	11/06/16	11/18/16	KWG1610140	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	11/06/16	11/18/16	KWG1610140	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	11/06/16	11/18/16	KWG1610140	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	11/06/16	11/18/16	KWG1610140	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	11/06/16	11/18/16	KWG1610140	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	78	23-98	11/18/16	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1613397
Date Collected: 11/01/2016
Date Received: 11/02/2016

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA161101AIASP03
Lab Code: K1613397-003
Extraction Method: EPA 3535A
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	ND	U	0.10	0.10	0.037	1	11/06/16	11/18/16	KWG1610140	
RDX	0.32		0.20	0.20	0.11	1	11/06/16	11/18/16	KWG1610140	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	11/06/16	11/18/16	KWG1610140	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	11/06/16	11/18/16	KWG1610140	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	11/06/16	11/18/16	KWG1610140	
TETRYL	ND	U	0.20	0.20	0.099	1	11/06/16	11/18/16	KWG1610140	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	11/06/16	11/18/16	KWG1610140	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	11/06/16	11/18/16	KWG1610140	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	11/06/16	11/18/16	KWG1610140	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	11/06/16	11/18/16	KWG1610140	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	11/06/16	11/18/16	KWG1610140	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	11/06/16	11/18/16	KWG1610140	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	11/06/16	11/18/16	KWG1610140	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	11/06/16	11/18/16	KWG1610140	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	11/06/16	11/16/16	KWG1610140	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	11/06/16	11/18/16	KWG1610140	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	11/06/16	11/18/16	KWG1610140	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	59	23-98	11/18/16	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1613397
Date Collected: 11/01/2016
Date Received: 11/02/2016

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA161101AIASP04
Lab Code: K1613397-004
Extraction Method: EPA 3535A
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	ND	U	0.10	0.10	0.037	1	11/06/16	11/18/16	KWG1610140	
RDX	0.24		0.20	0.20	0.11	1	11/06/16	11/18/16	KWG1610140	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	11/06/16	11/18/16	KWG1610140	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	11/06/16	11/18/16	KWG1610140	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	11/06/16	11/18/16	KWG1610140	
TETRYL	ND	U	0.20	0.20	0.099	1	11/06/16	11/18/16	KWG1610140	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	11/06/16	11/18/16	KWG1610140	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	11/06/16	11/18/16	KWG1610140	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	11/06/16	11/18/16	KWG1610140	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	11/06/16	11/18/16	KWG1610140	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	11/06/16	11/18/16	KWG1610140	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	11/06/16	11/18/16	KWG1610140	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	11/06/16	11/18/16	KWG1610140	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	11/06/16	11/18/16	KWG1610140	
3-Nitrotoluene	0.038	JN	0.10	0.10	0.034	1	11/06/16	11/18/16	KWG1610140	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	11/06/16	11/18/16	KWG1610140	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	11/06/16	11/18/16	KWG1610140	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	64	23-98	11/18/16	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1613397
Date Collected: 11/01/2016
Date Received: 11/02/2016

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA161101AIASP05
Lab Code: K1613397-005
Extraction Method: EPA 3535A
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	ND	U	0.10	0.10	0.037	1	11/06/16	11/18/16	KWG1610140	
RDX	ND	U	0.20	0.20	0.11	1	11/06/16	11/18/16	KWG1610140	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	11/06/16	11/18/16	KWG1610140	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	11/06/16	11/18/16	KWG1610140	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	11/06/16	11/18/16	KWG1610140	
TETRYL	ND	U	0.20	0.20	0.099	1	11/06/16	11/18/16	KWG1610140	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	11/06/16	11/18/16	KWG1610140	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	11/06/16	11/18/16	KWG1610140	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	11/06/16	11/18/16	KWG1610140	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	11/06/16	11/18/16	KWG1610140	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	11/06/16	11/18/16	KWG1610140	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	11/06/16	11/18/16	KWG1610140	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	11/06/16	11/18/16	KWG1610140	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	11/06/16	11/18/16	KWG1610140	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	11/06/16	11/17/16	KWG1610140	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	11/06/16	11/18/16	KWG1610140	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	11/06/16	11/18/16	KWG1610140	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	63	23-98	11/18/16	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1613397
Date Collected: 11/01/2016
Date Received: 11/02/2016

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA161101FHDS
Lab Code: K1613397-006
Extraction Method: EPA 3535A
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	ND	U	0.10	0.10	0.037	1	11/06/16	11/18/16	KWG1610140	
RDX	ND	U	0.20	0.20	0.11	1	11/06/16	11/18/16	KWG1610140	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	11/06/16	11/18/16	KWG1610140	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	11/06/16	11/18/16	KWG1610140	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	11/06/16	11/18/16	KWG1610140	
TETRYL	ND	U	0.20	0.20	0.099	1	11/06/16	11/18/16	KWG1610140	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	11/06/16	11/18/16	KWG1610140	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	11/06/16	11/18/16	KWG1610140	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	11/06/16	11/18/16	KWG1610140	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	11/06/16	11/18/16	KWG1610140	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	11/06/16	11/18/16	KWG1610140	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	11/06/16	11/18/16	KWG1610140	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	11/06/16	11/18/16	KWG1610140	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	11/06/16	11/18/16	KWG1610140	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	11/06/16	11/17/16	KWG1610140	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	11/06/16	11/18/16	KWG1610140	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	11/06/16	11/18/16	KWG1610140	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	72	23-98	11/18/16	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1613397
Date Collected: 11/01/2016
Date Received: 11/02/2016

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA161101IDW
Lab Code: K1613397-007
Extraction Method: EPA 3535A
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	ND	U	0.10	0.10	0.037	1	11/06/16	11/18/16	KWG1610140	
RDX	0.27		0.20	0.20	0.11	1	11/06/16	11/18/16	KWG1610140	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	11/06/16	11/18/16	KWG1610140	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	11/06/16	11/18/16	KWG1610140	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	11/06/16	11/18/16	KWG1610140	
TETRYL	ND	U	0.20	0.20	0.099	1	11/06/16	11/18/16	KWG1610140	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	11/06/16	11/18/16	KWG1610140	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	11/06/16	11/18/16	KWG1610140	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	11/06/16	11/18/16	KWG1610140	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	11/06/16	11/18/16	KWG1610140	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	11/06/16	11/18/16	KWG1610140	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	11/06/16	11/18/16	KWG1610140	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	11/06/16	11/18/16	KWG1610140	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	11/06/16	11/18/16	KWG1610140	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	11/06/16	11/17/16	KWG1610140	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	11/06/16	11/18/16	KWG1610140	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	11/06/16	11/18/16	KWG1610140	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	70	23-98	11/18/16	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1613397
Date Collected: 11/01/2016
Date Received: 11/02/2016

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA16110198IAMW01
Lab Code: K1613397-008
Extraction Method: EPA 3535A
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	ND	U	0.10	0.10	0.037	1	11/06/16	11/18/16	KWG1610140	
RDX	ND	U	0.20	0.20	0.11	1	11/06/16	11/18/16	KWG1610140	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	11/06/16	11/18/16	KWG1610140	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	11/06/16	11/18/16	KWG1610140	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	11/06/16	11/18/16	KWG1610140	
TETRYL	ND	U	0.20	0.20	0.099	1	11/06/16	11/18/16	KWG1610140	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	11/06/16	11/18/16	KWG1610140	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	11/06/16	11/18/16	KWG1610140	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	11/06/16	11/18/16	KWG1610140	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	11/06/16	11/18/16	KWG1610140	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	11/06/16	11/18/16	KWG1610140	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	11/06/16	11/18/16	KWG1610140	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	11/06/16	11/18/16	KWG1610140	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	11/06/16	11/18/16	KWG1610140	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	11/06/16	11/17/16	KWG1610140	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	11/06/16	11/18/16	KWG1610140	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	11/06/16	11/18/16	KWG1610140	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	72	23-98	11/18/16	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1613397
Date Collected: 11/01/2016
Date Received: 11/02/2016

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA16110198IAMW03
Lab Code: K1613397-009
Extraction Method: EPA 3535A
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	ND	U	0.10	0.10	0.037	1	11/06/16	11/18/16	KWG1610140	
RDX	0.40		0.20	0.20	0.11	1	11/06/16	11/18/16	KWG1610140	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	11/06/16	11/18/16	KWG1610140	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	11/06/16	11/18/16	KWG1610140	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	11/06/16	11/18/16	KWG1610140	
TETRYL	ND	U	0.20	0.20	0.099	1	11/06/16	11/18/16	KWG1610140	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	11/06/16	11/18/16	KWG1610140	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	11/06/16	11/18/16	KWG1610140	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	11/06/16	11/18/16	KWG1610140	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	11/06/16	11/18/16	KWG1610140	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	11/06/16	11/18/16	KWG1610140	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	11/06/16	11/18/16	KWG1610140	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	11/06/16	11/18/16	KWG1610140	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	11/06/16	11/18/16	KWG1610140	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	11/06/16	11/17/16	KWG1610140	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	11/06/16	11/18/16	KWG1610140	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	11/06/16	11/18/16	KWG1610140	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	70	23-98	11/18/16	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1613397
Date Collected: 11/01/2016
Date Received: 11/02/2016

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA16110198IAMW04
Lab Code: K1613397-010
Extraction Method: EPA 3535A
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	ND	U	0.10	0.10	0.037	1	11/06/16	11/18/16	KWG1610140	
RDX	0.24		0.20	0.20	0.11	1	11/06/16	11/18/16	KWG1610140	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	11/06/16	11/18/16	KWG1610140	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	11/06/16	11/18/16	KWG1610140	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	11/06/16	11/18/16	KWG1610140	
TETRYL	ND	U	0.20	0.20	0.099	1	11/06/16	11/18/16	KWG1610140	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	11/06/16	11/18/16	KWG1610140	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	11/06/16	11/18/16	KWG1610140	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	11/06/16	11/18/16	KWG1610140	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	11/06/16	11/18/16	KWG1610140	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	11/06/16	11/18/16	KWG1610140	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	11/06/16	11/18/16	KWG1610140	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	11/06/16	11/18/16	KWG1610140	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	11/06/16	11/18/16	KWG1610140	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	11/06/16	11/18/16	KWG1610140	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	11/06/16	11/18/16	KWG1610140	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	11/06/16	11/18/16	KWG1610140	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	72	23-98	11/18/16	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1613397
Date Collected: 11/01/2016
Date Received: 11/02/2016

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA16110198IAMW11
Lab Code: K1613397-011
Extraction Method: EPA 3535A
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	ND	U	0.10	0.10	0.037	1	11/06/16	11/18/16	KWG1610140	
RDX	ND	U	0.20	0.20	0.11	1	11/06/16	11/18/16	KWG1610140	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	11/06/16	11/18/16	KWG1610140	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	11/06/16	11/18/16	KWG1610140	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	11/06/16	11/18/16	KWG1610140	
TETRYL	ND	U	0.20	0.20	0.099	1	11/06/16	11/18/16	KWG1610140	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	11/06/16	11/18/16	KWG1610140	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	11/06/16	11/18/16	KWG1610140	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	11/06/16	11/18/16	KWG1610140	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	11/06/16	11/18/16	KWG1610140	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	11/06/16	11/18/16	KWG1610140	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	11/06/16	11/18/16	KWG1610140	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	11/06/16	11/18/16	KWG1610140	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	11/06/16	11/18/16	KWG1610140	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	11/06/16	11/17/16	KWG1610140	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	11/06/16	11/18/16	KWG1610140	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	11/06/16	11/18/16	KWG1610140	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	73	23-98	11/18/16	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1613397
Date Collected: NA
Date Received: NA

Nitroaromatics and Nitramines (Explosives)

Sample Name: Method Blank
Lab Code: KWG1610140-4
Extraction Method: EPA 3535A
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	ND	U	0.10	0.10	0.037	1	11/06/16	11/18/16	KWG1610140	
RDX	ND	U	0.20	0.20	0.11	1	11/06/16	11/18/16	KWG1610140	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	11/06/16	11/18/16	KWG1610140	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	11/06/16	11/18/16	KWG1610140	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	11/06/16	11/18/16	KWG1610140	
TETRYL	ND	U	0.20	0.20	0.099	1	11/06/16	11/18/16	KWG1610140	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	11/06/16	11/18/16	KWG1610140	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	11/06/16	11/18/16	KWG1610140	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	11/06/16	11/18/16	KWG1610140	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	11/06/16	11/18/16	KWG1610140	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	11/06/16	11/18/16	KWG1610140	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	11/06/16	11/18/16	KWG1610140	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	11/06/16	11/18/16	KWG1610140	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	11/06/16	11/18/16	KWG1610140	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	11/06/16	11/16/16	KWG1610140	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	11/06/16	11/18/16	KWG1610140	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	11/06/16	11/18/16	KWG1610140	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	67	23-98	11/18/16	Acceptable

Comments: _____

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

Service Request: K1613397

**Surrogate Recovery Summary
 Nitroaromatics and Nitramines (Explosives)**

Extraction Method: EPA 3535A
Analysis Method: 8330B

Units: Percent
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>
AIA161101AIASP01	K1613397-001	70
AIA161101AIASP02	K1613397-002	78
AIA161101AIASP03	K1613397-003	59
AIA161101AIASP04	K1613397-004	64
AIA161101AIASP05	K1613397-005	63
AIA161101FHDS	K1613397-006	72
AIA161101IDW	K1613397-007	70
AIA16110198IAMW01	K1613397-008	72
AIA16110198IAMW03	K1613397-009	70
AIA16110198IAMW04	K1613397-010	72
AIA16110198IAMW11	K1613397-011	73
Method Blank	KWG1610140-4	67
AIA161101FHDSMS	KWG1610140-1	74
AIA161101FHDSMS	KWG1610140-2	65
Lab Control Sample	KWG1610140-3	66

Surrogate Recovery Control Limits (%)

Sur1 = 1-Chloro-3-nitrobenzene 23-98

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: JBLM AIA/TO 01B
Sample Matrix: Water

Service Request: K1613397
Date Extracted: 11/06/2016
Date Analyzed: 11/18/2016

Matrix Spike/Duplicate Matrix Spike Summary
Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA161101FHDS
Lab Code: K1613397-006
Extraction Method: EPA 3535A
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1610140

Analyte Name	Sample Result	AIA161101FHDSMS KWG1610140-1 Matrix Spike			AIA161101FHDSMS KWG1610140-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
HMX	ND	4.88	7.62	64	4.66	7.48	62	11-147	5	20
RDX	ND	5.79	7.62	76	5.56	7.48	74	10-142	4	20
1,3,5-Trinitrobenzene	ND	5.66	7.62	74	5.18	7.48	69	16-137	9	20
1,3-Dinitrobenzene	ND	5.72	7.62	75	5.23	7.48	70	26-125	9	20
3,5-Dinitroaniline	ND	5.74	7.62	75	5.28	7.48	71	30-133	9	20
TETRYL	ND	5.66	7.62	74	5.36	7.48	72	29-123	6	20
Nitrobenzene	ND	5.48	7.62	72	5.06	7.48	68	10-116	8	20
4-Amino-2,6-dinitrotoluene	ND	5.57	7.62	73	5.15	7.48	69	55-117	8	20
2-Amino-4,6-dinitrotoluene	ND	5.82	7.62	76	5.39	7.48	72	54-116	8	20
2,4,6-Trinitrotoluene	ND	5.54	7.62	73	5.09	7.48	68	47-118	8	20
2,6-Dinitrotoluene	ND	5.56	7.62	73	5.08	7.48	68	40-108	9	20
2,4-Dinitrotoluene	ND	5.67	7.62	74	5.24	7.48	70	50-111	8	20
2-Nitrotoluene	ND	5.07	7.62	67	4.69	7.48	63	12-110	8	20
4-Nitrotoluene	ND	5.19	7.62	68	4.75	7.48	64	16-113	9	20
3-Nitrotoluene	ND	5.09	7.62	67	4.66	7.48	62	13-109	9	20
Nitroglycerin	ND	6.45	7.62	85	6.48	7.48	87	15-136	0	20
Pentaerythritol Tetranitrate	ND	5.91	7.62	78	5.84	7.48	78	66-103	1	20

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 AIA/TO 01B
Sample Matrix: Water

Service Request: K1613397
Date Extracted: 11/06/2016
Date Analyzed: 11/18/2016

Lab Control Spike Summary
Nitroaromatics and Nitramines (Explosives)

Extraction Method: EPA 3535A
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1610140

Lab Control Sample
 KWG1610140-3
Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
HMX	4.67	8.00	58	11-147
RDX	5.49	8.00	69	10-142
1,3,5-Trinitrobenzene	5.38	8.00	67	16-137
1,3-Dinitrobenzene	5.48	8.00	68	26-125
3,5-Dinitroaniline	5.40	8.00	67	30-133
TETRYL	5.22	8.00	65	29-123
Nitrobenzene	5.44	8.00	68	10-116
4-Amino-2,6-dinitrotoluene	5.24	8.00	65	55-117
2-Amino-4,6-dinitrotoluene	5.49	8.00	69	54-116
2,4,6-Trinitrotoluene	5.14	8.00	64	47-118
2,6-Dinitrotoluene	5.35	8.00	67	40-108
2,4-Dinitrotoluene	5.43	8.00	68	50-111
2-Nitrotoluene	5.03	8.00	63	12-110
4-Nitrotoluene	5.08	8.00	63	16-113
3-Nitrotoluene	4.93	8.00	62	13-109
Nitroglycerin	6.14	8.00	77	15-136
Pentaerythritol Tetranitrate	5.07	8.00	63 *	66-103

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 AIA/TO 01B
Sample Matrix: Water

Service Request: K1613397
Date Extracted: 11/06/2016
Date Analyzed: 11/16/2016
Time Analyzed: 13:46

Method Blank Summary
Nitroaromatics and Nitramines (Explosives)

Sample Name: Method Blank
Lab Code: KWG1610140-4
Extraction Method: EPA 3535A
Analysis Method: 8330B

Instrument ID: LC08
File ID: J:\LC08\DATA\111516XLC-254\1115000120.D
Level: Low
Extraction Lot: KWG1610140

This Method Blank applies to the following analyses:

QA/QC Report

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

Service Request: K1613397
Date Extracted: 11/06/2016
Date Analyzed: 11/18/2016
Time Analyzed: 06:41

Method Blank Summary
Nitroaromatics and Nitramines (Explosives)

Sample Name: Method Blank **Instrument ID:** LC10
Lab Code: KWG1610140-4 **File ID:** J:\LC10\DATA\111716-210\1117000135.D
Extraction Method: EPA 3535A **Level:** Low
Analysis Method: 8330B **Extraction Lot:** KWG1610140

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1610140-3	J:\LC10\DATA\111716-210\1117000136.D	11/18/16	07:17
AIA161101AIASP01	K1613397-001	J:\LC10\DATA\111716-210\1117000137.D	11/18/16	07:54
AIA161101AIASP02	K1613397-002	J:\LC10\DATA\111716-210\1117000138.D	11/18/16	08:30
AIA161101AIASP03	K1613397-003	J:\LC10\DATA\111716-210\1117000139.D	11/18/16	09:06
AIA161101AIASP04	K1613397-004	J:\LC10\DATA\111716-210\1117000140.D	11/18/16	09:42
AIA161101AIASP05	K1613397-005	J:\LC10\DATA\111716-210\1117000141.D	11/18/16	10:19
AIA161101FHDS	K1613397-006	J:\LC10\DATA\111716-210\1117000142.D	11/18/16	10:55
AIA161101FHDSMS	KWG1610140-1	J:\LC10\DATA\111716-210\1117000143.D	11/18/16	11:31
AIA161101FHDSMDS	KWG1610140-2	J:\LC10\DATA\111716-210\1117000144.D	11/18/16	12:07
AIA161101IDW	K1613397-007	J:\LC10\DATA\111716-210\1117000147.D	11/18/16	13:56
AIA16110198IAMW01	K1613397-008	J:\LC10\DATA\111716-210\1117000148.D	11/18/16	14:32
AIA16110198IAMW03	K1613397-009	J:\LC10\DATA\111716-210\1117000149.D	11/18/16	15:08
AIA16110198IAMW04	K1613397-010	J:\LC10\DATA\111716-210\1117000150.D	11/18/16	15:45
AIA16110198IAMW11	K1613397-011	J:\LC10\DATA\111716-210\1117000151.D	11/18/16	16:21

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

Service Request: K1613397
Date Extracted: 11/06/2016
Date Analyzed: 11/18/2016
Time Analyzed: 06:41

Method Blank Summary
Nitroaromatics and Nitramines (Explosives)

Sample Name: Method Blank **Instrument ID:** LC10
Lab Code: KWG1610140-4 **File ID:** J:\LC10\DATA\111716-254\1117000135.D
Extraction Method: EPA 3535A **Level:** Low
Analysis Method: 8330B **Extraction Lot:** KWG1610140

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
AIA161101AIASP01	K1613397-001	J:\LC08\DATA\111516XLC-254\1115000122.D	11/16/16	16:27
AIA161101AIASP02	K1613397-002	J:\LC08\DATA\111516XLC-254\1115000123.D	11/16/16	17:47
AIA161101AIASP03	K1613397-003	J:\LC08\DATA\111516XLC-254\1115000124.D	11/16/16	19:08
AIA161101AIASP04	K1613397-004	J:\LC08\DATA\111516XLC-254\1115000125.D	11/16/16	20:28
AIA161101AIASP05	K1613397-005	J:\LC08\DATA\111516XLC-254\1115000128.D	11/17/16	00:29
AIA161101FHDS	K1613397-006	J:\LC08\DATA\111516XLC-254\1115000129.D	11/17/16	01:49
AIA161101IDW	K1613397-007	J:\LC08\DATA\111516XLC-254\1115000132.D	11/17/16	05:50
AIA16110198IAMW01	K1613397-008	J:\LC08\DATA\111516XLC-254\1115000133.D	11/17/16	07:11
AIA16110198IAMW03	K1613397-009	J:\LC08\DATA\111516XLC-254\1115000134.D	11/17/16	08:31
AIA16110198IAMW04	K1613397-010	J:\LC08\DATA\111516XLC-254\1115000135.D	11/17/16	09:51
AIA16110198IAMW11	K1613397-011	J:\LC08\DATA\111516XLC-254\1115000136.D	11/17/16	11:12
Lab Control Sample	KWG1610140-3	J:\LC10\DATA\111716-254\1117000136.D	11/18/16	07:17
AIA161101AIASP01	K1613397-001	J:\LC10\DATA\111716-254\1117000137.D	11/18/16	07:54
AIA161101AIASP02	K1613397-002	J:\LC10\DATA\111716-254\1117000138.D	11/18/16	08:30
AIA161101AIASP03	K1613397-003	J:\LC10\DATA\111716-254\1117000139.D	11/18/16	09:06
AIA161101AIASP04	K1613397-004	J:\LC10\DATA\111716-254\1117000140.D	11/18/16	09:42
AIA161101AIASP05	K1613397-005	J:\LC10\DATA\111716-254\1117000141.D	11/18/16	10:19
AIA161101FHDS	K1613397-006	J:\LC10\DATA\111716-254\1117000142.D	11/18/16	10:55
AIA161101FHDSMS	KWG1610140-1	J:\LC10\DATA\111716-254\1117000143.D	11/18/16	11:31
AIA161101FHDSMS	KWG1610140-2	J:\LC10\DATA\111716-254\1117000144.D	11/18/16	12:07
AIA161101IDW	K1613397-007	J:\LC10\DATA\111716-254\1117000147.D	11/18/16	13:56
AIA16110198IAMW01	K1613397-008	J:\LC10\DATA\111716-254\1117000148.D	11/18/16	14:32
AIA16110198IAMW03	K1613397-009	J:\LC10\DATA\111716-254\1117000149.D	11/18/16	15:08
AIA16110198IAMW04	K1613397-010	J:\LC10\DATA\111716-254\1117000150.D	11/18/16	15:45
AIA16110198IAMW11	K1613397-011	J:\LC10\DATA\111716-254\1117000151.D	11/18/16	16:21

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

Service Request: K1613397
Date Extracted: 11/06/2016
Date Analyzed: 11/18/2016
Time Analyzed: 07:17

Lab Control Sample Summary
Nitroaromatics and Nitramines (Explosives)

Sample Name: Lab Control Sample **Instrument ID:** LC10
Lab Code: KWG1610140-3 **File ID:** J:\LC10\DATA\111716-210\1117000136.D
Extraction Method: EPA 3535A **Level:** Low
Analysis Method: 8330B **Extraction Lot:** KWG1610140

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG1610140-4	J:\LC08\DATA\111516XLC-254\1115000120.D	11/16/16	13:46
AIA161101AIASP01	K1613397-001	J:\LC08\DATA\111516XLC-254\1115000122.D	11/16/16	16:27
AIA161101AIASP02	K1613397-002	J:\LC08\DATA\111516XLC-254\1115000123.D	11/16/16	17:47
AIA161101AIASP03	K1613397-003	J:\LC08\DATA\111516XLC-254\1115000124.D	11/16/16	19:08
AIA161101AIASP04	K1613397-004	J:\LC08\DATA\111516XLC-254\1115000125.D	11/16/16	20:28
AIA161101AIASP05	K1613397-005	J:\LC08\DATA\111516XLC-254\1115000128.D	11/17/16	00:29
AIA161101FHDS	K1613397-006	J:\LC08\DATA\111516XLC-254\1115000129.D	11/17/16	01:49
AIA161101IDW	K1613397-007	J:\LC08\DATA\111516XLC-254\1115000132.D	11/17/16	05:50
AIA16110198IAMW01	K1613397-008	J:\LC08\DATA\111516XLC-254\1115000133.D	11/17/16	07:11
AIA16110198IAMW03	K1613397-009	J:\LC08\DATA\111516XLC-254\1115000134.D	11/17/16	08:31
AIA16110198IAMW04	K1613397-010	J:\LC08\DATA\111516XLC-254\1115000135.D	11/17/16	09:51
AIA16110198IAMW11	K1613397-011	J:\LC08\DATA\111516XLC-254\1115000136.D	11/17/16	11:12
Method Blank	KWG1610140-4	J:\LC10\DATA\111716-210\1117000135.D	11/18/16	06:41
AIA161101AIASP01	K1613397-001	J:\LC10\DATA\111716-210\1117000137.D	11/18/16	07:54
AIA161101AIASP02	K1613397-002	J:\LC10\DATA\111716-210\1117000138.D	11/18/16	08:30
AIA161101AIASP03	K1613397-003	J:\LC10\DATA\111716-210\1117000139.D	11/18/16	09:06
AIA161101AIASP04	K1613397-004	J:\LC10\DATA\111716-210\1117000140.D	11/18/16	09:42
AIA161101AIASP05	K1613397-005	J:\LC10\DATA\111716-210\1117000141.D	11/18/16	10:19
AIA161101FHDS	K1613397-006	J:\LC10\DATA\111716-210\1117000142.D	11/18/16	10:55
AIA161101FHDSMS	KWG1610140-1	J:\LC10\DATA\111716-210\1117000143.D	11/18/16	11:31
AIA161101FHDSMS	KWG1610140-2	J:\LC10\DATA\111716-210\1117000144.D	11/18/16	12:07
AIA161101IDW	K1613397-007	J:\LC10\DATA\111716-210\1117000147.D	11/18/16	13:56
AIA16110198IAMW01	K1613397-008	J:\LC10\DATA\111716-210\1117000148.D	11/18/16	14:32
AIA16110198IAMW03	K1613397-009	J:\LC10\DATA\111716-210\1117000149.D	11/18/16	15:08
AIA16110198IAMW04	K1613397-010	J:\LC10\DATA\111716-210\1117000150.D	11/18/16	15:45
AIA16110198IAMW11	K1613397-011	J:\LC10\DATA\111716-210\1117000151.D	11/18/16	16:21

QA/QC Report

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

Service Request: K1613397
Date Extracted: 11/06/2016
Date Analyzed: 11/18/2016
Time Analyzed: 07:17

Lab Control Sample Summary
Nitroaromatics and Nitramines (Explosives)

Sample Name: Lab Control Sample **Instrument ID:** LC10
Lab Code: KWG1610140-3 **File ID:** J:\LC10\DATA\111716-254\1117000136.D
Extraction Method: EPA 3535A **Level:** Low
Analysis Method: 8330B **Extraction Lot:** KWG1610140

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG1610140-4	J:\LC08\DATA\111516XLC-254\1115000120.D	11/16/16	13:46
AIA161101AIASP01	K1613397-001	J:\LC08\DATA\111516XLC-254\1115000122.D	11/16/16	16:27
AIA161101AIASP02	K1613397-002	J:\LC08\DATA\111516XLC-254\1115000123.D	11/16/16	17:47
AIA161101AIASP03	K1613397-003	J:\LC08\DATA\111516XLC-254\1115000124.D	11/16/16	19:08
AIA161101AIASP04	K1613397-004	J:\LC08\DATA\111516XLC-254\1115000125.D	11/16/16	20:28
AIA161101AIASP05	K1613397-005	J:\LC08\DATA\111516XLC-254\1115000128.D	11/17/16	00:29
AIA161101FHDS	K1613397-006	J:\LC08\DATA\111516XLC-254\1115000129.D	11/17/16	01:49
AIA161101IDW	K1613397-007	J:\LC08\DATA\111516XLC-254\1115000132.D	11/17/16	05:50
AIA16110198IAMW01	K1613397-008	J:\LC08\DATA\111516XLC-254\1115000133.D	11/17/16	07:11
AIA16110198IAMW03	K1613397-009	J:\LC08\DATA\111516XLC-254\1115000134.D	11/17/16	08:31
AIA16110198IAMW04	K1613397-010	J:\LC08\DATA\111516XLC-254\1115000135.D	11/17/16	09:51
AIA16110198IAMW11	K1613397-011	J:\LC08\DATA\111516XLC-254\1115000136.D	11/17/16	11:12
Method Blank	KWG1610140-4	J:\LC10\DATA\111716-254\1117000135.D	11/18/16	06:41
Method Blank	KWG1610140-4	J:\LC10\DATA\111716-210\1117000135.D	11/18/16	06:41
AIA161101AIASP01	K1613397-001	J:\LC10\DATA\111716-254\1117000137.D	11/18/16	07:54
AIA161101AIASP01	K1613397-001	J:\LC10\DATA\111716-210\1117000137.D	11/18/16	07:54
AIA161101AIASP02	K1613397-002	J:\LC10\DATA\111716-254\1117000138.D	11/18/16	08:30
AIA161101AIASP02	K1613397-002	J:\LC10\DATA\111716-210\1117000138.D	11/18/16	08:30
AIA161101AIASP03	K1613397-003	J:\LC10\DATA\111716-254\1117000139.D	11/18/16	09:06
AIA161101AIASP03	K1613397-003	J:\LC10\DATA\111716-210\1117000139.D	11/18/16	09:06
AIA161101AIASP04	K1613397-004	J:\LC10\DATA\111716-210\1117000140.D	11/18/16	09:42
AIA161101AIASP04	K1613397-004	J:\LC10\DATA\111716-254\1117000140.D	11/18/16	09:42
AIA161101AIASP05	K1613397-005	J:\LC10\DATA\111716-254\1117000141.D	11/18/16	10:19
AIA161101AIASP05	K1613397-005	J:\LC10\DATA\111716-210\1117000141.D	11/18/16	10:19
AIA161101FHDS	K1613397-006	J:\LC10\DATA\111716-254\1117000142.D	11/18/16	10:55
AIA161101FHDS	K1613397-006	J:\LC10\DATA\111716-210\1117000142.D	11/18/16	10:55
AIA161101FHDSMS	KWG1610140-1	J:\LC10\DATA\111716-254\1117000143.D	11/18/16	11:31
AIA161101FHDSMS	KWG1610140-1	J:\LC10\DATA\111716-210\1117000143.D	11/18/16	11:31
AIA161101FHDSMS	KWG1610140-2	J:\LC10\DATA\111716-210\1117000144.D	11/18/16	12:07
AIA161101FHDSMS	KWG1610140-2	J:\LC10\DATA\111716-254\1117000144.D	11/18/16	12:07
AIA161101IDW	K1613397-007	J:\LC10\DATA\111716-254\1117000147.D	11/18/16	13:56
AIA161101IDW	K1613397-007	J:\LC10\DATA\111716-210\1117000147.D	11/18/16	13:56
AIA16110198IAMW01	K1613397-008	J:\LC10\DATA\111716-254\1117000148.D	11/18/16	14:32
AIA16110198IAMW01	K1613397-008	J:\LC10\DATA\111716-210\1117000148.D	11/18/16	14:32
AIA16110198IAMW03	K1613397-009	J:\LC10\DATA\111716-254\1117000149.D	11/18/16	15:08
AIA16110198IAMW03	K1613397-009	J:\LC10\DATA\111716-210\1117000149.D	11/18/16	15:08
AIA16110198IAMW04	K1613397-010	J:\LC10\DATA\111716-254\1117000150.D	11/18/16	15:45

QA/QC Report

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

Service Request: K1613397
Date Extracted: 11/06/2016
Date Analyzed: 11/18/2016
Time Analyzed: 07:17

Lab Control Sample Summary
Nitroaromatics and Nitramines (Explosives)

Sample Name: Lab Control Sample
Lab Code: KWG1610140-3
Extraction Method: EPA 3535A
Analysis Method: 8330B

Instrument ID: LC10
File ID: J:\LC10\DATA\111716-254\1117000136.D
Level: Low
Extraction Lot: KWG1610140

This Lab Control Sample applies to the following analyses:

AIA16110198IAMW04	K1613397-010	J:\LC10\DATA\111716-210\1117000150.D	11/18/16	15:45
AIA16110198IAMW11	K1613397-011	J:\LC10\DATA\111716-210\1117000151.D	11/18/16	16:21
AIA16110198IAMW11	K1613397-011	J:\LC10\DATA\111716-254\1117000151.D	11/18/16	16:21

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397
Calibration Date: 06/08/2016

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL14752
Instrument ID: LC08

Column: Ultra Aromax 5u

Level ID	File ID	Level ID	File ID
A	J:\LC08\Data\060716XLC\254\0607000105.D	G	J:\LC08\Data\060716XLC\254\0607000111.D
B	J:\LC08\Data\060716XLC\254\0607000106.D	H	J:\LC08\Data\060716XLC\254\0607000112.D
C	J:\LC08\Data\060716XLC\254\0607000107.D	I	J:\LC08\Data\060716XLC\254\0607000113.D
D	J:\LC08\Data\060716XLC\254\0607000108.D	J	J:\LC08\Data\060716XLC\254\0607000114.D
E	J:\LC08\Data\060716XLC\254\0607000109.D		
F	J:\LC08\Data\060716XLC\254\0607000110.D		

Analyte Name	Level ID			Level ID			Level ID			Level ID			Level ID		
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF
HMX	A	50	18500	B	100	16600	C	200	16800	D	500	16300	E	1000	17300
	F	2000	17500	G	5000	15800	H	10000	17200	I	20000	17500			
RDX	A	50	19600	B	100	22000	C	200	20000	D	500	20000	E	1000	20100
	F	2000	19900	G	5000	18000	H	10000	19600	I	20000	20000			
1,3,5-Trinitrobenzene							C	200	69100	D	500	48500	E	1000	50300
	F	2000	45800	G	5000	41100	H	10000	44900	I	20000	46100			
1,3-Dinitrobenzene	A	50	56300	B	100	58500	C	200	61600	D	500	56700	E	1000	58500
	F	2000	60100	G	5000	53700	H	10000	60100	I	20000	61400	J	20	50500
3,5-Dinitroaniline										D	500	67200	E	1000	55600
	F	2000	52300	G	5000	45300	H	10000	48500	I	20000	49000			
TETRYL							C	200	33000	D	500	28200	E	1000	35800
	F	2000	36000	G	5000	31900	H	10000	34600	I	20000	35400			
Nitrobenzene	A	50	42600	B	100	40800	C	200	40000	D	500	39000	E	1000	39300
	F	2000	38300	G	5000	36300	H	10000	38200	I	20000	38800			
4-Amino-2,6-dinitrotoluene	A	50	40100	B	100	28900	C	200	30100	D	500	33800	E	1000	33800
	F	2000	33700	G	5000	30100	H	10000	33000	I	20000	33600			
2-Amino-4,6-dinitrotoluene	A	50	50700	B	100	48700	C	200	41800	D	500	44600	E	1000	43800
	F	2000	42900	G	5000	39200	H	10000	43000	I	20000	43900			
2,4,6-Trinitrotoluene							C	200	43600	D	500	40500	E	1000	46200
	F	2000	42400	G	5000	37700	H	10000	42000	I	20000	42700			
2,6-Dinitrotoluene				B	100	38100	C	200	39900	D	500	29100	E	1000	29300
	F	2000	28800	G	5000	26800	H	10000	29300	I	20000	29800			
2,4-Dinitrotoluene				B	100	71000	C	200	66900	D	500	55100	E	1000	55700
	F	2000	54200	G	5000	50300	H	10000	54700	I	20000	55700			
2-Nitrotoluene	A	50	25800	B	100	26700	C	200	28000	D	500	25400	E	1000	25600
	F	2000	24800	G	5000	23100	H	10000	24500	I	20000	24900			
4-Nitrotoluene				B	100	23800	C	200	26400	D	500	22400	E	1000	22300
	F	2000	22700	G	5000	21500	H	10000	22800	I	20000	23300			

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397
Calibration Date: 06/08/2016

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL14752
Instrument ID: LC08

Column: Ultra Aromax 5u

Analyte Name	Level			Level			Level			Level					
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF			
3-Nitrotoluene	A	50	34800	B	100	24600	C	200	26900	D	500	24700	E	1000	24900
	F	2000	26700	G	5000	23400	H	10000	26900	I	20000	27300	J	20	28000
1-Chloro-3-nitrobenzene				B	100	32500	C	200	28400	D	500	27700	E	1000	28400
	F	2000	26000	G	5000	24400	H	10000	27100	I	20000	27400			

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

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397
Calibration Date: 06/08/2016

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL14752
Instrument ID: LC08

Column: Ultra Aromax 5u

Analyte Name	Compound Type	Calibration Evaluation				
		Fit Type	Eval.	Eval. Result	Q	Control Criteria
HMX	MS	AverageRF	% RSD	4.7		≤ 15
RDX	MS	AverageRF	% RSD	5.1		≤ 15
1,3,5-Trinitrobenzene	MS	Quadratic	COD	1.000		≥ 0.99
1,3-Dinitrobenzene	MS	AverageRF	% RSD	6.1		≤ 15
3,5-Dinitroaniline	MS	Quadratic	COD	1.000		≥ 0.99
TETRYL	MS	AverageRF	% RSD	8.4		≤ 15
Nitrobenzene	MS	AverageRF	% RSD	4.5		≤ 15
4-Amino-2,6-dinitrotoluene	MS	AverageRF	% RSD	9.9		≤ 15
2-Amino-4,6-dinitrotoluene	MS	AverageRF	% RSD	7.8		≤ 15
2,4,6-Trinitrotoluene	MS	AverageRF	% RSD	6.3		≤ 15
2,6-Dinitrotoluene	MS	Quadratic	COD	1.000		≥ 0.99
2,4-Dinitrotoluene	MS	AverageRF	% RSD	12.3		≤ 15
2-Nitrotoluene	MS	AverageRF	% RSD	5.5		≤ 15
4-Nitrotoluene	MS	AverageRF	% RSD	6.5		≤ 15
3-Nitrotoluene	MS	AverageRF	% RSD	11.7		≤ 15
1-Chloro-3-nitrobenzene	SURR	AverageRF	% RSD	8.4		≤ 15

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397
Calibration Date: 06/08/2016
Date Analyzed: 06/08/2016

Second Source Calibration Verification
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration ID: CAL14752
Units: ug/L

File ID: J:\LC08\Data\060716XLC\254\0607000120.D

Column ID: Ultra Aromax 5u

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	980	17100	16700	-2	NA	± 20 %	AverageRF
RDX	1000	940	19900	18700	-6	NA	± 20 %	AverageRF
1,3,5-Trinitrobenzene	1000	1000	49400	46900	NA	0	± 20 %	Quadratic
1,3-Dinitrobenzene	1000	920	57700	53200	-8	NA	± 20 %	AverageRF
3,5-Dinitroaniline	1000	970	53000	54800	NA	-3	± 20 %	Quadratic
TETRYL	1000	1000	33600	33800	1	NA	± 20 %	AverageRF
Nitrobenzene	1000	920	39300	36300	-8	NA	± 20 %	AverageRF
4-Amino-2,6-dinitrotoluene	1000	950	33000	31400	-5	NA	± 20 %	AverageRF
2-Amino-4,6-dinitrotoluene	1000	920	44300	40600	-8	NA	± 20 %	AverageRF
2,4,6-Trinitrotoluene	1000	1000	42200	43400	3	NA	± 20 %	AverageRF
2,6-Dinitrotoluene	1000	970	31400	27900	NA	-3	± 20 %	Quadratic
2,4-Dinitrotoluene	1000	910	58000	52800	-9	NA	± 20 %	AverageRF
2-Nitrotoluene	1000	920	25400	23400	-8	NA	± 20 %	AverageRF
4-Nitrotoluene	1000	910	23100	21000	-9	NA	± 20 %	AverageRF
3-Nitrotoluene	1000	910	26800	24500	-9	NA	± 20 %	AverageRF

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

† SPCC Compound

‡ CCC Compound

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397
Calibration Date: 07/13/2016

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL14816
Instrument ID: LC10

Column: Synergi Hydro R

Level ID	File ID	Level ID	File ID
A	J:\LC10\Data\071316XL\254\0713000103.D	G	J:\LC10\Data\071316XL\254\0713000109.D
B	J:\LC10\Data\071316XL\254\0713000104.D	H	J:\LC10\Data\071316XL\254\0713000110.D
C	J:\LC10\Data\071316XL\254\0713000105.D	I	J:\LC10\Data\071316XL\254\0713000111.D
D	J:\LC10\Data\071316XL\254\0713000106.D	J	J:\LC10\Data\071316XL\254\0713000112.D
E	J:\LC10\Data\071316XL\254\0713000107.D		
F	J:\LC10\Data\071316XL\254\0713000108.D		

Analyte Name	Level ID			Level ID			Level ID			Level ID			Level ID		
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF
HMX	A	20	12000	B	50	11900	C	100	13200	D	200	13800	E	500	13200
	F	1000	14400	G	2000	14800	H	5000	15600	I	10000	17100	J	20000	16000
RDX	A	20	23200	B	50	20100	C	100	20100	D	200	20200	E	500	19900
	F	1000	19700	G	2000	20100	H	5000	19900	I	10000	20100	J	20000	20100
1,3,5-Trinitrobenzene	A	20	44100	B	50	44100	C	100	45400	D	200	45800	E	500	44800
	F	1000	44600	G	2000	45200	H	5000	44800	I	10000	45100	J	20000	45600
1,3-Dinitrobenzene	A	20	58000	B	50	58200	C	100	60500	D	200	60600	E	500	59600
	F	1000	59000	G	2000	60300	H	5000	59700	I	10000	59900	J	20000	61400
3,5-Dinitroaniline	A	20	43500	B	50	48200	C	100	49800	D	200	49500	E	500	48700
	F	1000	48200	G	2000	49200	H	5000	48400	I	10000	48700	J	20000	54500
TETRYL	A	20	29000	B	50	33200	C	100	34700	D	200	34200	E	500	33900
	F	1000	33500	G	2000	34300	H	5000	33700	I	10000	33700	J	20000	30200
Nitrobenzene	A	20	34500	B	50	36200	C	100	38300	D	200	38100	E	500	37600
	F	1000	37100	G	2000	38600	H	5000	38000	I	10000	38300	J	20000	35200
4-Amino-2,6-dinitrotoluene	A	20	27300	B	50	30900	C	100	30600	D	200	31200	E	500	30100
	F	1000	29900	G	2000	30500	H	5000	30100	I	10000	30200	J	20000	37800
2-Amino-4,6-dinitrotoluene	A	20	40000	B	50	42200	C	100	42100	D	200	43100	E	500	41900
	F	1000	41500	G	2000	42300	H	5000	41900	I	10000	42300	J	20000	34500
2,4,6-Trinitrotoluene	A	20	41900	B	50	42200	C	100	42400	D	200	42800	E	500	42000
	F	1000	41800	G	2000	42400	H	5000	42000	I	10000	42400	J	20000	42100
2,6-Dinitrotoluene				B	50	24700	C	100	26100	D	200	25900	E	500	25300
	F	1000	24600	G	2000	25500	H	5000	24700	I	10000	22900			
2,4-Dinitrotoluene	A	20	58700	B	50	56900	C	100	58400	D	200	60300	E	500	59000
	F	1000	57900	G	2000	59600	H	5000	59400	I	10000	61800	J	20000	40800
2-Nitrotoluene	A	20	16700	B	50	17000	C	100	17600	D	200	18100	E	500	18000
	F	1000	18000	G	2000	18400	H	5000	18200	I	10000	18100	J	20000	18500
4-Nitrotoluene	A	20	13500	B	50	16700	C	100	15700	D	200	15600	E	500	15900
	F	1000	15900	G	2000	15800	H	5000	15700	I	10000	15700	J	20000	15900

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397
Calibration Date: 07/13/2016

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL14816
Instrument ID: LC10

Column: Synergi Hydro R

Analyte Name	Level			Level			Level			Level					
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF			
3-Nitrotoluene	A	20	19800	B	50	18500	C	100	20300	D	200	20600	E	500	19900
	F	1000	20000	G	2000	20200	H	5000	20100	I	10000	20100	J	20000	20500
1-Chloro-3-nitrobenzene	A	20	19100	B	50	18400	C	100	19700	D	200	19700	E	500	19500
	F	1000	19400	G	2000	19600	H	5000	19400	I	10000	19600	J	20000	19800

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

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397
Calibration Date: 07/13/2016

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL14816
Instrument ID: LC10

Column: Synergi Hydro R

Analyte Name	Compound Type	Calibration Evaluation				
		Fit Type	Eval.	Eval. Result	Q	Control Criteria
HMX	MS	AverageRF	% RSD	12.1		≤ 15
RDX	MS	AverageRF	% RSD	5.0		≤ 15
1,3,5-Trinitrobenzene	MS	AverageRF	% RSD	1.3		≤ 15
1,3-Dinitrobenzene	MS	AverageRF	% RSD	1.8		≤ 15
3,5-Dinitroaniline	MS	AverageRF	% RSD	5.4		≤ 15
TETRYL	MS	AverageRF	% RSD	5.7		≤ 15
Nitrobenzene	MS	AverageRF	% RSD	3.8		≤ 15
4-Amino-2,6-dinitrotoluene	MS	AverageRF	% RSD	8.6		≤ 15
2-Amino-4,6-dinitrotoluene	MS	AverageRF	% RSD	6.0		≤ 15
2,4,6-Trinitrotoluene	MS	AverageRF	% RSD	0.7		≤ 15
2,6-Dinitrotoluene	MS	Quadratic	COD	1.000		≥ 0.99
2,4-Dinitrotoluene	MS	AverageRF	% RSD	10.4		≤ 15
2-Nitrotoluene	MS	AverageRF	% RSD	3.3		≤ 15
4-Nitrotoluene	MS	AverageRF	% RSD	5.2		≤ 15
3-Nitrotoluene	MS	AverageRF	% RSD	2.9		≤ 15
1-Chloro-3-nitrobenzene	SURR	AverageRF	% RSD	2.1		≤ 15

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397
Calibration Date: 07/13/2016
Date Analyzed: 07/13/2016

**Second Source Calibration Verification
 Nitroaromatics and Nitramines (Explosives)**

Calibration Type: External Standard
Analysis Method: 8330B

Calibration ID: CAL14816
Units: ug/L

File ID: J:\LC10\Data\071316XL\254\0713000114.D

Column ID: Synergi Hydro R

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	800	14200	11400	-20	NA	± 20 %	AverageRF
RDX	1000	850	20300	17300	-15	NA	± 20 %	AverageRF
1,3,5-Trinitrobenzene	1000	880	44900	39500	-12	NA	± 20 %	AverageRF
1,3-Dinitrobenzene	1000	880	59700	52700	-12	NA	± 20 %	AverageRF
3,5-Dinitroaniline	1000	880	48900	42800	-12	NA	± 20 %	AverageRF
TETRYL	1000	880	33100	29000	-12	NA	± 20 %	AverageRF
Nitrobenzene	1000	910	37200	33800	-9	NA	± 20 %	AverageRF
4-Amino-2,6-dinitrotoluene	1000	840	30900	26000	-16	NA	± 20 %	AverageRF
2-Amino-4,6-dinitrotoluene	1000	910	41200	37400	-9	NA	± 20 %	AverageRF
2,4,6-Trinitrotoluene	1000	870	42200	36700	-13	NA	± 20 %	AverageRF
2,6-Dinitrotoluene	1000	880	25000	22600	NA	-12	± 20 %	Quadratic
2,4-Dinitrotoluene	1000	920	57300	52800	-8	NA	± 20 %	AverageRF
2-Nitrotoluene	1000	900	17900	16100	-10	NA	± 20 %	AverageRF
4-Nitrotoluene	1000	890	15600	13900	-11	NA	± 20 %	AverageRF
3-Nitrotoluene	1000	900	20000	17900	-10	NA	± 20 %	AverageRF

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

† SPCC Compound

‡ CCC Compound

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397
Calibration Date: 07/13/2016

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL14817
Instrument ID: LC10

Column: Synergi Hydro 4

Level ID	File ID	Level ID	File ID
A	J:\LC10\Data\071316XL\210\0713000103.D	G	J:\LC10\Data\071316XL\210\0713000109.D
B	J:\LC10\Data\071316XL\210\0713000104.D	H	J:\LC10\Data\071316XL\210\0713000110.D
C	J:\LC10\Data\071316XL\210\0713000105.D	I	J:\LC10\Data\071316XL\210\0713000111.D
D	J:\LC10\Data\071316XL\210\0713000106.D	J	J:\LC10\Data\071316XL\210\0713000112.D
E	J:\LC10\Data\071316XL\210\0713000107.D		
F	J:\LC10\Data\071316XL\210\0713000108.D		

Analyte Name	Level ID			Level ID			Level ID			Level ID					
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF			
Nitroglycerin				B	50	18200	C	100	22400	D	200	20600	E	500	19300
	F	1000	19500	G	2000	19200	H	5000	18600	I	10000	16500			
Pentaerythritol Tetranitrate				B	50	14900	C	100	16500	D	200	19100	E	500	17000
	F	1000	16400	G	2000	16800	H	5000	17400	I	10000	16700			
1-Chloro-3-nitrobenzene	A	20	58200	B	50	43600	C	100	47800	D	200	54700	E	500	50900
	F	1000	50000	G	2000	52300	H	5000	51500	I	10000	52100	J	20000	52400

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

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397
Calibration Date: 07/13/2016

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL14817
Instrument ID: LC10

Column: Synergi Hydro 4

Analyte Name	Compound Type	Calibration Evaluation				
		Fit Type	Eval.	Eval. Result	Q	Control Criteria
Nitroglycerin	MS	AverageRF	% RSD	9.0		≤ 15
Pentaerythritol Tetranitrate	MS	AverageRF	% RSD	6.9		≤ 15
1-Chloro-3-nitrobenzene	SURR	AverageRF	% RSD	7.6		≤ 15

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397
Calibration Date: 07/13/2016
Date Analyzed: 07/13/2016

Second Source Calibration Verification
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration ID: CAL14817
Units: ug/L

File ID: J:\LC10\Data\071316XL\210\0713000114.D

Column ID: Synergi Hydro 4

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Nitroglycerin	1000	890	19300	17200	-11	NA	± 20 %	AverageRF
Pentaerythritol Tetranitrate	1000	930	16800	15600	-7	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: JBLM AIA/TO 01B

Service Request: K1613397
Date Analyzed: 11/16/2016

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 06/08/2016
Calibration ID: CAL14752
Analysis Lot: KWG1610847
Units: ug/L
Column ID: Ultra Aromax 5u

File ID: J:\LC08\DATA\111516XLC-254\1115000113.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	1100	17100	18000	6	NA	± 20	AverageRF
RDX	1000	1000	19900	20500	3	NA	± 20	AverageRF
1,3,5-Trinitrobenzene	1000	970	49400	45500	NA	-3	± 20	Quadratic
1,3-Dinitrobenzene	1000	1100	57700	61700	7	NA	± 20	AverageRF
3,5-Dinitroaniline	1000	920	53000	52500	NA	-8	± 20	Quadratic
TETRYL	1000	1000	33600	35100	5	NA	± 20	AverageRF
Nitrobenzene	1000	1000	39300	39200	0	NA	± 20	AverageRF
4-Amino-2,6-dinitrotoluene	1000	1100	33000	36300	10	NA	± 20	AverageRF
2-Amino-4,6-dinitrotoluene	1000	1000	44300	44600	1	NA	± 20	AverageRF
2,4,6-Trinitrotoluene	1000	1000	42200	43000	2	NA	± 20	AverageRF
2,6-Dinitrotoluene	1000	1000	31400	28800	NA	0	± 20	Quadratic
2,4-Dinitrotoluene	1000	1000	58000	58200	0	NA	± 20	AverageRF
2-Nitrotoluene	1000	990	25400	25100	-1	NA	± 20	AverageRF
4-Nitrotoluene	1000	990	23100	22800	-1	NA	± 20	AverageRF
3-Nitrotoluene	1000	1000	26800	27700	3	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1000	27800	27900	1	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397
Date Analyzed: 11/16/2016

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 06/08/2016
Calibration ID: CAL14752
Analysis Lot: KWG1610847
Units: ug/L
Column ID: Ultra Aromax 5u

File ID: J:\LC08\DATA\111516XLC-254\1115000126.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	1100	17100	18100	6	NA	± 20	AverageRF
RDX	1000	1000	19900	20500	3	NA	± 20	AverageRF
1,3,5-Trinitrobenzene	1000	1000	49400	47300	NA	1	± 20	Quadratic
1,3-Dinitrobenzene	1000	1100	57700	61500	7	NA	± 20	AverageRF
3,5-Dinitroaniline	1000	900	53000	51700	NA	-10	± 20	Quadratic
TETRYL	1000	1100	33600	37400	12	NA	± 20	AverageRF
Nitrobenzene	1000	990	39300	38900	-1	NA	± 20	AverageRF
4-Amino-2,6-dinitrotoluene	1000	1100	33000	36000	9	NA	± 20	AverageRF
2-Amino-4,6-dinitrotoluene	1000	1000	44300	44400	0	NA	± 20	AverageRF
2,4,6-Trinitrotoluene	1000	1100	42200	44800	6	NA	± 20	AverageRF
2,6-Dinitrotoluene	1000	1000	31400	29800	NA	4	± 20	Quadratic
2,4-Dinitrotoluene	1000	970	58000	56400	-3	NA	± 20	AverageRF
2-Nitrotoluene	1000	980	25400	24800	-2	NA	± 20	AverageRF
4-Nitrotoluene	1000	980	23100	22700	-2	NA	± 20	AverageRF
3-Nitrotoluene	1000	1000	26800	27800	4	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1000	27800	28900	4	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397
Date Analyzed: 11/17/2016

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 06/08/2016
Calibration ID: CAL14752
Analysis Lot: KWG1610847
Units: ug/L

File ID: J:\LC08\DATA\111516XLC-254\1115000137.D

Column ID: Ultra Aromax 5u

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	1100	17100	18100	6	NA	± 20	AverageRF
RDX	1000	1000	19900	20600	3	NA	± 20	AverageRF
1,3,5-Trinitrobenzene	1000	1000	49400	47300	NA	1	± 20	Quadratic
1,3-Dinitrobenzene	1000	1100	57700	61800	7	NA	± 20	AverageRF
3,5-Dinitroaniline	1000	920	53000	52400	NA	-8	± 20	Quadratic
TETRYL	1000	1100	33600	35800	7	NA	± 20	AverageRF
Nitrobenzene	1000	990	39300	39000	-1	NA	± 20	AverageRF
4-Amino-2,6-dinitrotoluene	1000	1100	33000	36300	10	NA	± 20	AverageRF
2-Amino-4,6-dinitrotoluene	1000	1000	44300	44300	0	NA	± 20	AverageRF
2,4,6-Trinitrotoluene	1000	1100	42200	44400	5	NA	± 20	AverageRF
2,6-Dinitrotoluene	1000	1000	31400	30100	NA	5	± 20	Quadratic
2,4-Dinitrotoluene	1000	1000	58000	57800	0	NA	± 20	AverageRF
2-Nitrotoluene	1000	980	25400	25000	-2	NA	± 20	AverageRF
4-Nitrotoluene	1000	990	23100	22800	-1	NA	± 20	AverageRF
3-Nitrotoluene	1000	1000	26800	27700	3	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1000	27800	29100	5	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397
Date Analyzed: 11/18/2016

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 07/13/2016
Calibration ID: CAL14816
Analysis Lot: KWG1610562
Units: ug/L
Column ID: Synergi Hydro R

File ID: J:\LC10\DATA\111716-254\1117000133.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	870	14200	12300	-13	NA	± 20	AverageRF
RDX	1000	980	20300	19900	-2	NA	± 20	AverageRF
1,3,5-Trinitrobenzene	1000	1000	44900	45500	1	NA	± 20	AverageRF
1,3-Dinitrobenzene	1000	1000	59700	60700	2	NA	± 20	AverageRF
3,5-Dinitroaniline	1000	990	48900	48200	-1	NA	± 20	AverageRF
TETRYL	1000	1000	33100	34400	4	NA	± 20	AverageRF
Nitrobenzene	1000	1000	37200	37900	2	NA	± 20	AverageRF
4-Amino-2,6-dinitrotoluene	1000	990	30900	30600	-1	NA	± 20	AverageRF
2-Amino-4,6-dinitrotoluene	1000	1000	41200	42600	3	NA	± 20	AverageRF
2,4,6-Trinitrotoluene	1000	1000	42200	42500	1	NA	± 20	AverageRF
2,6-Dinitrotoluene	1000	940	25000	24100	NA	-6	± 20	Quadratic
2,4-Dinitrotoluene	1000	1100	57300	62200	9	NA	± 20	AverageRF
2-Nitrotoluene	1000	1000	17900	17800	0	NA	± 20	AverageRF
4-Nitrotoluene	1000	1000	15600	16000	2	NA	± 20	AverageRF
3-Nitrotoluene	1000	1000	20000	20300	1	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1100	19400	21100	9	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397
Date Analyzed: 11/18/2016

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 07/13/2016
Calibration ID: CAL14817
Analysis Lot: KWG1610565
Units: ug/L
Column ID: Synergi Hydro 4

File ID: J:\LC10\DATA\111716-210\1117000133.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Nitroglycerin	1000	1100	19300	20700	7	NA	± 20	AverageRF
Pentaerythritol Tetranitrate	1000	1000	16800	17400	4	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1100	51300	54800	7	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397
Date Analyzed: 11/18/2016

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 07/13/2016
Calibration ID: CAL14816
Analysis Lot: KWG1610562
Units: ug/L
Column ID: Synergi Hydro R

File ID: J:\LC10\DATA\111716-254\1117000145.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	860	14200	12100	-14	NA	± 20	AverageRF
RDX	1000	970	20300	19700	-3	NA	± 20	AverageRF
1,3,5-Trinitrobenzene	1000	1000	44900	45100	0	NA	± 20	AverageRF
1,3-Dinitrobenzene	1000	1000	59700	60200	1	NA	± 20	AverageRF
3,5-Dinitroaniline	1000	980	48900	47900	-2	NA	± 20	AverageRF
TETRYL	1000	1000	33100	34200	4	NA	± 20	AverageRF
Nitrobenzene	1000	1000	37200	37900	2	NA	± 20	AverageRF
4-Amino-2,6-dinitrotoluene	1000	980	30900	30200	-2	NA	± 20	AverageRF
2-Amino-4,6-dinitrotoluene	1000	1000	41200	42100	2	NA	± 20	AverageRF
2,4,6-Trinitrotoluene	1000	990	42200	42000	-1	NA	± 20	AverageRF
2,6-Dinitrotoluene	1000	980	25000	25200	NA	-2	± 20	Quadratic
2,4-Dinitrotoluene	1000	1000	57300	58900	3	NA	± 20	AverageRF
2-Nitrotoluene	1000	1000	17900	17900	0	NA	± 20	AverageRF
4-Nitrotoluene	1000	1000	15600	15800	1	NA	± 20	AverageRF
3-Nitrotoluene	1000	1000	20000	20200	1	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1100	19400	21400	10	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397
Date Analyzed: 11/18/2016

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 07/13/2016
Calibration ID: CAL14817
Analysis Lot: KWG1610565
Units: ug/L
Column ID: Synergi Hydro 4

File ID: J:\LC10\DATA\111716-210\1117000145.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Nitroglycerin	1000	1100	19300	20800	8	NA	± 20	AverageRF
Pentaerythritol Tetranitrate	1000	1100	16800	18100	8	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1000	51300	53800	5	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397
Date Analyzed: 11/18/2016

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 07/13/2016
Calibration ID: CAL14816
Analysis Lot: KWG1610562
Units: ug/L
Column ID: Synergi Hydro R

File ID: J:\LC10\DATA\111716-254\1117000156.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	800	14200	11400	-20	NA	± 20	AverageRF
RDX	1000	910	20300	18500	-9	NA	± 20	AverageRF
1,3,5-Trinitrobenzene	1000	950	44900	42700	-5	NA	± 20	AverageRF
1,3-Dinitrobenzene	1000	950	59700	56500	-5	NA	± 20	AverageRF
3,5-Dinitroaniline	1000	910	48900	44200	-9	NA	± 20	AverageRF
TETRYL	1000	930	33100	30700	-7	NA	± 20	AverageRF
Nitrobenzene	1000	960	37200	35700	-4	NA	± 20	AverageRF
4-Amino-2,6-dinitrotoluene	1000	910	30900	28100	-9	NA	± 20	AverageRF
2-Amino-4,6-dinitrotoluene	1000	960	41200	39500	-4	NA	± 20	AverageRF
2,4,6-Trinitrotoluene	1000	930	42200	39400	-7	NA	± 20	AverageRF
2,6-Dinitrotoluene	1000	910	25000	23500	NA	-9	± 20	Quadratic
2,4-Dinitrotoluene	1000	990	57300	56800	-1	NA	± 20	AverageRF
2-Nitrotoluene	1000	940	17900	16800	-6	NA	± 20	AverageRF
4-Nitrotoluene	1000	950	15600	14900	-5	NA	± 20	AverageRF
3-Nitrotoluene	1000	930	20000	18700	-7	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1000	19400	19600	1	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397
Date Analyzed: 11/18/2016

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 07/13/2016
Calibration ID: CAL14817
Analysis Lot: KWG1610565
Units: ug/L
Column ID: Synergi Hydro 4

File ID: J:\LC10\DATA\111716-210\1117000156.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Nitroglycerin	1000	1000	19300	20000	4	NA	± 20	AverageRF
Pentaerythritol Tetranitrate	1000	1000	16800	17200	2	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1000	51300	53600	4	NA	± 20	AverageRF

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

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397

Analysis Run Log
Nitroaromatics and Nitramines (Explosives)

Analysis Method: 8330B

Analysis Lot: KWG1610847
Instrument ID: LC08
Column: Ultra Aromax 5u

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
15000102.D	Instrument Blank	KWG1610847-1	11/15/2016	13:41		11/15/2016	14:59
15000103.D	Continuing Calibration Verification	KWG1610847-2	11/15/2016	15:01		11/15/2016	16:19
15000104.D	ZZZZZZ	ZZZZZZ	11/15/2016	16:21		11/15/2016	17:39
15000105.D	ZZZZZZ	ZZZZZZ	11/15/2016	17:42		11/15/2016	19:00
15000108.D	ZZZZZZ	ZZZZZZ	11/15/2016	21:42		11/15/2016	23:00
15000109.D	ZZZZZZ	ZZZZZZ	11/15/2016	23:03		11/16/2016	00:21
15000110.D	ZZZZZZ	ZZZZZZ	11/16/2016	00:23		11/16/2016	01:41
15000113.D	Continuing Calibration Verification	KWG1610847-3	11/16/2016	04:24		11/16/2016	05:42
15000114.D	Instrument Blank	KWG1610847-4	11/16/2016	05:45		11/16/2016	07:03
15000115.D	ZZZZZZ	ZZZZZZ	11/16/2016	07:05		11/16/2016	08:23
15000116.D	ZZZZZZ	ZZZZZZ	11/16/2016	08:25		11/16/2016	09:43
15000117.D	ZZZZZZ	ZZZZZZ	11/16/2016	09:45		11/16/2016	11:03
15000118.D	ZZZZZZ	ZZZZZZ	11/16/2016	11:06		11/16/2016	12:24
15000120.D	Method Blank	KWG1610140-4	11/16/2016	13:46		11/16/2016	15:04
15000122.D	AIA161101AIASP01	K1613397-001	11/16/2016	16:27		11/16/2016	17:45
15000123.D	AIA161101AIASP02	K1613397-002	11/16/2016	17:47		11/16/2016	19:05
15000124.D	AIA161101AIASP03	K1613397-003	11/16/2016	19:08		11/16/2016	20:26
15000125.D	AIA161101AIASP04	K1613397-004	11/16/2016	20:28		11/16/2016	21:46
15000126.D	Continuing Calibration Verification	KWG1610847-5	11/16/2016	21:48		11/16/2016	23:06
15000127.D	Instrument Blank	KWG1610847-6	11/16/2016	23:09		11/17/2016	00:27
15000128.D	AIA161101AIASP05	K1613397-005	11/17/2016	00:29		11/17/2016	01:47
15000129.D	AIA161101FHDS	K1613397-006	11/17/2016	01:49		11/17/2016	03:07
15000132.D	AIA161101IDW	K1613397-007	11/17/2016	05:50		11/17/2016	07:08
15000133.D	AIA16110198IAMW01	K1613397-008	11/17/2016	07:11		11/17/2016	08:29
15000134.D	AIA16110198IAMW03	K1613397-009	11/17/2016	08:31		11/17/2016	09:49
15000135.D	AIA16110198IAMW04	K1613397-010	11/17/2016	09:51		11/17/2016	11:09
15000136.D	AIA16110198IAMW11	K1613397-011	11/17/2016	11:12		11/17/2016	12:30
15000137.D	Continuing Calibration Verification	KWG1610847-7	11/17/2016	12:32		11/17/2016	13:50
15000138.D	Instrument Blank	KWG1610847-8	11/17/2016	13:52		11/17/2016	15:10
15000139.D	ZZZZZZ	ZZZZZZ	11/17/2016	15:13		11/17/2016	16:31
15000140.D	ZZZZZZ	ZZZZZZ	11/17/2016	16:33		11/17/2016	17:51
15000141.D	ZZZZZZ	ZZZZZZ	11/17/2016	17:53		11/17/2016	19:11
15000143.D	ZZZZZZ	ZZZZZZ	11/17/2016	20:34		11/17/2016	21:52
15000146.D	ZZZZZZ	ZZZZZZ	11/18/2016	00:35		11/18/2016	01:53
15000147.D	Continuing Calibration Verification	KWG1610847-9	11/18/2016	01:55		11/18/2016	03:13

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397

Analysis Run Log
Nitroaromatics and Nitramines (Explosives)

Analysis Method: 8330B

Analysis Lot: KWG1610847
Instrument ID: LC08
Column: Ultra Aromax 5u

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
15000148.D	Instrument Blank	KWG1610847-10	11/18/2016	03:16		11/18/2016	04:34
15000149.D	ZZZZZZ	ZZZZZZ	11/18/2016	04:36		11/18/2016	05:54
15000152.D	ZZZZZZ	ZZZZZZ	11/18/2016	08:37		11/18/2016	09:55
15000153.D	ZZZZZZ	ZZZZZZ	11/18/2016	09:57		11/18/2016	11:15
15000154.D	ZZZZZZ	ZZZZZZ	11/18/2016	11:17		11/18/2016	12:35
15000155.D	Continuing Calibration Verification	KWG1610847-11	11/18/2016	12:38		11/18/2016	13:56
15000156.D	Instrument Blank	KWG1610847-12	11/18/2016	13:58		11/18/2016	15:16

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

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397

Analysis Run Log
Nitroaromatics and Nitramines (Explosives)

Analysis Method: 8330B

Analysis Lot: KWG1610562
Instrument ID: LC10
Column: Synergi Hydro R

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
17000102.D	Instrument Blank	KWG1610562-4	11/17/2016	10:45		11/17/2016	11:18
17000103.D	Continuing Calibration Verification	KWG1610562-1	11/17/2016	11:21		11/17/2016	11:54
17000104.D	ZZZZZZ	ZZZZZZ	11/17/2016	11:57		11/17/2016	12:30
17000105.D	ZZZZZZ	ZZZZZZ	11/17/2016	12:33		11/17/2016	13:06
17000106.D	ZZZZZZ	ZZZZZZ	11/17/2016	13:10		11/17/2016	13:43
17000107.D	ZZZZZZ	ZZZZZZ	11/17/2016	13:46		11/17/2016	14:19
17000108.D	ZZZZZZ	ZZZZZZ	11/17/2016	14:22		11/17/2016	14:55
17000109.D	ZZZZZZ	ZZZZZZ	11/17/2016	14:58		11/17/2016	15:31
17000110.D	ZZZZZZ	ZZZZZZ	11/17/2016	15:35		11/17/2016	16:08
17000111.D	ZZZZZZ	ZZZZZZ	11/17/2016	16:11		11/17/2016	16:44
17000112.D	ZZZZZZ	ZZZZZZ	11/17/2016	16:47		11/17/2016	17:20
17000113.D	Continuing Calibration Verification	KWG1610562-2	11/17/2016	17:23		11/17/2016	17:56
17000114.D	Instrument Blank	KWG1610562-5	11/17/2016	18:00		11/17/2016	18:33
17000115.D	ZZZZZZ	ZZZZZZ	11/17/2016	18:36		11/17/2016	19:09
17000116.D	ZZZZZZ	ZZZZZZ	11/17/2016	19:12		11/17/2016	19:45
17000117.D	ZZZZZZ	ZZZZZZ	11/17/2016	19:48		11/17/2016	20:21
17000118.D	ZZZZZZ	ZZZZZZ	11/17/2016	20:24		11/17/2016	20:57
17000119.D	ZZZZZZ	ZZZZZZ	11/17/2016	21:01		11/17/2016	21:34
17000120.D	ZZZZZZ	ZZZZZZ	11/17/2016	21:37		11/17/2016	22:10
17000121.D	ZZZZZZ	ZZZZZZ	11/17/2016	22:14		11/17/2016	22:47
17000122.D	ZZZZZZ	ZZZZZZ	11/17/2016	22:50		11/17/2016	23:23
17000123.D	ZZZZZZ	ZZZZZZ	11/17/2016	23:26		11/17/2016	23:59
17000124.D	Continuing Calibration Verification	KWG1610562-3	11/18/2016	00:03		11/18/2016	00:36
17000125.D	Instrument Blank	KWG1610562-6	11/18/2016	00:39		11/18/2016	01:12
17000126.D	ZZZZZZ	ZZZZZZ	11/18/2016	01:15		11/18/2016	01:48
17000127.D	ZZZZZZ	ZZZZZZ	11/18/2016	01:51		11/18/2016	02:24
17000128.D	ZZZZZZ	ZZZZZZ	11/18/2016	02:28		11/18/2016	03:01
17000129.D	ZZZZZZ	ZZZZZZ	11/18/2016	03:04		11/18/2016	03:37
17000130.D	ZZZZZZ	ZZZZZZ	11/18/2016	03:40		11/18/2016	04:13
17000131.D	ZZZZZZ	ZZZZZZ	11/18/2016	04:16		11/18/2016	04:49
17000132.D	ZZZZZZ	ZZZZZZ	11/18/2016	04:52		11/18/2016	05:25
17000133.D	Continuing Calibration Verification	KWG1610562-10	11/18/2016	05:29		11/18/2016	06:02
17000134.D	Instrument Blank	KWG1610562-7	11/18/2016	06:05		11/18/2016	06:38
17000135.D	Method Blank	KWG1610140-4	11/18/2016	06:41		11/18/2016	07:14
17000136.D	Lab Control Sample	KWG1610140-3	11/18/2016	07:17		11/18/2016	07:50

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

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397

Analysis Run Log
Nitroaromatics and Nitramines (Explosives)

Analysis Method: 8330B

Analysis Lot: KWG1610562
Instrument ID: LC10
Column: Synergi Hydro R

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
17000137.D	AIA161101AIASP01	K1613397-001	11/18/2016	07:54		11/18/2016	08:27
17000138.D	AIA161101AIASP02	K1613397-002	11/18/2016	08:30		11/18/2016	09:03
17000139.D	AIA161101AIASP03	K1613397-003	11/18/2016	09:06		11/18/2016	09:39
17000140.D	AIA161101AIASP04	K1613397-004	11/18/2016	09:42		11/18/2016	10:15
17000141.D	AIA161101AIASP05	K1613397-005	11/18/2016	10:19		11/18/2016	10:52
17000142.D	AIA161101FHDS	K1613397-006	11/18/2016	10:55		11/18/2016	11:28
17000143.D	AIA161101FHDSMS	KWG1610140-1	11/18/2016	11:31		11/18/2016	12:04
17000144.D	AIA161101FHDSMS	KWG1610140-2	11/18/2016	12:07		11/18/2016	12:40
17000145.D	Continuing Calibration Verification	KWG1610562-11	11/18/2016	12:43		11/18/2016	13:16
17000146.D	Instrument Blank	KWG1610562-8	11/18/2016	13:20		11/18/2016	13:53
17000147.D	AIA161101IDW	K1613397-007	11/18/2016	13:56		11/18/2016	14:29
17000148.D	AIA16110198IAMW01	K1613397-008	11/18/2016	14:32		11/18/2016	15:05
17000149.D	AIA16110198IAMW03	K1613397-009	11/18/2016	15:08		11/18/2016	15:41
17000150.D	AIA16110198IAMW04	K1613397-010	11/18/2016	15:45		11/18/2016	16:18
17000151.D	AIA16110198IAMW11	K1613397-011	11/18/2016	16:21		11/18/2016	16:54
17000152.D	ZZZZZZ	ZZZZZZ	11/18/2016	16:57		11/18/2016	17:30
17000153.D	ZZZZZZ	ZZZZZZ	11/18/2016	17:33		11/18/2016	18:06
17000154.D	ZZZZZZ	ZZZZZZ	11/18/2016	18:10		11/18/2016	18:43
17000155.D	ZZZZZZ	ZZZZZZ	11/18/2016	18:46		11/18/2016	19:19
17000156.D	Continuing Calibration Verification	KWG1610562-12	11/18/2016	19:22		11/18/2016	19:55
17000157.D	Instrument Blank	KWG1610562-9	11/18/2016	19:58		11/18/2016	20:31
17000158.D	ZZZZZZ	ZZZZZZ	11/18/2016	20:35		11/18/2016	21:08
17000159.D	ZZZZZZ	ZZZZZZ	11/18/2016	21:11		11/18/2016	21:44
17000160.D	ZZZZZZ	ZZZZZZ	11/18/2016	21:47		11/18/2016	22:20
17000161.D	ZZZZZZ	ZZZZZZ	11/18/2016	22:23		11/18/2016	22:56
17000162.D	ZZZZZZ	ZZZZZZ	11/18/2016	23:00		11/18/2016	23:33
17000163.D	ZZZZZZ	ZZZZZZ	11/18/2016	23:36		11/19/2016	00:09
17000164.D	ZZZZZZ	ZZZZZZ	11/19/2016	00:12		11/19/2016	00:45
17000165.D	ZZZZZZ	ZZZZZZ	11/19/2016	00:48		11/19/2016	01:21
17000166.D	ZZZZZZ	ZZZZZZ	11/19/2016	01:25		11/19/2016	01:58
17000167.D	ZZZZZZ	ZZZZZZ	11/19/2016	02:01		11/19/2016	02:34
17000168.D	Continuing Calibration Verification	KWG1610562-13	11/19/2016	02:37		11/19/2016	03:10
17000169.D	Instrument Blank	KWG1610562-17	11/19/2016	03:13		11/19/2016	03:46
17000170.D	ZZZZZZ	ZZZZZZ	11/19/2016	03:49		11/19/2016	04:22
17000171.D	ZZZZZZ	ZZZZZZ	11/19/2016	04:26		11/19/2016	04:59

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

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397

Analysis Run Log
Nitroaromatics and Nitramines (Explosives)

Analysis Method: 8330B

Analysis Lot: KWG1610562
Instrument ID: LC10
Column: Synergi Hydro R

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
17000172.D	ZZZZZZ	ZZZZZZ	11/19/2016	05:02		11/19/2016	05:35
17000173.D	ZZZZZZ	ZZZZZZ	11/19/2016	05:38		11/19/2016	06:11
17000174.D	ZZZZZZ	ZZZZZZ	11/19/2016	06:14		11/19/2016	06:47
17000175.D	Continuing Calibration Verification	KWG1610562-14	11/19/2016	06:51		11/19/2016	07:24
17000176.D	Instrument Blank	KWG1610562-18	11/19/2016	07:27		11/19/2016	08:00
17000177.D	ZZZZZZ	ZZZZZZ	11/19/2016	08:03		11/19/2016	08:36
17000178.D	ZZZZZZ	ZZZZZZ	11/19/2016	08:39		11/19/2016	09:12
17000179.D	ZZZZZZ	ZZZZZZ	11/19/2016	09:16		11/19/2016	09:49
17000180.D	ZZZZZZ	ZZZZZZ	11/19/2016	09:52		11/19/2016	10:25
17000181.D	ZZZZZZ	ZZZZZZ	11/19/2016	10:28		11/19/2016	11:01
17000182.D	ZZZZZZ	ZZZZZZ	11/19/2016	11:04		11/19/2016	11:37
17000183.D	ZZZZZZ	ZZZZZZ	11/19/2016	11:41		11/19/2016	12:14
17000184.D	ZZZZZZ	ZZZZZZ	11/19/2016	12:17		11/19/2016	12:50
17000185.D	ZZZZZZ	ZZZZZZ	11/19/2016	12:53		11/19/2016	13:26
17000186.D	ZZZZZZ	ZZZZZZ	11/19/2016	13:29		11/19/2016	14:02
17000187.D	ZZZZZZ	ZZZZZZ	11/19/2016	14:06		11/19/2016	14:39
17000188.D	Continuing Calibration Verification	KWG1610562-15	11/19/2016	14:42		11/19/2016	15:15
17000189.D	Instrument Blank	KWG1610562-19	11/19/2016	15:18		11/19/2016	15:51
17000190.D	ZZZZZZ	ZZZZZZ	11/19/2016	15:54		11/19/2016	16:27
17000191.D	ZZZZZZ	ZZZZZZ	11/19/2016	16:31		11/19/2016	17:04
17000192.D	ZZZZZZ	ZZZZZZ	11/19/2016	17:07		11/19/2016	17:40
17000193.D	ZZZZZZ	ZZZZZZ	11/19/2016	17:43		11/19/2016	18:16
17000194.D	ZZZZZZ	ZZZZZZ	11/19/2016	18:19		11/19/2016	18:52
17000195.D	ZZZZZZ	ZZZZZZ	11/19/2016	18:56		11/19/2016	19:29
17000196.D	ZZZZZZ	ZZZZZZ	11/19/2016	19:32		11/19/2016	20:05
17000197.D	ZZZZZZ	ZZZZZZ	11/19/2016	20:08		11/19/2016	20:41
17000198.D	ZZZZZZ	ZZZZZZ	11/19/2016	20:44		11/19/2016	21:17
17000199.D	ZZZZZZ	ZZZZZZ	11/19/2016	21:21		11/19/2016	21:54
17000200.D	Instrument Blank	KWG1610562-21	11/19/2016	21:57		11/19/2016	22:30
17000201.D	Instrument Blank	KWG1610562-8	11/19/2016	22:33		11/19/2016	23:06
17000202.D	ZZZZZZ	ZZZZZZ	11/19/2016	23:09		11/19/2016	23:42
17000203.D	ZZZZZZ	ZZZZZZ	11/19/2016	23:45		11/20/2016	00:18
17000204.D	ZZZZZZ	ZZZZZZ	11/20/2016	00:22		11/20/2016	00:55
17000205.D	Continuing Calibration Verification	KWG1610562-20	11/20/2016	00:58		11/20/2016	01:31
17000206.D	Instrument Blank	KWG1610562-22	11/20/2016	01:34		11/20/2016	02:07

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397

Analysis Run Log
Nitroaromatics and Nitramines (Explosives)

Analysis Method: 8330B

Analysis Lot: KWG1610562
Instrument ID: LC10
Column: Synergi Hydro R

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
17000208.D	ZZZZZZ	ZZZZZZ	11/20/2016	02:47		11/20/2016	03:20
17000209.D	ZZZZZZ	ZZZZZZ	11/20/2016	03:23		11/20/2016	03:56
17000210.D	Continuing Calibration Verification	KWG1610562-24	11/20/2016	03:59		11/20/2016	04:32
17000211.D	Instrument Blank	KWG1610562-23	11/20/2016	04:35		11/20/2016	05:08

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397

Analysis Run Log
Nitroaromatics and Nitramines (Explosives)

Analysis Method: 8330B

Analysis Lot: KWG1610565
Instrument ID: LC10
Column: Synergi Hydro 4

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
17000102.D	Instrument Blank	KWG1610565-4	11/17/2016	10:45		11/17/2016	11:18
17000103.D	Continuing Calibration Verification	KWG1610565-1	11/17/2016	11:21		11/17/2016	11:54
17000104.D	ZZZZZZ	ZZZZZZ	11/17/2016	11:57		11/17/2016	12:30
17000105.D	ZZZZZZ	ZZZZZZ	11/17/2016	12:33		11/17/2016	13:06
17000106.D	ZZZZZZ	ZZZZZZ	11/17/2016	13:10		11/17/2016	13:43
17000107.D	ZZZZZZ	ZZZZZZ	11/17/2016	13:46		11/17/2016	14:19
17000108.D	ZZZZZZ	ZZZZZZ	11/17/2016	14:22		11/17/2016	14:55
17000109.D	ZZZZZZ	ZZZZZZ	11/17/2016	14:58		11/17/2016	15:31
17000110.D	ZZZZZZ	ZZZZZZ	11/17/2016	15:35		11/17/2016	16:08
17000111.D	ZZZZZZ	ZZZZZZ	11/17/2016	16:11		11/17/2016	16:44
17000112.D	ZZZZZZ	ZZZZZZ	11/17/2016	16:47		11/17/2016	17:20
17000113.D	Continuing Calibration Verification	KWG1610565-2	11/17/2016	17:23		11/17/2016	17:56
17000114.D	Instrument Blank	KWG1610565-5	11/17/2016	18:00		11/17/2016	18:33
17000115.D	ZZZZZZ	ZZZZZZ	11/17/2016	18:36		11/17/2016	19:09
17000116.D	ZZZZZZ	ZZZZZZ	11/17/2016	19:12		11/17/2016	19:45
17000117.D	ZZZZZZ	ZZZZZZ	11/17/2016	19:48		11/17/2016	20:21
17000118.D	ZZZZZZ	ZZZZZZ	11/17/2016	20:24		11/17/2016	20:57
17000119.D	ZZZZZZ	ZZZZZZ	11/17/2016	21:01		11/17/2016	21:34
17000120.D	ZZZZZZ	ZZZZZZ	11/17/2016	21:37		11/17/2016	22:10
17000121.D	ZZZZZZ	ZZZZZZ	11/17/2016	22:14		11/17/2016	22:47
17000122.D	ZZZZZZ	ZZZZZZ	11/17/2016	22:50		11/17/2016	23:23
17000123.D	ZZZZZZ	ZZZZZZ	11/17/2016	23:26		11/17/2016	23:59
17000124.D	Continuing Calibration Verification	KWG1610565-3	11/18/2016	00:03		11/18/2016	00:36
17000125.D	Instrument Blank	KWG1610565-6	11/18/2016	00:39		11/18/2016	01:12
17000126.D	ZZZZZZ	ZZZZZZ	11/18/2016	01:15		11/18/2016	01:48
17000127.D	ZZZZZZ	ZZZZZZ	11/18/2016	01:51		11/18/2016	02:24
17000128.D	ZZZZZZ	ZZZZZZ	11/18/2016	02:28		11/18/2016	03:01
17000129.D	ZZZZZZ	ZZZZZZ	11/18/2016	03:04		11/18/2016	03:37
17000133.D	Continuing Calibration Verification	KWG1610565-10	11/18/2016	05:29		11/18/2016	06:02
17000134.D	Instrument Blank	KWG1610565-7	11/18/2016	06:05		11/18/2016	06:38
17000135.D	Method Blank	KWG1610140-4	11/18/2016	06:41		11/18/2016	07:14
17000136.D	Lab Control Sample	KWG1610140-3	11/18/2016	07:17		11/18/2016	07:50
17000137.D	AIA161101AIASP01	K1613397-001	11/18/2016	07:54		11/18/2016	08:27
17000138.D	AIA161101AIASP02	K1613397-002	11/18/2016	08:30		11/18/2016	09:03
17000139.D	AIA161101AIASP03	K1613397-003	11/18/2016	09:06		11/18/2016	09:39

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

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397

Analysis Run Log
Nitroaromatics and Nitramines (Explosives)

Analysis Method: 8330B

Analysis Lot: KWG1610565
Instrument ID: LC10
Column: Synergi Hydro 4

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
17000140.D	AIA161101AIASP04	K1613397-004	11/18/2016	09:42		11/18/2016	10:15
17000141.D	AIA161101AIASP05	K1613397-005	11/18/2016	10:19		11/18/2016	10:52
17000142.D	AIA161101FHDS	K1613397-006	11/18/2016	10:55		11/18/2016	11:28
17000143.D	AIA161101FHDSMS	KWG1610140-1	11/18/2016	11:31		11/18/2016	12:04
17000144.D	AIA161101FHDSMS	KWG1610140-2	11/18/2016	12:07		11/18/2016	12:40
17000145.D	Continuing Calibration Verification	KWG1610565-11	11/18/2016	12:43		11/18/2016	13:16
17000146.D	Instrument Blank	KWG1610565-8	11/18/2016	13:20		11/18/2016	13:53
17000147.D	AIA161101IDW	K1613397-007	11/18/2016	13:56		11/18/2016	14:29
17000148.D	AIA16110198IAMW01	K1613397-008	11/18/2016	14:32		11/18/2016	15:05
17000149.D	AIA16110198IAMW03	K1613397-009	11/18/2016	15:08		11/18/2016	15:41
17000150.D	AIA16110198IAMW04	K1613397-010	11/18/2016	15:45		11/18/2016	16:18
17000151.D	AIA16110198IAMW11	K1613397-011	11/18/2016	16:21		11/18/2016	16:54
17000152.D	ZZZZZZ	ZZZZZZ	11/18/2016	16:57		11/18/2016	17:30
17000153.D	ZZZZZZ	ZZZZZZ	11/18/2016	17:33		11/18/2016	18:06
17000154.D	ZZZZZZ	ZZZZZZ	11/18/2016	18:10		11/18/2016	18:43
17000155.D	ZZZZZZ	ZZZZZZ	11/18/2016	18:46		11/18/2016	19:19
17000156.D	Continuing Calibration Verification	KWG1610565-12	11/18/2016	19:22		11/18/2016	19:55
17000157.D	Instrument Blank	KWG1610565-9	11/18/2016	19:58		11/18/2016	20:31
17000158.D	ZZZZZZ	ZZZZZZ	11/18/2016	20:35		11/18/2016	21:08
17000159.D	ZZZZZZ	ZZZZZZ	11/18/2016	21:11		11/18/2016	21:44
17000160.D	ZZZZZZ	ZZZZZZ	11/18/2016	21:47		11/18/2016	22:20
17000161.D	ZZZZZZ	ZZZZZZ	11/18/2016	22:23		11/18/2016	22:56
17000162.D	ZZZZZZ	ZZZZZZ	11/18/2016	23:00		11/18/2016	23:33
17000163.D	ZZZZZZ	ZZZZZZ	11/18/2016	23:36		11/19/2016	00:09
17000164.D	ZZZZZZ	ZZZZZZ	11/19/2016	00:12		11/19/2016	00:45
17000165.D	ZZZZZZ	ZZZZZZ	11/19/2016	00:48		11/19/2016	01:21
17000166.D	ZZZZZZ	ZZZZZZ	11/19/2016	01:25		11/19/2016	01:58
17000167.D	ZZZZZZ	ZZZZZZ	11/19/2016	02:01		11/19/2016	02:34
17000168.D	Continuing Calibration Verification	KWG1610565-13	11/19/2016	02:37		11/19/2016	03:10
17000169.D	Instrument Blank	KWG1610565-14	11/19/2016	03:13		11/19/2016	03:46
17000170.D	ZZZZZZ	ZZZZZZ	11/19/2016	03:49		11/19/2016	04:22
17000171.D	ZZZZZZ	ZZZZZZ	11/19/2016	04:26		11/19/2016	04:59
17000172.D	ZZZZZZ	ZZZZZZ	11/19/2016	05:02		11/19/2016	05:35
17000173.D	ZZZZZZ	ZZZZZZ	11/19/2016	05:38		11/19/2016	06:11
17000174.D	ZZZZZZ	ZZZZZZ	11/19/2016	06:14		11/19/2016	06:47

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1613397

Analysis Run Log
Nitroaromatics and Nitramines (Explosives)

Analysis Method: 8330B

Analysis Lot: KWG1610565
Instrument ID: LC10
Column: Synergi Hydro 4

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
17000175.D	Continuing Calibration Verification	KWG1610565-17	11/19/2016	06:51		11/19/2016	07:24
17000176.D	Instrument Blank	KWG1610565-15	11/19/2016	07:27		11/19/2016	08:00
17000177.D	ZZZZZZ	ZZZZZZ	11/19/2016	08:03		11/19/2016	08:36
17000180.D	ZZZZZZ	ZZZZZZ	11/19/2016	09:52		11/19/2016	10:25
17000181.D	ZZZZZZ	ZZZZZZ	11/19/2016	10:28		11/19/2016	11:01
17000182.D	ZZZZZZ	ZZZZZZ	11/19/2016	11:04		11/19/2016	11:37
17000183.D	ZZZZZZ	ZZZZZZ	11/19/2016	11:41		11/19/2016	12:14
17000184.D	ZZZZZZ	ZZZZZZ	11/19/2016	12:17		11/19/2016	12:50
17000185.D	ZZZZZZ	ZZZZZZ	11/19/2016	12:53		11/19/2016	13:26
17000186.D	ZZZZZZ	ZZZZZZ	11/19/2016	13:29		11/19/2016	14:02
17000187.D	ZZZZZZ	ZZZZZZ	11/19/2016	14:06		11/19/2016	14:39
17000188.D	Continuing Calibration Verification	KWG1610565-18	11/19/2016	14:42		11/19/2016	15:15
17000189.D	Instrument Blank	KWG1610565-16	11/19/2016	15:18		11/19/2016	15:51
17000190.D	ZZZZZZ	ZZZZZZ	11/19/2016	15:54		11/19/2016	16:27
17000191.D	ZZZZZZ	ZZZZZZ	11/19/2016	16:31		11/19/2016	17:04
17000192.D	ZZZZZZ	ZZZZZZ	11/19/2016	17:07		11/19/2016	17:40
17000193.D	ZZZZZZ	ZZZZZZ	11/19/2016	17:43		11/19/2016	18:16
17000194.D	ZZZZZZ	ZZZZZZ	11/19/2016	18:19		11/19/2016	18:52
17000195.D	ZZZZZZ	ZZZZZZ	11/19/2016	18:56		11/19/2016	19:29
17000196.D	ZZZZZZ	ZZZZZZ	11/19/2016	19:32		11/19/2016	20:05
17000197.D	ZZZZZZ	ZZZZZZ	11/19/2016	20:08		11/19/2016	20:41
17000198.D	ZZZZZZ	ZZZZZZ	11/19/2016	20:44		11/19/2016	21:17
17000199.D	ZZZZZZ	ZZZZZZ	11/19/2016	21:21		11/19/2016	21:54
17000200.D	Continuing Calibration Verification	KWG1610565-19	11/19/2016	21:57		11/19/2016	22:30
17000201.D	Instrument Blank	KWG1610565-8	11/19/2016	22:33		11/19/2016	23:06
17000202.D	ZZZZZZ	ZZZZZZ	11/19/2016	23:09		11/19/2016	23:42
17000203.D	ZZZZZZ	ZZZZZZ	11/19/2016	23:45		11/20/2016	00:18
17000204.D	ZZZZZZ	ZZZZZZ	11/20/2016	00:22		11/20/2016	00:55
17000205.D	Continuing Calibration Verification	KWG1610565-20	11/20/2016	00:58		11/20/2016	01:31
17000206.D	Instrument Blank	KWG1610565-21	11/20/2016	01:34		11/20/2016	02:07
17000207.D	ZZZZZZ	ZZZZZZ	11/20/2016	02:10		11/20/2016	02:43
17000208.D	ZZZZZZ	ZZZZZZ	11/20/2016	02:47		11/20/2016	03:20
17000209.D	ZZZZZZ	ZZZZZZ	11/20/2016	03:23		11/20/2016	03:56
17000210.D	Continuing Calibration Verification	KWG1610565-22	11/20/2016	03:59		11/20/2016	04:32
17000211.D	Instrument Blank	KWG1610565-23	11/20/2016	04:35		11/20/2016	05:08

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

QA/QC Results

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

Service Request: K1613397
Date Extracted: 11/06/2016

Extraction Prep Log
Nitroaromatics and Nitramines (Explosives)

Extraction Method: EPA 3535A
Analysis Method: 8330B

Extraction Lot: KWG1610140
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
AIA161101AIASP01	K1613397-001	11/01/16	11/02/16	980ml	4ml	NA	
AIA161101AIASP01RE	K1613397-001	11/01/16	11/02/16	980ml	4ml	NA	
AIA161101AIASP02RE	K1613397-002	11/01/16	11/02/16	1000ml	4ml	NA	
AIA161101AIASP02	K1613397-002	11/01/16	11/02/16	1000ml	4ml	NA	
AIA161101AIASP03RE	K1613397-003	11/01/16	11/02/16	1050ml	4ml	NA	
AIA161101AIASP03	K1613397-003	11/01/16	11/02/16	1050ml	4ml	NA	
AIA161101AIASP04RE	K1613397-004	11/01/16	11/02/16	1060ml	4ml	NA	
AIA161101AIASP04	K1613397-004	11/01/16	11/02/16	1060ml	4ml	NA	
AIA161101AIASP05RE	K1613397-005	11/01/16	11/02/16	1060ml	4ml	NA	
AIA161101AIASP05	K1613397-005	11/01/16	11/02/16	1060ml	4ml	NA	
AIA161101FHDS	K1613397-006	11/01/16	11/02/16	1060ml	4ml	NA	
AIA161101FHDSRE	K1613397-006	11/01/16	11/02/16	1060ml	4ml	NA	
AIA161101IDW	K1613397-007	11/01/16	11/02/16	1060ml	4ml	NA	
AIA161101IDWRE	K1613397-007	11/01/16	11/02/16	1060ml	4ml	NA	
AIA16110198IAMW01RE	K1613397-008	11/01/16	11/02/16	1080ml	4ml	NA	
AIA16110198IAMW01	K1613397-008	11/01/16	11/02/16	1080ml	4ml	NA	
AIA16110198IAMW03RE	K1613397-009	11/01/16	11/02/16	1080ml	4ml	NA	
AIA16110198IAMW03	K1613397-009	11/01/16	11/02/16	1080ml	4ml	NA	
AIA16110198IAMW04RE	K1613397-010	11/01/16	11/02/16	1070ml	4ml	NA	
AIA16110198IAMW04	K1613397-010	11/01/16	11/02/16	1070ml	4ml	NA	
AIA16110198IAMW11RE	K1613397-011	11/01/16	11/02/16	1060ml	4ml	NA	
AIA16110198IAMW11	K1613397-011	11/01/16	11/02/16	1060ml	4ml	NA	
Method Blank	KWG1610140-4	NA	NA	1000ml	4ml	NA	
AIA161101FHDSMS	KWG1610140-1	11/01/16	11/02/16	1050ml	4ml	NA	
AIA161101FHDSMS	KWG1610140-2	11/01/16	11/02/16	1070ml	4ml	NA	
Lab Control Sample	KWG1610140-3	NA	NA	1000ml	4ml	NA	

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

Confirmation Results

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

Service Request: K1613397
Date Collected: 11/01/2016
Date Received: 11/02/2016
Date Extracted: 11/06/2016

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA161101AIASP01
Lab Code: K1613397-001
Extraction Method: EPA 3535A
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
HMX	0.11	0.038	0.10	0.16	46.2	JP	1	11/18/16
RDX	0.21	0.12	0.15	0.19	23.5	J	1	11/18/16

Confirmation Results

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

Service Request: K1613397
Date Collected: 11/01/2016
Date Received: 11/02/2016
Date Extracted: 11/06/2016

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA161101AIASP02
Lab Code: K1613397-002
Extraction Method: EPA 3535A
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
HMX	0.10	0.037	0.072	0.12	50.0	JP	1	11/18/16

Confirmation Results

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

Service Request: K1613397
Date Collected: 11/01/2016
Date Received: 11/02/2016
Date Extracted: 11/06/2016

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA161101AIASP03
Lab Code: K1613397-003
Extraction Method: EPA 3535A
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
RDX	0.20	0.11	0.32	0.39	19.7		1	11/18/16

Confirmation Results

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

Service Request: K1613397
Date Collected: 11/01/2016
Date Received: 11/02/2016
Date Extracted: 11/06/2016

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA161101AIASP04
Lab Code: K1613397-004
Extraction Method: EPA 3535A
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
RDX	0.20	0.11	0.24	0.32	28.6		1	11/18/16
3-Nitrotoluene	0.10	0.034	0.038			JN	1	11/18/16

Confirmation Results

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

Service Request: K1613397
Date Collected: 11/01/2016
Date Received: 11/02/2016
Date Extracted: 11/06/2016

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA161101IDW
Lab Code: K1613397-007
Extraction Method: EPA 3535A
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
RDX	0.20	0.11	0.27	0.36	28.6		1	11/18/16

Confirmation Results

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

Service Request: K1613397
Date Collected: 11/01/2016
Date Received: 11/02/2016
Date Extracted: 11/06/2016

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA16110198IAMW03
Lab Code: K1613397-009
Extraction Method: EPA 3535A
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
RDX	0.20	0.11	0.40	0.50	22.2		1	11/18/16

Confirmation Results

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

Service Request: K1613397
Date Collected: 11/01/2016
Date Received: 11/02/2016
Date Extracted: 11/06/2016

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA16110198IAMW04
Lab Code: K1613397-010
Extraction Method: EPA 3535A
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
RDX	0.20	0.11	0.24	0.35	37.3		1	11/18/16

Tetra Tech, Inc.

Data Review Report

Project Name: JBLM/Artillery Impact Area
Project Number: K1613397
Collection Date: 11/01/16
Laboratory: ALS Environmental, Kelso, WA

DATA REVIEW

- Nine water samples and one field duplicate were collected and analyzed for explosives by EPA method SW-846 8330. One Investigation Derived Waste (IDW) sample was also collected. A review was performed of the following parameters as applicable:
 - Chain-of-custody (C-O-C) documentation
 - Holding time compliance
 - Blank sample data
 - Spike sample recovery
 - Duplicate samples
 - Surrogate recoveries

Sample Identification:

AIA161101AIASP01
AIA161101AIASP02
AIA161101AIASP03
AIA161101AIASP04
AIA161101AIASP05
AIA161101FHDS
AIA161101IDW
AIA161101981AMW01
AIA161101981AMW02
AIA161101981AMW03
AIA161101981AMW04
AIA161101981AMW11

Review Summary

1. Holding Time

All holding times were met. The coolers arrived at acceptable temperature levels. All chain of custody documentation and sample labels were in order.

2. Matrix Spikes

Sample AIA16101FHDS was selected as the matrix spike/matrix spike duplicate for quality control purposes. All matrix spike and matrix spike duplicate sample recoveries were within acceptable limits of control. All MS/MSD RPD's were within control limits.

3. Blanks

The method blank had no target analytes detected.

4. Duplicates

Sample AIA161101981AMW11 was collected as a field duplicate for sample AIA161101981AMW01. All target analytes were non-detect in the field sample and field duplicate sample.

5. Laboratory Control Samples

All laboratory control sample recoveries were within acceptable limits of control except for Pentaerythritol Tetranitrate which was recovered slightly low. All recoveries in the matrix spike and matrix spike duplicate samples were within criteria. All sample non-detect results are potentially biased low and should be considered as estimated.

6. Surrogates

All surrogate recoveries were within acceptable limits of control.

7. Comments

Manual integration was performed to correct the automated data program integration. The manual integration was performed in accordance with NELAP and DOD QA/QC protocol. All data are complete and usable.



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May 17, 2017

Analytical Report for Service Request No: K1703579

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

RE: JBLM AIA / TO 01B

Dear Scott,

Enclosed are the results of the sample(s) submitted to our laboratory April 12, 2017
For your reference, these analyses have been assigned our service request number **K1703579**.

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 contact me if you have any questions. My extension is 3356. You may also contact me via email at Kurt.Clarkson@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

for Kurt Clarkson
Client Services
Manager



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 Nitroaromatics and Nitramines (Explosives)

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	-
ISO 17025	http://www.pjllabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
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
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
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ALS ENVIRONMENTAL

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO-01B
Sample Matrix: Water

Service Request No.: K1703579
Date Received: 04/12/17

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

Eight water samples were received for analysis at ALS Environmental on 04/12/17. 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.

Explosives by EPA Method 8330

Matrix Spike Recovery Exceptions:

The matrix spike recovery of several analytes for sample AIA170410FHDS was outside control criteria. Recovery in the Laboratory Control Sample (LCS) was acceptable, which indicated the analytical batch was in control. The matrix spike outlier suggested a potential bias in this matrix. No further corrective action was appropriate.

Elevated Detection Limits:

The detection limit was elevated for 2-Nitrotoluene in sample AIA17041098IAMW03. The chromatogram indicated the presence of non-target background components. The matrix interference prevented adequate resolution of the target compound at the normal limit. The result was flagged to indicate the matrix interference.

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.

Calibration Verification Exceptions:

The upper control criterion was exceeded for 1,3-Dinitrobenzene and 2,6-Dinitrotoluene in Continuing Calibration Verification (CCV) 0417000103.D. No results for 1,3-Dinitrobenzene and 2,6-Dinitrotoluene were reported from this sequence. No further corrective action was required.

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

Approved by _____





Chain of Custody

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ALS Environmental

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 PH: (360) 577-7222

Chain-of-Custody

WORKORDER # **K1703579**

PROJECT NAME	JBLM AIA	SAMPLER	V. Sunrise Patterson	DATE	4/10/2017	PAGE	1 of 1											
PROJECT No.	TO 01B	SITE ID		TURNAROUND	21 Day	DISPOSAL	By Lab											
COMPANY NAME	Sealaska Environmental Services, LLC	PURCHASE ORDER	PO-1281AU	EPA SW846-8330 Nitroaromatics/Nitramines														
SEND REPORT TO	Aaron Vernik	BILL TO COMPANY	Sealaska Environmental Services, LLC															
ADDRESS	18743 Front Street NE, STE 201	INVOICE ATTN TO																
CITY / STATE / ZIP	Poulsbo, WA	ADDRESS																
PHONE	(425) 326-0280	CITY / STATE / ZIP																
E-MAIL	aaron.vernik@sealaska.com	PHONE																
E-MAIL		E-MAIL																
E-MAIL		E-MAIL																
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	MS/MSD											
1	AIA170410AIASP01	W	4/10/2017	8:55	2	8	NO	2										
2	AIA170410AIASP02	W	4/10/2017	11:10	2	8	NO	2										
3	AIA161101AIASP03	W	4/10/2017	9:25	2	8	NO	2										
4	AIA170410FHDS	W	4/10/2017	8:40	6	8	YES	6										
5	AIA170412IDW	W	4/12/2017	8:30	2	8	NO	2										
6	AIA17041098IAMW01	W	4/10/2017	11:55	2	8	NO	2										
7	AIA17041098IAMW02	W	4/10/2017	10:55	2	8	NO	2										
8	AIA17041098IAMW03	W	4/10/2017	9:40	2	8	NO	2										

*Time Zone: PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments: AS PER CONTRACT

QC PACKAGE (check below)
<input type="checkbox"/> LEVEL II (Standard QC)
<input type="checkbox"/> LEVEL III (Std QC + forms)
<input type="checkbox"/> LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		TOM MALAMALA	4/12/2017	11:00
RECEIVED BY		MC Delivery		
RELINQUISHED BY		MC Delivery		
RECEIVED BY		SWOLF	4/12/17	1300
RELINQUISHED BY				
RECEIVED BY				



PC KC

Cooler Receipt and Preservation Form

Client Sealaska Service Request K17 03579

Received: 4/12/17 Opened: 4/12/17 By: [Signature] Unloaded: 4/12/17 By: [Signature]

- 1. Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
- 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? 2 front + 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
0.8	0.7	0.8	0.7	-0.1	381				<input checked="" type="checkbox"/>
2.4	2.3	1.6	1.5	-0.1	375				
1.2	1.2	0.7	0.7	0	323				

- 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. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA Y N
If applicable, tissue samples were received: Frozen Partially Thawed Thawed
- 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:
A1A170410A1A SP03	A1A161101A1A SP03	time sampled / elimination

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

Notes, Discrepancies, & Resolutions: _____



Nitroaromatics and Nitramines (Explosives)

ALS Environmental—Kelso Laboratory
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Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579

**Cover Page - Organic Analysis Data Package
 Nitroaromatics and Nitramines (Explosives)**

Sample Name	Lab Code	Date Collected	Date Received
AIA170410AIASP01	K1703579-001	04/10/2017	04/12/2017
AIA170410AIASP02	K1703579-002	04/10/2017	04/12/2017
AIA161101AIASP03	K1703579-003	04/10/2017	04/12/2017
AIA170410FHDS	K1703579-004	04/10/2017	04/12/2017
AIA170412IDW	K1703579-005	04/12/2017	04/12/2017
AIA17041098IAMW01	K1703579-006	04/10/2017	04/12/2017
AIA17041098IAMW02	K1703579-007	04/10/2017	04/12/2017
AIA17041098IAMW03	K1703579-008	04/10/2017	04/12/2017
AIA170410FHDSMS	KWG1702912-3	04/10/2017	04/12/2017
AIA170410FHDSMS	KWG1702912-4	04/10/2017	04/12/2017

Analytical Results

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

Service Request: K1703579
Date Collected: 04/10/2017
Date Received: 04/12/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA170410AIASP01
Lab Code: K1703579-001
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	0.43	P	0.10	0.10	0.037	1	04/13/17	04/17/17	KWG1702912	
RDX	0.18	J	0.20	0.20	0.11	1	04/13/17	04/17/17	KWG1702912	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	04/13/17	04/17/17	KWG1702912	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	04/13/17	04/17/17	KWG1702912	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	04/13/17	04/17/17	KWG1702912	
TETRYL	ND	U	0.20	0.20	0.099	1	04/13/17	04/17/17	KWG1702912	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	04/13/17	04/17/17	KWG1702912	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	04/13/17	04/17/17	KWG1702912	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	04/13/17	04/17/17	KWG1702912	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	04/13/17	04/17/17	KWG1702912	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	04/13/17	04/17/17	KWG1702912	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	04/13/17	04/17/17	KWG1702912	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	04/13/17	04/17/17	KWG1702912	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	04/13/17	04/17/17	KWG1702912	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	04/13/17	04/17/17	KWG1702912	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	04/13/17	04/17/17	KWG1702912	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	04/13/17	04/17/17	KWG1702912	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	88	23-98	04/17/17	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1703579
Date Collected: 04/10/2017
Date Received: 04/12/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA170410AIASP02
Lab Code: K1703579-002
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	0.24	P	0.10	0.10	0.037	1	04/13/17	04/17/17	KWG1702912	
RDX	ND	U	0.20	0.20	0.11	1	04/13/17	04/17/17	KWG1702912	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	04/13/17	04/17/17	KWG1702912	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	04/13/17	04/17/17	KWG1702912	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	04/13/17	04/17/17	KWG1702912	
TETRYL	ND	U	0.20	0.20	0.099	1	04/13/17	04/17/17	KWG1702912	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	04/13/17	04/17/17	KWG1702912	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	04/13/17	04/17/17	KWG1702912	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	04/13/17	04/17/17	KWG1702912	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	04/13/17	04/17/17	KWG1702912	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	04/13/17	04/17/17	KWG1702912	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	04/13/17	04/17/17	KWG1702912	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	04/13/17	04/17/17	KWG1702912	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	04/13/17	04/17/17	KWG1702912	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	04/13/17	04/17/17	KWG1702912	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	04/13/17	04/17/17	KWG1702912	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	04/13/17	04/17/17	KWG1702912	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	79	23-98	04/17/17	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1703579
Date Collected: 04/10/2017
Date Received: 04/12/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA161101AIASP03
Lab Code: K1703579-003
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	ND	U	0.10	0.10	0.037	1	04/13/17	04/17/17	KWG1702912	
RDX	0.38	C	0.20	0.20	0.11	1	04/13/17	04/17/17	KWG1702912	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	04/13/17	04/17/17	KWG1702912	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	04/13/17	04/17/17	KWG1702912	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	04/13/17	04/17/17	KWG1702912	
TETRYL	ND	U	0.20	0.20	0.099	1	04/13/17	04/17/17	KWG1702912	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	04/13/17	04/17/17	KWG1702912	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	04/13/17	04/17/17	KWG1702912	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	04/13/17	04/17/17	KWG1702912	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	04/13/17	04/17/17	KWG1702912	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	04/13/17	04/17/17	KWG1702912	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	04/13/17	04/17/17	KWG1702912	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	04/13/17	04/17/17	KWG1702912	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	04/13/17	04/17/17	KWG1702912	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	04/13/17	04/17/17	KWG1702912	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	04/13/17	04/17/17	KWG1702912	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	04/13/17	04/17/17	KWG1702912	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	81	23-98	04/17/17	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1703579
Date Collected: 04/10/2017
Date Received: 04/12/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA170410FHDS
Lab Code: K1703579-004
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	ND	U	0.10	0.10	0.037	1	04/13/17	04/18/17	KWG1702912	
RDX	ND	U	0.20	0.20	0.11	1	04/13/17	04/18/17	KWG1702912	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	04/13/17	04/18/17	KWG1702912	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	04/13/17	04/18/17	KWG1702912	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	04/13/17	04/18/17	KWG1702912	
TETRYL	ND	U	0.20	0.20	0.099	1	04/13/17	04/18/17	KWG1702912	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	04/13/17	04/18/17	KWG1702912	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	04/13/17	04/18/17	KWG1702912	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	04/13/17	04/18/17	KWG1702912	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	04/13/17	04/18/17	KWG1702912	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	04/13/17	04/18/17	KWG1702912	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	04/13/17	04/18/17	KWG1702912	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	04/13/17	04/18/17	KWG1702912	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	04/13/17	04/18/17	KWG1702912	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	04/13/17	04/18/17	KWG1702912	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	04/13/17	04/18/17	KWG1702912	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	04/13/17	04/18/17	KWG1702912	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	76	23-98	04/18/17	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1703579
Date Collected: 04/12/2017
Date Received: 04/12/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA170412IDW
Lab Code: K1703579-005
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	0.052	JN	0.10	0.10	0.037	1	04/13/17	04/17/17	KWG1702912	
RDX	0.31	C	0.20	0.20	0.11	1	04/13/17	04/17/17	KWG1702912	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	04/13/17	04/17/17	KWG1702912	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	04/13/17	04/17/17	KWG1702912	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	04/13/17	04/17/17	KWG1702912	
TETRYL	ND	U	0.20	0.20	0.099	1	04/13/17	04/17/17	KWG1702912	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	04/13/17	04/17/17	KWG1702912	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	04/13/17	04/17/17	KWG1702912	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	04/13/17	04/17/17	KWG1702912	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	04/13/17	04/17/17	KWG1702912	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	04/13/17	04/17/17	KWG1702912	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	04/13/17	04/17/17	KWG1702912	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	04/13/17	04/17/17	KWG1702912	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	04/13/17	04/17/17	KWG1702912	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	04/13/17	04/17/17	KWG1702912	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	04/13/17	04/17/17	KWG1702912	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	04/13/17	04/17/17	KWG1702912	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	81	23-98	04/17/17	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1703579
Date Collected: 04/10/2017
Date Received: 04/12/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA17041098IAMW01
Lab Code: K1703579-006
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	ND	U	0.10	0.10	0.037	1	04/13/17	04/17/17	KWG1702912	
RDX	ND	U	0.20	0.20	0.11	1	04/13/17	04/17/17	KWG1702912	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	04/13/17	04/17/17	KWG1702912	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	04/13/17	04/17/17	KWG1702912	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	04/13/17	04/17/17	KWG1702912	
TETRYL	ND	U	0.20	0.20	0.099	1	04/13/17	04/17/17	KWG1702912	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	04/13/17	04/17/17	KWG1702912	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	04/13/17	04/17/17	KWG1702912	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	04/13/17	04/17/17	KWG1702912	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	04/13/17	04/17/17	KWG1702912	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	04/13/17	04/17/17	KWG1702912	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	04/13/17	04/17/17	KWG1702912	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	04/13/17	04/17/17	KWG1702912	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	04/13/17	04/17/17	KWG1702912	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	04/13/17	04/17/17	KWG1702912	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	04/13/17	04/17/17	KWG1702912	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	04/13/17	04/17/17	KWG1702912	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	76	23-98	04/17/17	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1703579
Date Collected: 04/10/2017
Date Received: 04/12/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA17041098IAMW02
Lab Code: K1703579-007
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	0.48	P	0.10	0.10	0.037	1	04/13/17	04/17/17	KWG1702912	
RDX	0.55	C	0.20	0.20	0.11	1	04/13/17	04/17/17	KWG1702912	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	04/13/17	04/17/17	KWG1702912	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	04/13/17	04/17/17	KWG1702912	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	04/13/17	04/17/17	KWG1702912	
TETRYL	ND	U	0.20	0.20	0.099	1	04/13/17	04/17/17	KWG1702912	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	04/13/17	04/17/17	KWG1702912	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	04/13/17	04/17/17	KWG1702912	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	04/13/17	04/17/17	KWG1702912	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	04/13/17	04/17/17	KWG1702912	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	04/13/17	04/17/17	KWG1702912	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	04/13/17	04/17/17	KWG1702912	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	04/13/17	04/17/17	KWG1702912	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	04/13/17	04/17/17	KWG1702912	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	04/13/17	04/17/17	KWG1702912	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	04/13/17	04/17/17	KWG1702912	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	04/13/17	04/17/17	KWG1702912	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	81	23-98	04/17/17	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1703579
Date Collected: 04/10/2017
Date Received: 04/12/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA17041098IAMW03
Lab Code: K1703579-008
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	ND	U	0.10	0.10	0.037	1	04/13/17	04/18/17	KWG1702912	
RDX	0.44	C	0.20	0.20	0.11	1	04/13/17	04/17/17	KWG1702912	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	04/13/17	04/17/17	KWG1702912	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	04/13/17	04/17/17	KWG1702912	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	04/13/17	04/17/17	KWG1702912	
TETRYL	ND	U	0.20	0.20	0.099	1	04/13/17	04/17/17	KWG1702912	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	04/13/17	04/17/17	KWG1702912	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	04/13/17	04/17/17	KWG1702912	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	04/13/17	04/17/17	KWG1702912	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	04/13/17	04/17/17	KWG1702912	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	04/13/17	04/17/17	KWG1702912	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	04/13/17	04/17/17	KWG1702912	
2-Nitrotoluene	ND	Ui	0.14	0.14	0.14	1	04/13/17	04/17/17	KWG1702912	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	04/13/17	04/18/17	KWG1702912	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	04/13/17	04/18/17	KWG1702912	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	04/13/17	04/17/17	KWG1702912	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	04/13/17	04/17/17	KWG1702912	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	74	23-98	04/17/17	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1703579
Date Collected: NA
Date Received: NA

Nitroaromatics and Nitramines (Explosives)

Sample Name: Method Blank
Lab Code: KWG1702912-2
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	ND	U	0.10	0.10	0.037	1	04/13/17	04/17/17	KWG1702912	
RDX	ND	U	0.20	0.20	0.11	1	04/13/17	04/17/17	KWG1702912	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	04/13/17	04/17/17	KWG1702912	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	04/13/17	04/17/17	KWG1702912	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	04/13/17	04/17/17	KWG1702912	
TETRYL	ND	U	0.20	0.20	0.099	1	04/13/17	04/17/17	KWG1702912	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	04/13/17	04/17/17	KWG1702912	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	04/13/17	04/17/17	KWG1702912	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	04/13/17	04/17/17	KWG1702912	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	04/13/17	04/17/17	KWG1702912	
2,6-Dinitrotoluene	0.060	JN	0.20	0.20	0.054	1	04/13/17	04/17/17	KWG1702912	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	04/13/17	04/17/17	KWG1702912	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	04/13/17	04/17/17	KWG1702912	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	04/13/17	04/17/17	KWG1702912	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	04/13/17	04/17/17	KWG1702912	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	04/13/17	04/17/17	KWG1702912	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	04/13/17	04/17/17	KWG1702912	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	80	23-98	04/17/17	Acceptable

Comments: _____

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

Service Request: K1703579

**Surrogate Recovery Summary
 Nitroaromatics and Nitramines (Explosives)**

Extraction Method: METHOD
Analysis Method: 8330B

Units: Percent
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>
AIA170410AIASP01	K1703579-001	88
AIA170410AIASP02	K1703579-002	79
AIA161101AIASP03	K1703579-003	81
AIA170410FHDS	K1703579-004	76
AIA170412IDW	K1703579-005	81
AIA17041098IAMW01	K1703579-006	76
AIA17041098IAMW02	K1703579-007	81
AIA17041098IAMW03	K1703579-008	74
Method Blank	KWG1702912-2	80
AIA170410FHDSMS	KWG1702912-3	80
AIA170410FHDSMS	KWG1702912-4	80
Lab Control Sample	KWG1702912-1	70

Surrogate Recovery Control Limits (%)

Sur1 = 1-Chloro-3-nitrobenzene 23-98

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 AIA/TO 01B
Sample Matrix: Water

Service Request: K1703579
Date Extracted: 04/13/2017
Date Analyzed: 04/18/2017

Matrix Spike/Duplicate Matrix Spike Summary
Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA170410FHDS
Lab Code: K1703579-004
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1702912

Analyte Name	Sample Result	AIA170410FHDSMS KWG1702912-3 Matrix Spike			AIA170410FHDSMS KWG1702912-4 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
HMX	ND	9.91	8.00	124	9.83	8.00	123	11-147	1	20
RDX	ND	9.85	8.00	123	9.76	8.00	122	10-142	1	20
1,3,5-Trinitrobenzene	ND	9.79	8.00	122	9.78	8.00	122	16-137	0	20
1,3-Dinitrobenzene	ND	9.64	8.00	120	9.62	8.00	120	26-125	0	20
3,5-Dinitroaniline	ND	9.70	8.00	121	9.62	8.00	120	30-133	1	20
TETRYL	ND	9.91	8.00	124 *	9.88	8.00	123	29-123	0	20
Nitrobenzene	ND	9.27	8.00	116	9.18	8.00	115	10-116	1	20
4-Amino-2,6-dinitrotoluene	ND	9.96	8.00	125 *	9.88	8.00	123 *	55-117	1	20
2-Amino-4,6-dinitrotoluene	ND	9.78	8.00	122 *	9.70	8.00	121 *	54-116	1	20
2,4,6-Trinitrotoluene	ND	9.86	8.00	123 *	9.78	8.00	122 *	47-118	1	20
2,6-Dinitrotoluene	ND	10.1	8.00	126 *	9.86	8.00	123 *	40-108	2	20
2,4-Dinitrotoluene	ND	9.40	8.00	117 *	9.58	8.00	120 *	50-111	2	20
2-Nitrotoluene	ND	9.26	8.00	116 *	9.23	8.00	115 *	12-110	0	20
4-Nitrotoluene	ND	9.12	8.00	114 *	9.10	8.00	114 *	16-113	0	20
3-Nitrotoluene	ND	9.22	8.00	115 *	9.20	8.00	115 *	13-109	0	20
Nitroglycerin	ND	10.2	8.00	127	10.1	8.00	127	15-136	0	20
Pentaerythritol Tetranitrate	ND	8.74	8.00	109 *	9.04	8.00	113 *	66-103	3	20

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 AIA/TO 01B
Sample Matrix: Water

Service Request: K1703579
Date Extracted: 04/13/2017
Date Analyzed: 04/17/2017

Lab Control Spike Summary
Nitroaromatics and Nitramines (Explosives)

Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1702912

Lab Control Sample
 KWG1702912-1
Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
HMX	7.66	8.00	96	11-147
RDX	7.35	8.00	92	10-142
1,3,5-Trinitrobenzene	7.02	8.00	88	16-137
1,3-Dinitrobenzene	6.94	8.00	87	26-125
3,5-Dinitroaniline	7.08	8.00	88	30-133
TETRYL	7.22	8.00	90	29-123
Nitrobenzene	6.57	8.00	82	10-116
4-Amino-2,6-dinitrotoluene	7.14	8.00	89	55-117
2-Amino-4,6-dinitrotoluene	7.07	8.00	88	54-116
2,4,6-Trinitrotoluene	6.94	8.00	87	47-118
2,6-Dinitrotoluene	7.48	8.00	94	40-108
2,4-Dinitrotoluene	6.55	8.00	82	50-111
2-Nitrotoluene	6.33	8.00	79	12-110
4-Nitrotoluene	6.27	8.00	78	16-113
3-Nitrotoluene	6.34	8.00	79	13-109
Nitroglycerin	7.78	8.00	97	15-136
Pentaerythritol Tetranitrate	6.41	8.00	80	66-103

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 AIA/TO 01B
Sample Matrix: Water

Service Request: K1703579
Date Extracted: 04/13/2017
Date Analyzed: 04/17/2017
Time Analyzed: 19:19

Method Blank Summary
Nitroaromatics and Nitramines (Explosives)

Sample Name: Method Blank **Instrument ID:** LC08
Lab Code: KWG1702912-2 **File ID:** J:\LC08\DATA\041717-254\0417000104.D
Extraction Method: METHOD **Level:** Low
Analysis Method: 8330B **Extraction Lot:** KWG1702912

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
AIA170410AIASP01	K1703579-001	J:\LC08\DATA\041717-210\0417000106.D	04/17/17	20:33
AIA161101AIASP03	K1703579-003	J:\LC08\DATA\041717-210\0417000108.D	04/17/17	21:46
AIA170412IDW	K1703579-005	J:\LC08\DATA\041717-210\0417000109.D	04/17/17	22:23
AIA17041098IAMW02	K1703579-007	J:\LC08\DATA\041717-210\0417000111.D	04/17/17	23:37

QA/QC Report

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

Service Request: K1703579
Date Extracted: 04/13/2017
Date Analyzed: 04/17/2017
Time Analyzed: 19:06

Method Blank Summary
Nitroaromatics and Nitramines (Explosives)

Sample Name: Method Blank **Instrument ID:** LC10
Lab Code: KWG1702912-2 **File ID:** J:\LC10\DATA\041717-210\0417000104.D
Extraction Method: METHOD **Level:** Low
Analysis Method: 8330B **Extraction Lot:** KWG1702912

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1702912-1	J:\LC10\DATA\041717-210\0417000105.D	04/17/17	19:42
AIA170410AIASP01	K1703579-001	J:\LC10\DATA\041717-210\0417000106.D	04/17/17	20:18
AIA170410AIASP02	K1703579-002	J:\LC10\DATA\041717-210\0417000107.D	04/17/17	20:55
AIA161101AIASP03	K1703579-003	J:\LC10\DATA\041717-210\0417000108.D	04/17/17	21:31
AIA17041098IAMW01	K1703579-006	J:\LC10\DATA\041717-210\0417000110.D	04/17/17	22:43
AIA17041098IAMW02	K1703579-007	J:\LC10\DATA\041717-210\0417000111.D	04/17/17	23:20
AIA17041098IAMW03	K1703579-008	J:\LC10\DATA\041717-210\0417000112.D	04/17/17	23:56
AIA170410FHDS	K1703579-004	J:\LC10\DATA\041717-210\0417000126.D	04/18/17	08:23
AIA170410FHDSMS	KWG1702912-3	J:\LC10\DATA\041717-210\0417000127.D	04/18/17	08:59
AIA170410FHDSMDS	KWG1702912-4	J:\LC10\DATA\041717-210\0417000128.D	04/18/17	09:35

QA/QC Report

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

Service Request: K1703579
Date Extracted: 04/13/2017
Date Analyzed: 04/17/2017
Time Analyzed: 19:06

Method Blank Summary
Nitroaromatics and Nitramines (Explosives)

Sample Name: Method Blank **Instrument ID:** LC10
Lab Code: KWG1702912-2 **File ID:** J:\LC10\DATA\041717-254\0417000104.D
Extraction Method: METHOD **Level:** Low
Analysis Method: 8330B **Extraction Lot:** KWG1702912

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1702912-1	J:\LC10\DATA\041717-254\0417000105.D	04/17/17	19:42
AIA170410AIASP01	K1703579-001	J:\LC10\DATA\041717-254\0417000106.D	04/17/17	20:18
AIA170410AIASP01	K1703579-001	J:\LC08\DATA\041717-254\0417000106.D	04/17/17	20:33
AIA170410AIASP02	K1703579-002	J:\LC10\DATA\041717-254\0417000107.D	04/17/17	20:55
AIA170410AIASP02	K1703579-002	J:\LC08\DATA\041717-254\0417000107.D	04/17/17	21:09
AIA161101AIASP03	K1703579-003	J:\LC10\DATA\041717-254\0417000108.D	04/17/17	21:31
AIA161101AIASP03	K1703579-003	J:\LC08\DATA\041717-254\0417000108.D	04/17/17	21:46
AIA170412IDW	K1703579-005	J:\LC10\DATA\041717-254\0417000109.D	04/17/17	22:07
AIA170412IDW	K1703579-005	J:\LC08\DATA\041717-254\0417000109.D	04/17/17	22:23
AIA17041098IAMW01	K1703579-006	J:\LC10\DATA\041717-254\0417000110.D	04/17/17	22:43
AIA17041098IAMW01	K1703579-006	J:\LC08\DATA\041717-254\0417000110.D	04/17/17	23:00
AIA17041098IAMW02	K1703579-007	J:\LC10\DATA\041717-254\0417000111.D	04/17/17	23:20
AIA17041098IAMW02	K1703579-007	J:\LC08\DATA\041717-254\0417000111.D	04/17/17	23:37
AIA17041098IAMW03	K1703579-008	J:\LC10\DATA\041717-254\0417000112.D	04/17/17	23:56
AIA17041098IAMW03	K1703579-008	J:\LC08\DATA\041717-254\0417000112.D	04/18/17	00:14
AIA170410FHDS	K1703579-004	J:\LC10\DATA\041717-254\0417000126.D	04/18/17	08:23
AIA170410FHDS	K1703579-004	J:\LC08\DATA\041717-254\0417000126.D	04/18/17	08:50
AIA170410FHDSMS	KWG1702912-3	J:\LC10\DATA\041717-254\0417000127.D	04/18/17	08:59
AIA170410FHDSMS	KWG1702912-4	J:\LC10\DATA\041717-254\0417000128.D	04/18/17	09:35

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Calibration Date: 02/09/2017

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL15185
Instrument ID: LC08

Column: Ultra Aromax 5u

Level ID	File ID	Level ID	File ID
A	J:\LC08\Data\020917XC-210\0209000104.D	G	J:\LC08\Data\020917XC-210\0209000110.D
B	J:\LC08\Data\020917XC-210\0209000105.D	H	J:\LC08\Data\020917XC-210\0209000111.D
C	J:\LC08\Data\020917XC-210\0209000106.D	I	J:\LC08\Data\020917XC-210\0209000112.D
D	J:\LC08\Data\020917XC-210\0209000107.D	J	J:\LC08\Data\020917XC-210\0209000113.D
E	J:\LC08\Data\020917XC-210\0209000108.D		
F	J:\LC08\Data\020917XC-210\0209000109.D		

Analyte Name	Level ID			Level ID			Level ID			Level ID			Level ID		
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF
Nitroglycerin				B	50	20500	C	100	19800	D	200	19900	E	500	22500
	F	1000	21400	G	2000	21300	H	5000	20900	I	10000	21000	J	20000	20800
Pentaerythritol Tetranitrate	A	20	84600	B	50	72900	C	100	85500	D	200	87800	E	500	84300
	F	1000	82500	G	2000	81300	H	5000	81100	I	10000	80600	J	20000	78900
1-Chloro-3-nitrobenzene				B	50	61200	C	100	76800	D	200	67800	E	500	71900
	F	1000	69900	G	2000	69700	H	5000	70300	I	10000	69000	J	20000	69400

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Calibration Date: 02/09/2017

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL15185
Instrument ID: LC08

Column: Ultra Aromax 5u

Analyte Name	Compound Type	Calibration Evaluation				
		Fit Type	Eval.	Eval. Result	Q	Control Criteria
Nitroglycerin	MS	AverageRF	% RSD	4.0		≤ 15
Pentaerythritol Tetranitrate	MS	AverageRF	% RSD	5.1		≤ 15
1-Chloro-3-nitrobenzene	SURR	AverageRF	% RSD	5.8		≤ 15

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Calibration Date: 02/09/2017
Date Analyzed: 02/09/2017

Second Source Calibration Verification
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration ID: CAL15185
Units: ug/L

File ID: J:\LC08\Data\020917XC-210\0209000115.D

Column ID: Ultra Aromax 5u

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Nitroglycerin	1000	990	20900	20800	-1	NA	± 20 %	AverageRF
Pentaerythritol Tetranitrate	1000	950	81900	77500	-5	NA	± 20 %	AverageRF

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

† SPCC Compound

‡ CCC Compound

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Calibration Date: 02/09/2017

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL15192
Instrument ID: LC08

Column: Ultra Aromax 5u

Level ID	File ID	Level ID	File ID
A	J:\LC08\Data\020917XC-254\0209000104.D	G	J:\LC08\Data\020917XC-254\0209000110.D
B	J:\LC08\Data\020917XC-254\0209000105.D	H	J:\LC08\Data\020917XC-254\0209000111.D
C	J:\LC08\Data\020917XC-254\0209000106.D	I	J:\LC08\Data\020917XC-254\0209000112.D
D	J:\LC08\Data\020917XC-254\0209000107.D	J	J:\LC08\Data\020917XC-254\0209000113.D
E	J:\LC08\Data\020917XC-254\0209000108.D		
F	J:\LC08\Data\020917XC-254\0209000109.D		

Analyte Name	Level ID			Level ID			Level ID			Level ID			Level ID		
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF
HMX	A	20	14700	B	50	15600	C	100	15600	D	200	16000	E	500	16000
	F	1000	15800	G	2000	15700	H	5000	15900	I	10000	15600	J	20000	15100
RDX	A	20	22600	B	50	19500	C	100	18200	D	200	18300	E	500	18400
	F	1000	18300	G	2000	17800	H	5000	17900	I	10000	17700	J	20000	17300
1,3,5-Trinitrobenzene	A	20	48500	B	50	44000	C	100	41500	D	200	40700	E	500	42200
	F	1000	41500	G	2000	40800	H	5000	41000	I	10000	40900	J	20000	40300
1,3-Dinitrobenzene	A	20	56400	B	50	58700	C	100	56300	D	200	56200	E	500	57200
	F	1000	55600	G	2000	54800	H	5000	55200	I	10000	55200	J	20000	53900
3,5-Dinitroaniline	A	20	48200	B	50	46500	C	100	46400	D	200	46300	E	500	47100
	F	1000	46800	G	2000	46100	H	5000	46400	I	10000	45900	J	20000	45100
TETRYL	A	20	31100	B	50	29000	C	100	30300	D	200	28600	E	500	28500
	F	1000	28700	G	2000	27900	H	5000	29300	I	10000	30600	J	20000	29600
Nitrobenzene	A	20	37200	B	50	38600	C	100	37100	D	200	36900	E	500	37800
	F	1000	37200	G	2000	36900	H	5000	37100	I	10000	37000	J	20000	36200
4-Amino-2,6-dinitrotoluene	A	20	32600	B	50	32800	C	100	31600	D	200	32000	E	500	32400
	F	1000	32000	G	2000	31500	H	5000	31500	I	10000	31400	J	20000	30700
2-Amino-4,6-dinitrotoluene	A	20	44500	B	50	43000	C	100	42100	D	200	42100	E	500	42600
	F	1000	42400	G	2000	41600	H	5000	41700	I	10000	41400	J	20000	40600
2,4,6-Trinitrotoluene	A	20	41000	B	50	38000	C	100	38800	D	200	38800	E	500	39100
	F	1000	39000	G	2000	38400	H	5000	38700	I	10000	38600	J	20000	37600
2,6-Dinitrotoluene	A	20	24600	B	50	24300	C	100	24300	D	200	24400	E	500	25100
	F	1000	25000	G	2000	24500	H	5000	24500	I	10000	24000	J	20000	24000
2,4-Dinitrotoluene	A	20	62500	B	50	55700	C	100	51800	D	200	51700	E	500	52000
	F	1000	51300	G	2000	50500	H	5000	50700	I	10000	50400	J	20000	49600
2-Nitrotoluene	A	20	23700	B	50	23500	C	100	23600	D	200	23200	E	500	23900
	F	1000	23600	G	2000	23400	H	5000	23700	I	10000	23700	J	20000	23300
4-Nitrotoluene	A	20	27200	B	50	24000	C	100	22800	D	200	22300	E	500	23500
	F	1000	22800	G	2000	23000	H	5000	22300	I	10000	22600	J	20000	22600

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

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Calibration Date: 02/09/2017

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL15192
Instrument ID: LC08

Column: Ultra Aromax 5u

Analyte Name	Level			Level			Level			Level			Level		
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF
3-Nitrotoluene	A	20	28300	B	50	28300	C	100	28000	D	200	27900	E	500	28300
	F	1000	27900	G	2000	27900	H	5000	27700	I	10000	27900	J	20000	27200
1-Chloro-3-nitrobenzene	A	20	25700	B	50	26700	C	100	26600	D	200	26100	E	500	26500
	F	1000	26700	G	2000	26600	H	5000	26800	I	10000	25800	J	20000	25700

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

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Calibration Date: 02/09/2017

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL15192
Instrument ID: LC08

Column: Ultra Aromax 5u

Analyte Name	Compound Type	Calibration Evaluation				
		Fit Type	Eval.	Eval. Result	Q	Control Criteria
HMX	MS	AverageRF	% RSD	2.5		≤ 15
RDX	MS	AverageRF	% RSD	8.2		≤ 15
1,3,5-Trinitrobenzene	MS	AverageRF	% RSD	5.9		≤ 15
1,3-Dinitrobenzene	MS	AverageRF	% RSD	2.4		≤ 15
3,5-Dinitroaniline	MS	AverageRF	% RSD	1.7		≤ 15
TETRYL	MS	AverageRF	% RSD	3.5		≤ 15
Nitrobenzene	MS	AverageRF	% RSD	1.7		≤ 15
4-Amino-2,6-dinitrotoluene	MS	AverageRF	% RSD	2.1		≤ 15
2-Amino-4,6-dinitrotoluene	MS	AverageRF	% RSD	2.5		≤ 15
2,4,6-Trinitrotoluene	MS	AverageRF	% RSD	2.3		≤ 15
2,6-Dinitrotoluene	MS	AverageRF	% RSD	1.5		≤ 15
2,4-Dinitrotoluene	MS	AverageRF	% RSD	7.3		≤ 15
2-Nitrotoluene	MS	AverageRF	% RSD	0.9		≤ 15
4-Nitrotoluene	MS	AverageRF	% RSD	6.3		≤ 15
3-Nitrotoluene	MS	AverageRF	% RSD	1.2		≤ 15
1-Chloro-3-nitrobenzene	SURR	AverageRF	% RSD	1.7		≤ 15

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Calibration Date: 02/09/2017
Date Analyzed: 02/09/2017

Second Source Calibration Verification
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration ID: CAL15192
Units: ug/L

File ID: J:\LC08\Data\020917XC-254\0209000115.D

Column ID: Ultra Aromax 5u

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	970	15600	15200	-3	NA	± 20 %	AverageRF
RDX	1000	900	18600	16800	-10	NA	± 20 %	AverageRF
1,3,5-Trinitrobenzene	1000	910	42100	38500	-9	NA	± 20 %	AverageRF
1,3-Dinitrobenzene	1000	920	55900	51400	-8	NA	± 20 %	AverageRF
3,5-Dinitroaniline	1000	930	46500	43000	-7	NA	± 20 %	AverageRF
TETRYL	1000	910	29400	26700	-9	NA	± 20 %	AverageRF
Nitrobenzene	1000	930	37200	34500	-7	NA	± 20 %	AverageRF
4-Amino-2,6-dinitrotoluene	1000	920	31900	29300	-8	NA	± 20 %	AverageRF
2-Amino-4,6-dinitrotoluene	1000	910	42200	38600	-9	NA	± 20 %	AverageRF
2,4,6-Trinitrotoluene	1000	920	38800	35600	-8	NA	± 20 %	AverageRF
2,6-Dinitrotoluene	1000	980	24500	24100	-2	NA	± 20 %	AverageRF
2,4-Dinitrotoluene	1000	910	52600	47700	-9	NA	± 20 %	AverageRF
2-Nitrotoluene	1000	930	23600	21900	-7	NA	± 20 %	AverageRF
4-Nitrotoluene	1000	940	23300	22000	-6	NA	± 20 %	AverageRF
3-Nitrotoluene	1000	900	27900	25200	-10	NA	± 20 %	AverageRF

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

† SPCC Compound

‡ CCC Compound

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Calibration Date: 12/07/2016

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL15062
Instrument ID: LC10

Column: Synergi Hydro R

Level ID	File ID	Level ID	File ID
A	J:\LC10\Data\120716_8330B-254\1207000704.D	G	J:\LC10\Data\120716_8330B-254\1207000710.D
B	J:\LC10\Data\120716_8330B-254\1207000705.D	H	J:\LC10\Data\120716_8330B-254\1207000711.D
C	J:\LC10\Data\120716_8330B-254\1207000706.D	I	J:\LC10\Data\120716_8330B-254\1207000712.D
D	J:\LC10\Data\120716_8330B-254\1207000707.D	J	J:\LC10\Data\120716_8330B-254\1207000713.D
E	J:\LC10\Data\120716_8330B-254\1207000708.D		
F	J:\LC10\Data\120716_8330B-254\1207000709.D		

Analyte Name	Level ID			Level ID			Level ID			Level ID			Level ID		
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF
HMX	A	20	11600	B	50	11800	C	100	12200	D	200	12200	E	500	12100
	F	1000	11900	G	2000	11900	H	5000	12200	I	10000	11700	J	20000	12100
RDX	A	20	21000	B	50	19600	C	100	19900	D	200	19600	E	500	20000
	F	1000	19600	G	2000	19500	H	5000	20100	I	10000	19400	J	20000	20100
1,3,5-Trinitrobenzene	A	20	45400	B	50	45500	C	100	44300	D	200	44400	E	500	45100
	F	1000	44300	G	2000	43800	H	5000	45200	I	10000	43600	J	20000	45000
1,3-Dinitrobenzene	A	20	62900	B	50	61400	C	100	59600	D	200	60200	E	500	60600
	F	1000	59300	G	2000	58900	H	5000	60800	I	10000	58500	J	20000	60700
3,5-Dinitroaniline	A	20	48800	B	50	47600	C	100	47700	D	200	47400	E	500	48300
	F	1000	47200	G	2000	46800	H	5000	48600	I	10000	46700	J	20000	48400
TETRYL	A	20	33700	B	50	33500	C	100	33500	D	200	33600	E	500	33600
	F	1000	33100	G	2000	32700	H	5000	33800	I	10000	32900	J	20000	33600
Nitrobenzene	A	20	39400	B	50	39000	C	100	38300	D	200	38200	E	500	39000
	F	1000	38300	G	2000	38100	H	5000	39300	I	10000	37800	J	20000	38800
4-Amino-2,6-dinitrotoluene	A	20	26900	B	50	30700	C	100	29700	D	200	29600	E	500	30000
	F	1000	29600	G	2000	29400	H	5000	30200	I	10000	29100	J	20000	30100
2-Amino-4,6-dinitrotoluene	A	20	42300	B	50	41700	C	100	41700	D	200	42500	E	500	42600
	F	1000	41800	G	2000	40900	H	5000	42500	I	10000	41100	J	20000	42600
2,4,6-Trinitrotoluene	A	20	39900	B	50	42000	C	100	41400	D	200	42200	E	500	42400
	F	1000	41600	G	2000	41100	H	5000	42500	I	10000	41000	J	20000	42500
2,6-Dinitrotoluene	A	20	23500	B	50	25600	C	100	23800	D	200	24500	E	500	25100
	F	1000	24500	G	2000	24000	H	5000	24800	I	10000	24000	J	20000	24900
2,4-Dinitrotoluene	A	20	57600	B	50	59100	C	100	58900	D	200	59000	E	500	59900
	F	1000	58900	G	2000	58800	H	5000	60800	I	10000	59200	J	20000	60100
2-Nitrotoluene	A	20	17500	B	50	18200	C	100	18000	D	200	18100	E	500	18200
	F	1000	17900	G	2000	17600	H	5000	18400	I	10000	17600	J	20000	18100
4-Nitrotoluene	A	20	16000	B	50	16100	C	100	16400	D	200	16000	E	500	16000
	F	1000	15600	G	2000	15400	H	5000	16000	I	10000	15300	J	20000	15800

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

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Calibration Date: 12/07/2016

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL15062
Instrument ID: LC10

Column: Synergi Hydro R

Analyte Name	Level			Level			Level			Level			Level		
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF
3-Nitrotoluene	A	20	20600	B	50	19600	C	100	20500	D	200	20100	E	500	20300
	F	1000	20300	G	2000	19700	H	5000	20500	I	10000	19600	J	20000	20200
1-Chloro-3-nitrobenzene	A	20	23100	B	50	22100	C	100	22200	D	200	21800	E	500	21800
	F	1000	21400	G	2000	21100	H	5000	22000	I	10000	18800	J	20000	21800

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

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Calibration Date: 12/07/2016

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL15062
Instrument ID: LC10

Column: Synergi Hydro R

Analyte Name	Compound Type	Calibration Evaluation				
		Fit Type	Eval.	Eval. Result	Q	Control Criteria
HMX	MS	AverageRF	% RSD	1.7		≤ 15
RDX	MS	AverageRF	% RSD	2.4		≤ 15
1,3,5-Trinitrobenzene	MS	AverageRF	% RSD	1.5		≤ 15
1,3-Dinitrobenzene	MS	AverageRF	% RSD	2.2		≤ 15
3,5-Dinitroaniline	MS	AverageRF	% RSD	1.6		≤ 15
TETRYL	MS	AverageRF	% RSD	1.2		≤ 15
Nitrobenzene	MS	AverageRF	% RSD	1.4		≤ 15
4-Amino-2,6-dinitrotoluene	MS	AverageRF	% RSD	3.5		≤ 15
2-Amino-4,6-dinitrotoluene	MS	AverageRF	% RSD	1.5		≤ 15
2,4,6-Trinitrotoluene	MS	AverageRF	% RSD	2.0		≤ 15
2,6-Dinitrotoluene	MS	AverageRF	% RSD	2.6		≤ 15
2,4-Dinitrotoluene	MS	AverageRF	% RSD	1.5		≤ 15
2-Nitrotoluene	MS	AverageRF	% RSD	1.7		≤ 15
4-Nitrotoluene	MS	AverageRF	% RSD	2.2		≤ 15
3-Nitrotoluene	MS	AverageRF	% RSD	1.8		≤ 15
1-Chloro-3-nitrobenzene	SURR	AverageRF	% RSD	5.1		≤ 15

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Calibration Date: 12/07/2016
Date Analyzed: 12/08/2016

Second Source Calibration Verification
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration ID: CAL15062
Units: ug/L

File ID: J:\LC10\Data\120716_8330B-254\1207000715.D

Column ID: Synergi Hydro R

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
HMX	10000	8900	12000	10700	-11	NA	± 20 %	AverageRF
RDX	10000	8900	19900	17600	-11	NA	± 20 %	AverageRF
1,3,5-Trinitrobenzene	10000	8900	44700	39900	-11	NA	± 20 %	AverageRF
1,3-Dinitrobenzene	10000	8900	60300	53500	-11	NA	± 20 %	AverageRF
3,5-Dinitroaniline	10000	9000	47700	42900	-10	NA	± 20 %	AverageRF
TETRYL	10000	9000	33400	29900	-10	NA	± 20 %	AverageRF
Nitrobenzene	10000	9000	38600	34800	-10	NA	± 20 %	AverageRF
4-Amino-2,6-dinitrotoluene	10000	9000	29500	26700	-10	NA	± 20 %	AverageRF
2-Amino-4,6-dinitrotoluene	10000	8900	42000	37500	-11	NA	± 20 %	AverageRF
2,4,6-Trinitrotoluene	10000	9100	41700	37700	-9	NA	± 20 %	AverageRF
2,6-Dinitrotoluene	10000	9100	24500	22400	-9	NA	± 20 %	AverageRF
2,4-Dinitrotoluene	10000	9000	59200	53300	-10	NA	± 20 %	AverageRF
2-Nitrotoluene	10000	9000	18000	16100	-10	NA	± 20 %	AverageRF
4-Nitrotoluene	10000	8900	15900	14200	-11	NA	± 20 %	AverageRF
3-Nitrotoluene	10000	8800	20100	17700	-12	NA	± 20 %	AverageRF

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

† SPCC Compound

‡ CCC Compound

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Calibration Date: 12/07/2016

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL15063
Instrument ID: LC10

Column: Synergi Hydro 4

Level ID	File ID	Level ID	File ID
A	J:\LC10\Data\120716_8330B-210\1207000705.D	F	J:\LC10\Data\120716_8330B-210\1207000710.D
B	J:\LC10\Data\120716_8330B-210\1207000706.D	G	J:\LC10\Data\120716_8330B-210\1207000711.D
C	J:\LC10\Data\120716_8330B-210\1207000707.D	H	J:\LC10\Data\120716_8330B-210\1207000712.D
D	J:\LC10\Data\120716_8330B-210\1207000708.D	I	J:\LC10\Data\120716_8330B-210\1207000713.D
E	J:\LC10\Data\120716_8330B-210\1207000709.D		

Analyte Name	Level			Level			Level			Level			Level		
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF
Nitroglycerin				B	100	20200	C	200	17500	D	500	22500	E	1000	21500
	F	2000	21600	G	5000	21700	H	10000	20500	I	20000	21200			
Pentaerythritol Tetranitrate				B	100	14800	C	200	18800	D	500	18000	E	1000	18000
	F	2000	17800	G	5000	18000	H	10000	17300	I	20000	18000			
1-Chloro-3-nitrobenzene	A	50	64300	B	100	56800	C	200	57700	D	500	57100	E	1000	55000
	F	2000	56200	G	5000	57700	H	10000	49600	I	20000	57300			

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Calibration Date: 12/07/2016

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL15063
Instrument ID: LC10

Column: Synergi Hydro 4

Analyte Name	Compound Type	Calibration Evaluation				Control Criteria
		Fit Type	Eval.	Eval. Result	Q	
Nitroglycerin	MS	AverageRF	% RSD	7.2		≤ 15
Pentaerythritol Tetranitrate	MS	AverageRF	% RSD	6.8		≤ 15
1-Chloro-3-nitrobenzene	SURR	AverageRF	% RSD	6.7		≤ 15

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Calibration Date: 12/07/2016
Date Analyzed: 12/08/2016

Second Source Calibration Verification
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration ID: CAL15063
Units: ug/L

File ID: J:\LC10\Data\120716_8330B-210\1207000715.D

Column ID: Synergi Hydro 4

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Nitroglycerin	10000	9300	20800	19400	-7	NA	± 20 %	AverageRF
Pentaerythritol Tetranitrate	10000	9000	17600	15900	-10	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: JBLM AIA/TO 01B

Service Request: K1703579
Date Analyzed: 04/17/2017

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 12/07/2016
Calibration ID: CAL15062
Analysis Lot: KWG1703200
Units: ug/L
Column ID: Synergi Hydro R

File ID: J:\LC10\DATA\041717-254\0417000103.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	1100	12000	12600	5	NA	± 20	AverageRF
RDX	1000	1000	19900	20700	4	NA	± 20	AverageRF
1,3,5-Trinitrobenzene	1000	1100	44700	47100	5	NA	± 20	AverageRF
1,3-Dinitrobenzene	1000	1000	60300	62800	4	NA	± 20	AverageRF
3,5-Dinitroaniline	1000	1000	47700	49900	4	NA	± 20	AverageRF
TETRYL	1000	1000	33400	35000	5	NA	± 20	AverageRF
Nitrobenzene	1000	1000	38600	40000	4	NA	± 20	AverageRF
4-Amino-2,6-dinitrotoluene	1000	1100	29500	31200	6	NA	± 20	AverageRF
2-Amino-4,6-dinitrotoluene	1000	1000	42000	43700	4	NA	± 20	AverageRF
2,4,6-Trinitrotoluene	1000	1000	41700	43400	4	NA	± 20	AverageRF
2,6-Dinitrotoluene	1000	1100	24500	25700	5	NA	± 20	AverageRF
2,4-Dinitrotoluene	1000	1100	59200	62200	5	NA	± 20	AverageRF
2-Nitrotoluene	1000	1000	18000	18800	5	NA	± 20	AverageRF
4-Nitrotoluene	1000	1000	15900	16400	3	NA	± 20	AverageRF
3-Nitrotoluene	1000	1000	20100	21000	4	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	990	21600	21400	-1	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Date Analyzed: 04/17/2017

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 12/07/2016
Calibration ID: CAL15063
Analysis Lot: KWG1703783
Units: ug/L
Column ID: Synergi Hydro 4

File ID: J:\LC10\DATA\041717-210\0417000103.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Nitroglycerin	1000	1100	20800	22400	7	NA	± 20	AverageRF
Pentaerythritol Tetranitrate	1000	1000	17600	17700	0	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1000	56900	57900	2	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Date Analyzed: 04/17/2017

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 02/09/2017
Calibration ID: CAL15192
Analysis Lot: KWG1703405
Units: ug/L

File ID: J:\LC08\DATA\041717-254\0417000103.D

Column ID: Ultra Aromax 5u

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	1000	15600	15500	0	NA	± 20	AverageRF
RDX	1000	940	18600	17400	-6	NA	± 20	AverageRF
1,3,5-Trinitrobenzene	1000	970	42100	41000	-3	NA	± 20	AverageRF
1,3-Dinitrobenzene	1000	1400	55900	78000	39 *	NA	± 20	AverageRF
3,5-Dinitroaniline	1000	970	46500	45300	-3	NA	± 20	AverageRF
TETRYL	1000	1000	29400	29700	1	NA	± 20	AverageRF
Nitrobenzene	1000	970	37200	36200	-3	NA	± 20	AverageRF
4-Amino-2,6-dinitrotoluene	1000	970	31900	30800	-3	NA	± 20	AverageRF
2-Amino-4,6-dinitrotoluene	1000	970	42200	40700	-3	NA	± 20	AverageRF
2,4,6-Trinitrotoluene	1000	940	38800	36600	-6	NA	± 20	AverageRF
2,6-Dinitrotoluene	1000	3200	24500	78000	219 *	NA	± 20	AverageRF
2,4-Dinitrotoluene	1000	940	52600	49400	-6	NA	± 20	AverageRF
2-Nitrotoluene	1000	990	23600	23400	-1	NA	± 20	AverageRF
4-Nitrotoluene	1000	980	23300	22800	-2	NA	± 20	AverageRF
3-Nitrotoluene	1000	970	27900	27000	-3	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	910	26300	24000	-9	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Date Analyzed: 04/17/2017

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 02/09/2017
Calibration ID: CAL15185
Analysis Lot: KWG1703784
Units: ug/L
Column ID: Ultra Aromax 5u

File ID: J:\LC08\DATA\041717-210\0417000103.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Nitroglycerin	1000	1100	20900	23200	11	NA	± 20	AverageRF
Pentaerythritol Tetranitrate	1000	980	81900	80600	-2	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1000	69600	71800	3	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Date Analyzed: 04/18/2017

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 12/07/2016
Calibration ID: CAL15062
Analysis Lot: KWG1703200
Units: ug/L
Column ID: Synergi Hydro R

File ID: J:\LC10\DATA\041717-254\0417000113.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	1100	12000	12600	5	NA	± 20	AverageRF
RDX	1000	1000	19900	20700	4	NA	± 20	AverageRF
1,3,5-Trinitrobenzene	1000	1100	44700	47200	6	NA	± 20	AverageRF
1,3-Dinitrobenzene	1000	1000	60300	62700	4	NA	± 20	AverageRF
3,5-Dinitroaniline	1000	1000	47700	49800	4	NA	± 20	AverageRF
TETRYL	1000	1000	33400	34400	3	NA	± 20	AverageRF
Nitrobenzene	1000	1000	38600	39800	3	NA	± 20	AverageRF
4-Amino-2,6-dinitrotoluene	1000	1100	29500	31300	6	NA	± 20	AverageRF
2-Amino-4,6-dinitrotoluene	1000	1000	42000	43600	4	NA	± 20	AverageRF
2,4,6-Trinitrotoluene	1000	1000	41700	43400	4	NA	± 20	AverageRF
2,6-Dinitrotoluene	1000	1100	24500	27200	11	NA	± 20	AverageRF
2,4-Dinitrotoluene	1000	1000	59200	61000	3	NA	± 20	AverageRF
2-Nitrotoluene	1000	1000	18000	18900	5	NA	± 20	AverageRF
4-Nitrotoluene	1000	1100	15900	16800	6	NA	± 20	AverageRF
3-Nitrotoluene	1000	1100	20100	22900	14	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1000	21600	21700	0	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Date Analyzed: 04/18/2017

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 12/07/2016
Calibration ID: CAL15063
Analysis Lot: KWG1703783
Units: ug/L
Column ID: Synergi Hydro 4

File ID: J:\LC10\DATA\041717-210\0417000113.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Nitroglycerin	1000	1100	20800	22400	7	NA	± 20	AverageRF
Pentaerythritol Tetranitrate	1000	1000	17600	18200	3	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	990	56900	56500	-1	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Date Analyzed: 04/18/2017

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 02/09/2017
Calibration ID: CAL15192
Analysis Lot: KWG1703405
Units: ug/L
Column ID: Ultra Aromax 5u

File ID: J:\LC08\DATA\041717-254\0417000113.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	980	15600	15300	-2	NA	± 20	AverageRF
RDX	1000	950	18600	17600	-5	NA	± 20	AverageRF
1,3,5-Trinitrobenzene	1000	980	42100	41300	-2	NA	± 20	AverageRF
1,3-Dinitrobenzene	1000	1000	55900	56300	1	NA	± 20	AverageRF
3,5-Dinitroaniline	1000	970	46500	45200	-3	NA	± 20	AverageRF
TETRYL	1000	1000	29400	29400	0	NA	± 20	AverageRF
Nitrobenzene	1000	980	37200	36300	-2	NA	± 20	AverageRF
4-Amino-2,6-dinitrotoluene	1000	970	31900	30900	-3	NA	± 20	AverageRF
2-Amino-4,6-dinitrotoluene	1000	960	42200	40700	-4	NA	± 20	AverageRF
2,4,6-Trinitrotoluene	1000	930	38800	36100	-7	NA	± 20	AverageRF
2,6-Dinitrotoluene	1000	950	24500	23300	-5	NA	± 20	AverageRF
2,4-Dinitrotoluene	1000	940	52600	49600	-6	NA	± 20	AverageRF
2-Nitrotoluene	1000	970	23600	22900	-3	NA	± 20	AverageRF
4-Nitrotoluene	1000	1000	23300	24100	4	NA	± 20	AverageRF
3-Nitrotoluene	1000	960	27900	26900	-4	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1000	26300	26400	0	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Date Analyzed: 04/18/2017

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 02/09/2017
Calibration ID: CAL15185
Analysis Lot: KWG1703784
Units: ug/L
Column ID: Ultra Aromax 5u

File ID: J:\LC08\DATA\041717-210\0417000113.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Nitroglycerin	1000	990	20900	20700	-1	NA	± 20	AverageRF
Pentaerythritol Tetranitrate	1000	1000	81900	81600	0	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1000	69600	69400	0	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Date Analyzed: 04/18/2017

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 12/07/2016
Calibration ID: CAL15062
Analysis Lot: KWG1703200
Units: ug/L
Column ID: Synergi Hydro R

File ID: J:\LC10\DATA\041717-254\0417000124.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	1100	12000	12700	6	NA	± 20	AverageRF
RDX	1000	1000	19900	20800	5	NA	± 20	AverageRF
1,3,5-Trinitrobenzene	1000	1100	44700	47600	7	NA	± 20	AverageRF
1,3-Dinitrobenzene	1000	1000	60300	63100	5	NA	± 20	AverageRF
3,5-Dinitroaniline	1000	1100	47700	50500	6	NA	± 20	AverageRF
TETRYL	1000	1000	33400	34300	3	NA	± 20	AverageRF
Nitrobenzene	1000	1000	38600	39700	3	NA	± 20	AverageRF
4-Amino-2,6-dinitrotoluene	1000	1100	29500	31200	6	NA	± 20	AverageRF
2-Amino-4,6-dinitrotoluene	1000	1100	42000	44200	5	NA	± 20	AverageRF
2,4,6-Trinitrotoluene	1000	1000	41700	43600	5	NA	± 20	AverageRF
2,6-Dinitrotoluene	1000	1200	24500	28300	16	NA	± 20	AverageRF
2,4-Dinitrotoluene	1000	1000	59200	61100	3	NA	± 20	AverageRF
2-Nitrotoluene	1000	1100	18000	19100	6	NA	± 20	AverageRF
4-Nitrotoluene	1000	1200	15900	18400	16	NA	± 20	AverageRF
3-Nitrotoluene	1000	1100	20100	22800	13	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1000	21600	21600	0	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Date Analyzed: 04/18/2017

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 12/07/2016
Calibration ID: CAL15063
Analysis Lot: KWG1703783
Units: ug/L
Column ID: Synergi Hydro 4

File ID: J:\LC10\DATA\041717-210\0417000124.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Nitroglycerin	1000	1000	20800	21000	1	NA	± 20	AverageRF
Pentaerythritol Tetranitrate	1000	1000	17600	18300	4	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1000	56900	58800	3	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Date Analyzed: 04/18/2017

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 02/09/2017
Calibration ID: CAL15192
Analysis Lot: KWG1703405
Units: ug/L

File ID: J:\LC08\DATA\041717-254\0417000124.D

Column ID: Ultra Aromax 5u

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	1000	15600	15600	0	NA	± 20	AverageRF
RDX	1000	940	18600	17400	-6	NA	± 20	AverageRF
1,3,5-Trinitrobenzene	1000	970	42100	40800	-3	NA	± 20	AverageRF
1,3-Dinitrobenzene	1000	990	55900	55500	-1	NA	± 20	AverageRF
3,5-Dinitroaniline	1000	980	46500	45500	-2	NA	± 20	AverageRF
TETRYL	1000	1000	29400	29200	0	NA	± 20	AverageRF
Nitrobenzene	1000	980	37200	36500	-2	NA	± 20	AverageRF
4-Amino-2,6-dinitrotoluene	1000	980	31900	31100	-2	NA	± 20	AverageRF
2-Amino-4,6-dinitrotoluene	1000	980	42200	41200	-2	NA	± 20	AverageRF
2,4,6-Trinitrotoluene	1000	960	38800	37200	-4	NA	± 20	AverageRF
2,6-Dinitrotoluene	1000	950	24500	23300	-5	NA	± 20	AverageRF
2,4-Dinitrotoluene	1000	950	52600	49800	-5	NA	± 20	AverageRF
2-Nitrotoluene	1000	990	23600	23300	-1	NA	± 20	AverageRF
4-Nitrotoluene	1000	950	23300	22200	-5	NA	± 20	AverageRF
3-Nitrotoluene	1000	970	27900	27000	-3	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1000	26300	26700	2	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Date Analyzed: 04/18/2017

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 12/07/2016
Calibration ID: CAL15062
Analysis Lot: KWG1703200
Units: ug/L
Column ID: Synergi Hydro R

File ID: J:\LC10\DATA\041717-254\0417000135.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	1100	12000	12800	7	NA	± 20	AverageRF
RDX	1000	1100	19900	20900	5	NA	± 20	AverageRF
1,3,5-Trinitrobenzene	1000	1100	44700	48200	8	NA	± 20	AverageRF
1,3-Dinitrobenzene	1000	1000	60300	63000	5	NA	± 20	AverageRF
3,5-Dinitroaniline	1000	1000	47700	49900	5	NA	± 20	AverageRF
TETRYL	1000	1000	33400	34100	2	NA	± 20	AverageRF
Nitrobenzene	1000	1000	38600	39800	3	NA	± 20	AverageRF
4-Amino-2,6-dinitrotoluene	1000	1100	29500	31500	7	NA	± 20	AverageRF
2-Amino-4,6-dinitrotoluene	1000	1000	42000	44100	5	NA	± 20	AverageRF
2,4,6-Trinitrotoluene	1000	1100	41700	43800	5	NA	± 20	AverageRF
2,6-Dinitrotoluene	1000	1100	24500	26400	8	NA	± 20	AverageRF
2,4-Dinitrotoluene	1000	1000	59200	62200	5	NA	± 20	AverageRF
2-Nitrotoluene	1000	1100	18000	19100	6	NA	± 20	AverageRF
4-Nitrotoluene	1000	1100	15900	18000	14	NA	± 20	AverageRF
3-Nitrotoluene	1000	1200	20100	23300	16	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	990	21600	21500	-1	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Date Analyzed: 04/18/2017

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 12/07/2016
Calibration ID: CAL15063
Analysis Lot: KWG1703783
Units: ug/L
Column ID: Synergi Hydro 4

File ID: J:\LC10\DATA\041717-210\0417000135.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Nitroglycerin	1000	1100	20800	23000	10	NA	± 20	AverageRF
Pentaerythritol Tetranitrate	1000	1100	17600	18500	5	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1000	56900	58000	2	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579
Date Analyzed: 04/18/2017

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 02/09/2017
Calibration ID: CAL15192
Analysis Lot: KWG1703405
Units: ug/L

File ID: J:\LC08\DATA\041717-254\0417000135.D

Column ID: Ultra Aromax 5u

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	1000	15600	15700	1	NA	± 20	AverageRF
RDX	1000	950	18600	17700	-5	NA	± 20	AverageRF
1,3,5-Trinitrobenzene	1000	1000	42100	42100	0	NA	± 20	AverageRF
1,3-Dinitrobenzene	1000	1000	55900	55900	0	NA	± 20	AverageRF
3,5-Dinitroaniline	1000	980	46500	45600	-2	NA	± 20	AverageRF
TETRYL	1000	990	29400	29200	-1	NA	± 20	AverageRF
Nitrobenzene	1000	980	37200	36400	-2	NA	± 20	AverageRF
4-Amino-2,6-dinitrotoluene	1000	980	31900	31300	-2	NA	± 20	AverageRF
2-Amino-4,6-dinitrotoluene	1000	980	42200	41300	-2	NA	± 20	AverageRF
2,4,6-Trinitrotoluene	1000	930	38800	36200	-7	NA	± 20	AverageRF
2,6-Dinitrotoluene	1000	940	24500	23100	-6	NA	± 20	AverageRF
2,4-Dinitrotoluene	1000	950	52600	50000	-5	NA	± 20	AverageRF
2-Nitrotoluene	1000	990	23600	23200	-1	NA	± 20	AverageRF
4-Nitrotoluene	1000	990	23300	23000	-1	NA	± 20	AverageRF
3-Nitrotoluene	1000	970	27900	27100	-3	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	980	26300	25800	-2	NA	± 20	AverageRF

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

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579

Analysis Run Log
Nitroaromatics and Nitramines (Explosives)

Analysis Method: 8330B

Analysis Lot: KWG1703405
Instrument ID: LC08
Column: Ultra Aromax 5u

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
17000102.D	Instrument Blank	KWG1703405-7	4/17/2017	18:05		4/17/2017	18:40
17000103.D	Continuing Calibration Verification	KWG1703405-1	4/17/2017	18:42		4/17/2017	19:17
17000104.D	Method Blank	KWG1702912-2	4/17/2017	19:19		4/17/2017	19:54
17000106.D	AIA170410AIASP01	K1703579-001	4/17/2017	20:33		4/17/2017	21:08
17000107.D	AIA170410AIASP02	K1703579-002	4/17/2017	21:09		4/17/2017	21:44
17000108.D	AIA161101AIASP03	K1703579-003	4/17/2017	21:46		4/17/2017	22:21
17000109.D	AIA170412IDW	K1703579-005	4/17/2017	22:23		4/17/2017	22:58
17000110.D	AIA17041098IAMW01	K1703579-006	4/17/2017	23:00		4/17/2017	23:35
17000111.D	AIA17041098IAMW02	K1703579-007	4/17/2017	23:37		4/18/2017	00:12
17000112.D	AIA17041098IAMW03	K1703579-008	4/18/2017	00:14		4/18/2017	00:49
17000113.D	Continuing Calibration Verification	KWG1703405-2	4/18/2017	00:51		4/18/2017	01:26
17000114.D	Instrument Blank	KWG1703405-8	4/18/2017	01:27		4/18/2017	02:02
17000115.D	ZZZZZZ	ZZZZZZ	4/18/2017	02:04		4/18/2017	02:39
17000116.D	ZZZZZZ	ZZZZZZ	4/18/2017	02:41		4/18/2017	03:16
17000117.D	ZZZZZZ	ZZZZZZ	4/18/2017	03:18		4/18/2017	03:53
17000118.D	ZZZZZZ	ZZZZZZ	4/18/2017	03:55		4/18/2017	04:30
17000119.D	ZZZZZZ	ZZZZZZ	4/18/2017	04:32		4/18/2017	05:07
17000120.D	ZZZZZZ	ZZZZZZ	4/18/2017	05:09		4/18/2017	05:44
17000121.D	ZZZZZZ	ZZZZZZ	4/18/2017	05:46		4/18/2017	06:21
17000122.D	ZZZZZZ	ZZZZZZ	4/18/2017	06:22		4/18/2017	06:57
17000123.D	ZZZZZZ	ZZZZZZ	4/18/2017	06:59		4/18/2017	07:34
17000124.D	Continuing Calibration Verification	KWG1703405-3	4/18/2017	07:36		4/18/2017	08:11
17000125.D	Instrument Blank	KWG1703405-9	4/18/2017	08:13		4/18/2017	08:48
17000126.D	AIA170410FHDS	K1703579-004	4/18/2017	08:50		4/18/2017	09:25
17000129.D	ZZZZZZ	ZZZZZZ	4/18/2017	10:40		4/18/2017	11:15
17000132.D	ZZZZZZ	ZZZZZZ	4/18/2017	12:31		4/18/2017	13:06
17000135.D	Continuing Calibration Verification	KWG1703405-4	4/18/2017	14:22		4/18/2017	14:57
17000136.D	Instrument Blank	KWG1703405-10	4/18/2017	14:59		4/18/2017	15:34
17000141.D	ZZZZZZ	ZZZZZZ	4/18/2017	18:03		4/18/2017	18:38
17000142.D	ZZZZZZ	ZZZZZZ	4/18/2017	18:40		4/18/2017	19:15
17000143.D	ZZZZZZ	ZZZZZZ	4/18/2017	19:17		4/18/2017	19:52
17000144.D	ZZZZZZ	ZZZZZZ	4/18/2017	19:54		4/18/2017	20:28
17000146.D	ZZZZZZ	ZZZZZZ	4/18/2017	21:07		4/18/2017	21:42
17000147.D	Continuing Calibration Verification	KWG1703405-5	4/18/2017	21:44		4/18/2017	22:19
17000148.D	Instrument Blank	KWG1703405-11	4/18/2017	22:21		4/18/2017	22:56

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579

Analysis Run Log
Nitroaromatics and Nitramines (Explosives)

Analysis Method: 8330B

Analysis Lot: KWG1703405
Instrument ID: LC08
Column: Ultra Aromax 5u

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
17000149.D	ZZZZZZ	ZZZZZZ	4/18/2017	22:58		4/18/2017	23:33
17000151.D	ZZZZZZ	ZZZZZZ	4/19/2017	00:12		4/19/2017	00:47
17000152.D	ZZZZZZ	ZZZZZZ	4/19/2017	00:48		4/19/2017	01:23
17000153.D	Continuing Calibration Verification	KWG1703405-6	4/19/2017	01:25		4/19/2017	02:00
17000154.D	Instrument Blank	KWG1703405-12	4/19/2017	02:02		4/19/2017	02:37

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579

Analysis Run Log
Nitroaromatics and Nitramines (Explosives)

Analysis Method: 8330B

Analysis Lot: KWG1703784
Instrument ID: LC08
Column: Ultra Aromax 5u

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
17000102.D	Instrument Blank	KWG1703784-3	4/17/2017	18:05		4/17/2017	18:40
17000103.D	Continuing Calibration Verification	KWG1703784-1	4/17/2017	18:42		4/17/2017	19:17
17000106.D	AIA170410AIASP01	K1703579-001	4/17/2017	20:33		4/17/2017	21:08
17000108.D	AIA161101AIASP03	K1703579-003	4/17/2017	21:46		4/17/2017	22:21
17000109.D	AIA170412IDW	K1703579-005	4/17/2017	22:23		4/17/2017	22:58
17000111.D	AIA17041098IAMW02	K1703579-007	4/17/2017	23:37		4/18/2017	00:12
17000113.D	Continuing Calibration Verification	KWG1703784-2	4/18/2017	00:51		4/18/2017	01:26
17000114.D	Instrument Blank	KWG1703784-4	4/18/2017	01:27		4/18/2017	02:02

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579

Analysis Run Log
Nitroaromatics and Nitramines (Explosives)

Analysis Method: 8330B

Analysis Lot: KWG1703200
Instrument ID: LC10
Column: Synergi Hydro R

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
17000102.D	Instrument Blank	KWG1703200-7	4/17/2017	17:53		4/17/2017	18:26
17000103.D	Continuing Calibration Verification	KWG1703200-1	4/17/2017	18:30		4/17/2017	19:03
17000104.D	Method Blank	KWG1702912-2	4/17/2017	19:06		4/17/2017	19:39
17000105.D	Lab Control Sample	KWG1702912-1	4/17/2017	19:42		4/17/2017	20:15
17000106.D	AIA170410AIASP01	K1703579-001	4/17/2017	20:18		4/17/2017	20:51
17000107.D	AIA170410AIASP02	K1703579-002	4/17/2017	20:55		4/17/2017	21:28
17000108.D	AIA161101AIASP03	K1703579-003	4/17/2017	21:31		4/17/2017	22:04
17000109.D	AIA170412IDW	K1703579-005	4/17/2017	22:07		4/17/2017	22:40
17000110.D	AIA17041098IAMW01	K1703579-006	4/17/2017	22:43		4/17/2017	23:16
17000111.D	AIA17041098IAMW02	K1703579-007	4/17/2017	23:20		4/17/2017	23:53
17000112.D	AIA17041098IAMW03	K1703579-008	4/17/2017	23:56		4/18/2017	00:29
17000113.D	Continuing Calibration Verification	KWG1703200-2	4/18/2017	00:32		4/18/2017	01:05
17000114.D	Instrument Blank	KWG1703200-8	4/18/2017	01:08		4/18/2017	01:41
17000115.D	ZZZZZZ	ZZZZZZ	4/18/2017	01:44		4/18/2017	02:17
17000116.D	ZZZZZZ	ZZZZZZ	4/18/2017	02:21		4/18/2017	02:54
17000117.D	ZZZZZZ	ZZZZZZ	4/18/2017	02:57		4/18/2017	03:30
17000118.D	ZZZZZZ	ZZZZZZ	4/18/2017	03:33		4/18/2017	04:06
17000119.D	ZZZZZZ	ZZZZZZ	4/18/2017	04:09		4/18/2017	04:42
17000120.D	ZZZZZZ	ZZZZZZ	4/18/2017	04:46		4/18/2017	05:19
17000121.D	ZZZZZZ	ZZZZZZ	4/18/2017	05:22		4/18/2017	05:55
17000122.D	ZZZZZZ	ZZZZZZ	4/18/2017	05:58		4/18/2017	06:31
17000123.D	ZZZZZZ	ZZZZZZ	4/18/2017	06:34		4/18/2017	07:07
17000124.D	Continuing Calibration Verification	KWG1703200-3	4/18/2017	07:11		4/18/2017	07:44
17000125.D	Instrument Blank	KWG1703200-9	4/18/2017	07:47		4/18/2017	08:20
17000126.D	AIA170410FHDS	K1703579-004	4/18/2017	08:23		4/18/2017	08:56
17000127.D	AIA170410FHDSMS	KWG1702912-3	4/18/2017	08:59		4/18/2017	09:32
17000128.D	AIA170410FHDSMS	KWG1702912-4	4/18/2017	09:35		4/18/2017	10:08
17000129.D	ZZZZZZ	ZZZZZZ	4/18/2017	10:12		4/18/2017	10:45
17000130.D	ZZZZZZ	ZZZZZZ	4/18/2017	10:48		4/18/2017	11:21
17000131.D	ZZZZZZ	ZZZZZZ	4/18/2017	11:24		4/18/2017	11:57
17000132.D	ZZZZZZ	ZZZZZZ	4/18/2017	12:00		4/18/2017	12:33
17000133.D	ZZZZZZ	ZZZZZZ	4/18/2017	12:37		4/18/2017	13:10
17000134.D	ZZZZZZ	ZZZZZZ	4/18/2017	13:13		4/18/2017	13:46
17000135.D	Continuing Calibration Verification	KWG1703200-4	4/18/2017	13:49		4/18/2017	14:22
17000136.D	Instrument Blank	KWG1703200-10	4/18/2017	14:25		4/18/2017	14:58

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579

Analysis Run Log
Nitroaromatics and Nitramines (Explosives)

Analysis Method: 8330B

Analysis Lot: KWG1703200
Instrument ID: LC10
Column: Synergi Hydro R

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
17000137.D	ZZZZZZ	ZZZZZZ	4/18/2017	15:02		4/18/2017	15:35
17000138.D	ZZZZZZ	ZZZZZZ	4/18/2017	15:38		4/18/2017	16:11
17000139.D	ZZZZZZ	ZZZZZZ	4/18/2017	16:14		4/18/2017	16:47
17000140.D	ZZZZZZ	ZZZZZZ	4/18/2017	16:50		4/18/2017	17:23
17000141.D	ZZZZZZ	ZZZZZZ	4/18/2017	17:26		4/18/2017	17:59
17000142.D	ZZZZZZ	ZZZZZZ	4/18/2017	18:03		4/18/2017	18:36
17000143.D	ZZZZZZ	ZZZZZZ	4/18/2017	18:39		4/18/2017	19:12
17000144.D	ZZZZZZ	ZZZZZZ	4/18/2017	19:15		4/18/2017	19:48
17000145.D	ZZZZZZ	ZZZZZZ	4/18/2017	19:51		4/18/2017	20:24
17000146.D	ZZZZZZ	ZZZZZZ	4/18/2017	20:28		4/18/2017	21:01
17000147.D	Continuing Calibration Verification	KWG1703200-5	4/18/2017	21:04		4/18/2017	21:37
17000148.D	Instrument Blank	KWG1703200-11	4/18/2017	21:40		4/18/2017	22:13
17000149.D	ZZZZZZ	ZZZZZZ	4/18/2017	22:16		4/18/2017	22:49
17000150.D	ZZZZZZ	ZZZZZZ	4/18/2017	22:53		4/18/2017	23:26
17000151.D	ZZZZZZ	ZZZZZZ	4/18/2017	23:29		4/19/2017	00:02
17000152.D	ZZZZZZ	ZZZZZZ	4/19/2017	00:05		4/19/2017	00:38
17000153.D	Continuing Calibration Verification	KWG1703200-6	4/19/2017	00:41		4/19/2017	01:14
17000154.D	Instrument Blank	KWG1703200-12	4/19/2017	01:17		4/19/2017	01:50

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

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01B

Service Request: K1703579

Analysis Run Log
Nitroaromatics and Nitramines (Explosives)

Analysis Method: 8330B

Analysis Lot: KWG1703783
Instrument ID: LC10
Column: Synergi Hydro 4

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
17000102.D	Instrument Blank	KWG1703783-3	4/17/2017	17:53		4/17/2017	18:26
17000103.D	Continuing Calibration Verification	KWG1703783-1	4/17/2017	18:30		4/17/2017	19:03
17000104.D	Method Blank	KWG1702912-2	4/17/2017	19:06		4/17/2017	19:39
17000105.D	Lab Control Sample	KWG1702912-1	4/17/2017	19:42		4/17/2017	20:15
17000106.D	AIA170410AIASP01	K1703579-001	4/17/2017	20:18		4/17/2017	20:51
17000107.D	AIA170410AIASP02	K1703579-002	4/17/2017	20:55		4/17/2017	21:28
17000108.D	AIA161101AIASP03	K1703579-003	4/17/2017	21:31		4/17/2017	22:04
17000109.D	ZZZZZZ	ZZZZZZ	4/17/2017	22:07		4/17/2017	22:40
17000110.D	AIA17041098IAMW01	K1703579-006	4/17/2017	22:43		4/17/2017	23:16
17000111.D	AIA17041098IAMW02	K1703579-007	4/17/2017	23:20		4/17/2017	23:53
17000112.D	AIA17041098IAMW03	K1703579-008	4/17/2017	23:56		4/18/2017	00:29
17000113.D	Continuing Calibration Verification	KWG1703783-2	4/18/2017	00:32		4/18/2017	01:05
17000114.D	Instrument Blank	KWG1703783-4	4/18/2017	01:08		4/18/2017	01:41
17000124.D	Continuing Calibration Verification	KWG1703783-5	4/18/2017	07:11		4/18/2017	07:44
17000125.D	Instrument Blank	KWG1703783-6	4/18/2017	07:47		4/18/2017	08:20
17000126.D	AIA170410FHDS	K1703579-004	4/18/2017	08:23		4/18/2017	08:56
17000127.D	AIA170410FHDSMS	KWG1702912-3	4/18/2017	08:59		4/18/2017	09:32
17000128.D	AIA170410FHDSMS	KWG1702912-4	4/18/2017	09:35		4/18/2017	10:08
17000135.D	Continuing Calibration Verification	KWG1703783-7	4/18/2017	13:49		4/18/2017	14:22
17000136.D	Instrument Blank	KWG1703783-8	4/18/2017	14:25		4/18/2017	14:58

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

QA/QC Results

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

Service Request: K1703579
Date Extracted: 04/13/2017

Extraction Prep Log
Nitroaromatics and Nitramines (Explosives)

Extraction Method: METHOD
Analysis Method: 8330B

Extraction Lot: KWG1702912
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
AIA170410AIASP01	K1703579-001	04/10/17	04/12/17	1050ml	4ml	NA	
AIA170410AIASP01RE	K1703579-001	04/10/17	04/12/17	1050ml	4ml	NA	
AIA170410AIASP02RE	K1703579-002	04/10/17	04/12/17	1050ml	4ml	NA	
AIA170410AIASP02	K1703579-002	04/10/17	04/12/17	1050ml	4ml	NA	
AIA161101AIASP03RE	K1703579-003	04/10/17	04/12/17	1050ml	4ml	NA	
AIA161101AIASP03	K1703579-003	04/10/17	04/12/17	1050ml	4ml	NA	
AIA170410FHDSRE	K1703579-004	04/10/17	04/12/17	1050ml	4ml	NA	
AIA170410FHDS	K1703579-004	04/10/17	04/12/17	1050ml	4ml	NA	
AIA170412IDW	K1703579-005	04/12/17	04/12/17	1050ml	4ml	NA	
AIA170412IDWRE	K1703579-005	04/12/17	04/12/17	1050ml	4ml	NA	
AIA17041098IAMW01	K1703579-006	04/10/17	04/12/17	1070ml	4ml	NA	
AIA17041098IAMW01RE	K1703579-006	04/10/17	04/12/17	1070ml	4ml	NA	
AIA17041098IAMW02RE	K1703579-007	04/10/17	04/12/17	1070ml	4ml	NA	
AIA17041098IAMW02	K1703579-007	04/10/17	04/12/17	1070ml	4ml	NA	
AIA17041098IAMW03RE	K1703579-008	04/10/17	04/12/17	1070ml	4ml	NA	
AIA17041098IAMW03	K1703579-008	04/10/17	04/12/17	1070ml	4ml	NA	
Method Blank	KWG1702912-2	NA	NA	1000ml	4ml	NA	
AIA170410FHDSMS	KWG1702912-3	04/10/17	04/12/17	1000ml	4ml	NA	
AIA170410FHDSMS	KWG1702912-4	04/10/17	04/12/17	1000ml	4ml	NA	
Lab Control Sample	KWG1702912-1	NA	NA	1000ml	4ml	NA	

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

Confirmation Results

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

Service Request: K1703579
Date Collected: 04/10/2017
Date Received: 04/12/2017
Date Extracted: 04/13/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA170410AIASP01
Lab Code: K1703579-001
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
HMX	0.10	0.037	0.43	0.066	146.8	P	1	04/17/17
RDX	0.20	0.11	0.18	0.17	5.7	J	1	04/17/17

Confirmation Results

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

Service Request: K1703579
Date Collected: 04/10/2017
Date Received: 04/12/2017
Date Extracted: 04/13/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA170410AIASP02
Lab Code: K1703579-002
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
HMX	0.10	0.037	0.24	0.069	110.7	P	1	04/17/17

Confirmation Results

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

Service Request: K1703579
Date Collected: 04/10/2017
Date Received: 04/12/2017
Date Extracted: 04/13/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA161101AIASP03
Lab Code: K1703579-003
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
RDX	0.20	0.11	0.38	0.37	2.7	C	1	04/17/17

Confirmation Results

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

Service Request: K1703579
Date Collected: 04/12/2017
Date Received: 04/12/2017
Date Extracted: 04/13/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA170412IDW
Lab Code: K1703579-005
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
HMX	0.10	0.037	0.052			JN	1	04/17/17
RDX	0.20	0.11	0.31	0.34	9.2	C	1	04/17/17

Confirmation Results

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

Service Request: K1703579
Date Collected: 04/10/2017
Date Received: 04/12/2017
Date Extracted: 04/13/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA17041098IAMW02
Lab Code: K1703579-007
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
HMX	0.10	0.037	0.48	0.12	120.0	P	1	04/17/17
RDX	0.20	0.11	0.55	0.54	1.8	C	1	04/17/17

Confirmation Results

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

Service Request: K1703579
Date Collected: 04/10/2017
Date Received: 04/12/2017
Date Extracted: 04/13/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA17041098IAMW03
Lab Code: K1703579-008
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
RDX	0.20	0.11	0.44	0.43	2.3	C	1	04/17/17

Confirmation Results

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

Service Request: K1703579
Date Collected: NA
Date Received: NA
Date Extracted: 04/13/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: Method Blank
Lab Code: KWG1702912-2
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
2,6-Dinitrotoluene	0.20	0.054	0.060			JN	1	04/17/17

Tetra Tech, Inc.

Data Review Report

Project Name: JBLM/Artillery Impact Area
Project Number: K1703579
Collection Date: 04/10/17
Laboratory: ALS Environmental, Kelso, WA

DATA REVIEW

- Seven water samples were collected and analyzed for explosives by EPA method SW-846 8330. One Investigation Derived Waste (IDW) sample was also collected. A review was performed of the following parameters as applicable:
 - Chain-of-custody (C-O-C) documentation
 - Holding time compliance
 - Blank sample data
 - Spike sample recovery
 - Duplicate samples
 - Surrogate recoveries

Sample Identification:

AIA170410AIASP01
AIA170410AIASP02
AIA170410AIASP03
AIA170410FHDS
AIA170412IDW
AIA170410981AMW01
AIA170410981AMW02
AIA170410981AMW03

Review Summary

1. Holding Time

All holding times were met. The coolers arrived at acceptable temperature levels. All chain of custody documentation and sample labels were in order except sample AIA170410AIASP03 was recorded as AIA161101AIASP03 in the COC. The sample ID was corrected at the laboratory based on the sample container labels.

2. Matrix Spikes

Sample AIA170410FHDS was selected as the matrix spike/matrix spike duplicate for quality control purposes. All matrix spike and matrix spike duplicate sample recoveries were within acceptable limits of control except for 4-amino-2,6-dinitrotoluene, 2-amino-4,6-dinitrotoluene, 2,4,6-trinitrotoluene, 2,6-dinitrotoluene, 2,4-dinitrotoluene, 2-nitrotoluene, 4-nitrotoluene, 30nitrotoluene and pentaerythritol tetranitrate which were all over recovered in the matrix spike and matrix spike duplicate samples and tetryl which was over recovered in the matrix spike sample. All MS/MSD RPD's were within control limits.

None of the over recovered analytes were detected in the field samples and there is no impact on the usability of the data.

3. Blanks

The method blank had no target analytes detected except for 2,6-dinitrotoluene (0.060 ug/L). No samples had a detection of 2,6-dinitrotoluene and there is no impact on the usability of the data for the blank contamination.

4. Duplicates

No field duplicate sample was collected with this sample event.

5. Laboratory Control Samples

All laboratory control sample recoveries were within acceptable limits of control.

6. Surrogates

All surrogate recoveries were within acceptable limits of control.

7. Comments

Manual integration was performed to correct the automated data program integration. The manual integration was performed in accordance with NELAP and DOD QA/QC protocol. All data are complete and usable. Sample SIS17041098IAMW03 had matrix interference present that resulted in elevated reporting limits for 2-nitrotoluene.



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October 11, 2017

Analytical Report for Service Request No: K1709106

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

RE: JBLM AIA / TO 01C

Dear Scott,

Enclosed are the results of the sample(s) submitted to our laboratory August 29, 2017
For your reference, these analyses have been assigned our service request number **K1709106**.

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 contact me if you have any questions. My extension is 3356. You may also contact me via email at Kurt.Clarkson@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kurt Clarkson
Sr. Project Manager



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 Nitroaromatics and Nitramines (Explosives)

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 DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	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	http://health.hawaii.gov/	-
ISO 17025	http://www.pjllabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	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/EnvironmentalLabCertification/	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
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
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

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ALS ENVIRONMENTAL

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

Service Request No.: K1709106
Date Received: 08/29/17

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

Thirteen water samples were received for analysis at ALS Environmental on 08/29/17. 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.

Explosives by EPA Method 8330

Matrix Spike Recovery Exceptions:

The upper control criterion was exceeded for the following analyte in Matrix Spike (MS) AIA170828FHDS and Matrix Spike Duplicate (MSD) AIA170828FHDS: Pentaerythritol Tetranitrate. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

Lab Control Sample Exceptions:

The upper control criterion was exceeded for Pentaerythritol Tetranitrate in Laboratory Control Sample (LCS) KWG1707704-3. The analyte in question was not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

Calibration Verification Exceptions:

The upper control criterion was exceeded for 3,5-Dinitroaniline in Continuing Calibration Verification (CCV) 0929F121. The field samples analyzed in this sequence did not contain the analyte in question. Since the apparent problem indicated a potential high bias, the data quality was not affected. No further corrective action was required.

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.

Approved by



Due to matrix effects, these samples saw one or more analytes display retention time shifting more than normally observed in this method and particular matrix. Note that the instances where this shift occurred, the detections were less than the LOD. The raw data is flagged to indicate the RT shift.

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

Approved by

A handwritten signature in black ink that reads "Kurt Clarkson". The signature is written in a cursive style and is positioned over a horizontal line.



Chain of Custody

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Chain-of-Custody

K1709106

WORKORDER #	
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PROJECT NAME	JBLM AIA	SAMPLER	V. Sunrise Patterson	DATE	8/28/2017	TURNAROUND	21 Day	DISPOSAL	By Lab
PROJECT No.	TO 01C	SITE ID							
		EDD FORMAT							
		PURCHASE ORDER							
COMPANY NAME	Sealaska Environmental Services, LLC	BILL TO COMPANY	Sealaska Environmental Services, LLC						
SEND REPORT TO	Aaron Vernik	INVOICE ATTN TO							
ADDRESS	18743 Front Street NE, STE 201	ADDRESS							
CITY / STATE / ZIP	Poulsbo, WA	CITY / STATE / ZIP							
PHONE	(425) 326-0280	PHONE							
E-MAIL	aaron.vernik@sealaska.com	E-MAIL							

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	MS/MSD	EPA SW846-8330	Nitroaromatics/Nitraines
1	AIA170828FHDS	W	8/28/2017	9:10	6	8	YES	6	
2	AIA170828AIASP01	W	8/28/2017	9:30	2	8	NO	2	
3	AIA170828AIASP02	W	8/28/2017	15:00	2	8	NO	2	
4	AIA170828AIASP03	W	8/28/2017	14:10	2	8	NO	2	
5	AIA170828AIASP04	W	8/28/2017	13:00	2	8	NO	2	
6	AIA170828AIASP05	W	8/28/2017	10:20	2	8	NO	2	
7	AIA17082898IAMW01	W	8/28/2017	12:55	2	8	NO	2	
8	AIA17082898IAMW02	W	8/28/2017	13:20	2	8	NO	2	
9	AIA17082898IAMW03	W	8/28/2017	14:40	2	8	NO	2	
10	AIA17082898IAMW04	W	8/28/2017	12:03	2	8	NO	2	

*Time Zone: PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments: AS PER CONTRACT	QC PACKAGE (check below)
	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

SIGNATURE	PRINTED NAME	DATE	TIME
<i>[Signature]</i>	V. Sunrise Patterson-Sealaska Env.	8/29/2017	
<i>[Signature]</i>	MC Delivery		
<i>[Signature]</i>	MC Delivery		
<i>[Signature]</i>	BRUCEMAN	8/29/17	11:30
<i>[Signature]</i>			



ALS Environmental

1317 13th Ave S, Kelso, WA 98626
 PH: (360) 577-7222

Chain-of-Custody

K1789106

WORKORDER #	
PAGE	2 of 2

PROJECT NAME: JBLM AIA		SAMPLER: V. Sunrise Patterson		DATE: 8/28/2017	TURNAROUND: 21 Day		DISPOSAL: By Lab	
PROJECT No.:	TO 01C	SITE ID:		EDD FORMAT:		PURCHASE ORDER:		EPA SW846-8330 Nitroaromatics/Nitramines
COMPANY NAME:	Sealaska Environmental Services, LLC	BILL TO COMPANY:		Sealaska Environmental Services, LLC		INVOICE ATTN TO:		
SEND REPORT TO:	Aaron Vernik	ADDRESS:		18743 Front Street NE, STE 201		CITY / STATE / ZIP:		
ADDRESS:	18743 Front Street NE, STE 201	CITY / STATE / ZIP:		Poulsbo, WA		PHONE:		
CITY / STATE / ZIP:	Poulsbo, WA	PHONE:		(425) 326-0280		E-MAIL:		
PHONE:	(425) 326-0280	E-MAIL:		aaron.vernik@sealaska.com				
E-MAIL:	aaron.vernik@sealaska.com							
E-MAIL:								
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	MS/MSD	
11	AIA17082898IAMW05	W	8/28/2017	11:03	2	8	NO	2
12	AIA17082898IAMW11	W	8/28/2017	13:00	2	8	NO	2
13	AIA170828IDW	W	8/28/2017	16:15	2	8	NO	2

*Time Zone: PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments: AS PER CONTRACT	QC PACKAGE (check below) <input type="checkbox"/> LEVEL II (Standard QC)
	<input type="checkbox"/> LEVEL III (Std QC + forms)
	<input type="checkbox"/> LEVEL IV (Std QC + forms + raw data)
	<input type="checkbox"/>
Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035	

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	<i>[Signature]</i>	V. Sunrise Patterson-Sealaska Env.	4/12/2017	
RECEIVED BY		MC Delivery		
RELINQUISHED BY	<i>[Signature]</i>	MC Delivery		
RECEIVED BY	<i>[Signature]</i>	BEICEMAN	8/29/17	11:50
RELINQUISHED BY				
RECEIVED BY				



PC KE

Cooler Receipt and Preservation Form

Client Sealaska Service Request K17 09106
 Received: 8/29/17 Opened: 8/29/17 By: BR Unloaded: 8/29/17 By: BR

1. Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
2. Samples were received in: (circle) Cooler Box Envelope Other _____
3. Were custody seals on coolers? NA Y N If yes, how many and where? NA (front, 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
-0.2	-0.2	2.1	2.1	0.0	380			<input checked="" type="checkbox"/> NA	<input type="checkbox"/>
-0.6	-0.7	1.6	1.0	-0.1	371			<input type="checkbox"/>	<input type="checkbox"/>
-0.1	0.1	1.9	2.1	+0.2	325			<input type="checkbox"/>	<input type="checkbox"/>
-0.1	-0.2	1.4	1.3	-0.1	375			<input type="checkbox"/>	<input type="checkbox"/>

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. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA Y N
 If applicable, tissue samples were received: Frozen Partially Thawed Thawed
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	Head-	Broke	pH	Reagent	Volume	Reagent Lot	Initials	Time
	Bottle Type	Temp	space				added	Number		

Notes, Discrepancies, & Resolutions: _____



Nitroaromatics and Nitramines (Explosives)

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 AIA/TO 01C

Service Request: K1709106

**Cover Page - Organic Analysis Data Package
 Nitroaromatics and Nitramines (Explosives)**

Sample Name	Lab Code	Date Collected	Date Received
AIA170828FHDS	K1709106-001	08/28/2017	08/29/2017
AIA170828AIASP01	K1709106-002	08/28/2017	08/29/2017
AIA170828AIASP02	K1709106-003	08/28/2017	08/29/2017
AIA170828AIASP03	K1709106-004	08/28/2017	08/29/2017
AIA170828AIASP04	K1709106-005	08/28/2017	08/29/2017
AIA170828AIASP05	K1709106-006	08/28/2017	08/29/2017
AIA17082898IAMW01	K1709106-007	08/28/2017	08/29/2017
AIA17082898IAMW02	K1709106-008	08/28/2017	08/29/2017
AIA17082898IAMW03	K1709106-009	08/28/2017	08/29/2017
AIA17082898IAMW04	K1709106-010	08/28/2017	08/29/2017
AIA17082898IAMW05	K1709106-011	08/28/2017	08/29/2017
AIA17082898IAMW11	K1709106-012	08/28/2017	08/29/2017
AIA170828IDW	K1709106-013	08/28/2017	08/29/2017
AIA170828FHDSMS	KWG1707704-1	08/28/2017	08/29/2017
AIA170828FHDSMS	KWG1707704-2	08/28/2017	08/29/2017

Analytical Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA170828FHDS
Lab Code: K1709106-001
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	ND	U	0.10	0.10	0.037	1	08/31/17	09/29/17	KWG1707704	
RDX	ND	U	0.20	0.20	0.11	1	08/31/17	09/29/17	KWG1707704	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	08/31/17	09/08/17	KWG1707704	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	08/31/17	09/08/17	KWG1707704	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	08/31/17	09/08/17	KWG1707704	
TETRYL	ND	U	0.20	0.20	0.099	1	08/31/17	09/08/17	KWG1707704	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	08/31/17	09/08/17	KWG1707704	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/08/17	KWG1707704	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	08/31/17	09/08/17	KWG1707704	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	08/31/17	09/08/17	KWG1707704	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	08/31/17	09/08/17	KWG1707704	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	08/31/17	09/08/17	KWG1707704	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/08/17	KWG1707704	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	08/31/17	09/08/17	KWG1707704	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	08/31/17	09/08/17	KWG1707704	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	08/31/17	09/08/17	KWG1707704	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	08/31/17	09/29/17	KWG1707704	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	88	23-98	09/08/17	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA170828AIASP01
Lab Code: K1709106-002
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	0.17		0.10	0.10	0.037	1	08/31/17	09/07/17	KWG1707704	
RDX	0.18	J	0.20	0.20	0.11	1	08/31/17	09/07/17	KWG1707704	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	08/31/17	09/07/17	KWG1707704	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	08/31/17	09/07/17	KWG1707704	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	08/31/17	09/07/17	KWG1707704	
TETRYL	ND	U	0.20	0.20	0.099	1	08/31/17	09/07/17	KWG1707704	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	08/31/17	09/07/17	KWG1707704	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/07/17	KWG1707704	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	08/31/17	09/07/17	KWG1707704	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	08/31/17	09/07/17	KWG1707704	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	08/31/17	09/07/17	KWG1707704	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	08/31/17	09/07/17	KWG1707704	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/07/17	KWG1707704	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	08/31/17	09/07/17	KWG1707704	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	08/31/17	09/07/17	KWG1707704	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	08/31/17	09/07/17	KWG1707704	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	08/31/17	09/07/17	KWG1707704	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	86	23-98	09/07/17	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA170828AIASP02
Lab Code: K1709106-003
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	0.13		0.10	0.10	0.037	1	08/31/17	09/07/17	KWG1707704	
RDX	0.14	J	0.20	0.20	0.11	1	08/31/17	09/07/17	KWG1707704	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	08/31/17	09/29/17	KWG1707704	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	08/31/17	09/29/17	KWG1707704	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	08/31/17	09/29/17	KWG1707704	
TETRYL	ND	U	0.20	0.20	0.099	1	08/31/17	09/29/17	KWG1707704	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	08/31/17	09/29/17	KWG1707704	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/29/17	KWG1707704	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	08/31/17	09/29/17	KWG1707704	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	08/31/17	09/29/17	KWG1707704	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	08/31/17	09/29/17	KWG1707704	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	08/31/17	09/29/17	KWG1707704	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/29/17	KWG1707704	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	08/31/17	09/29/17	KWG1707704	
3-Nitrotoluene	ND	U	0.20	0.10	0.034	1	08/31/17	09/29/17	KWG1707704	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	08/31/17	09/07/17	KWG1707704	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	08/31/17	09/07/17	KWG1707704	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	82	23-98	09/07/17	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA170828AIASP03
Lab Code: K1709106-004
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	ND	U	0.10	0.10	0.037	1	08/31/17	09/30/17	KWG1707704	
RDX	0.40		0.20	0.20	0.11	1	08/31/17	09/07/17	KWG1707704	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	08/31/17	09/07/17	KWG1707704	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	08/31/17	09/07/17	KWG1707704	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	08/31/17	09/07/17	KWG1707704	
TETRYL	ND	U	0.20	0.20	0.099	1	08/31/17	09/07/17	KWG1707704	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	08/31/17	09/07/17	KWG1707704	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/07/17	KWG1707704	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	08/31/17	09/07/17	KWG1707704	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	08/31/17	09/07/17	KWG1707704	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	08/31/17	09/07/17	KWG1707704	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	08/31/17	09/07/17	KWG1707704	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/07/17	KWG1707704	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	08/31/17	09/07/17	KWG1707704	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	08/31/17	09/07/17	KWG1707704	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	08/31/17	09/07/17	KWG1707704	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	08/31/17	09/30/17	KWG1707704	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	92	23-98	09/07/17	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA170828AIASP04
Lab Code: K1709106-005
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	ND	U	0.10	0.10	0.037	1	08/31/17	09/07/17	KWG1707704	
RDX	0.31		0.20	0.20	0.11	1	08/31/17	09/07/17	KWG1707704	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	08/31/17	09/07/17	KWG1707704	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	08/31/17	09/07/17	KWG1707704	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	08/31/17	09/07/17	KWG1707704	
TETRYL	ND	U	0.20	0.20	0.099	1	08/31/17	09/07/17	KWG1707704	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	08/31/17	09/07/17	KWG1707704	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/07/17	KWG1707704	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	08/31/17	09/07/17	KWG1707704	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	08/31/17	09/07/17	KWG1707704	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	08/31/17	09/07/17	KWG1707704	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	08/31/17	09/07/17	KWG1707704	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/07/17	KWG1707704	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	08/31/17	09/07/17	KWG1707704	
3-Nitrotoluene	ND	U	0.19	0.10	0.034	1	08/31/17	09/30/17	KWG1707704	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	08/31/17	09/07/17	KWG1707704	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	08/31/17	09/07/17	KWG1707704	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	77	23-98	09/07/17	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA170828AIASP05
Lab Code: K1709106-006
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	ND	U	0.10	0.10	0.037	1	08/31/17	09/07/17	KWG1707704	
RDX	0.14	JN	0.20	0.20	0.11	1	08/31/17	09/07/17	KWG1707704	*
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	08/31/17	09/07/17	KWG1707704	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	08/31/17	09/07/17	KWG1707704	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	08/31/17	09/07/17	KWG1707704	
TETRYL	ND	U	0.20	0.20	0.099	1	08/31/17	09/07/17	KWG1707704	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	08/31/17	09/07/17	KWG1707704	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/07/17	KWG1707704	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	08/31/17	09/07/17	KWG1707704	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	08/31/17	09/07/17	KWG1707704	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	08/31/17	09/07/17	KWG1707704	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	08/31/17	09/07/17	KWG1707704	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/07/17	KWG1707704	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	08/31/17	09/07/17	KWG1707704	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	08/31/17	09/07/17	KWG1707704	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	08/31/17	09/07/17	KWG1707704	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	08/31/17	09/07/17	KWG1707704	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	90	23-98	09/07/17	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA17082898IAMW01
Lab Code: K1709106-007
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	ND	U	0.10	0.10	0.037	1	08/31/17	09/07/17	KWG1707704	
RDX	0.12	JN	0.20	0.20	0.11	1	08/31/17	09/07/17	KWG1707704	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	08/31/17	09/07/17	KWG1707704	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	08/31/17	09/07/17	KWG1707704	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	08/31/17	09/07/17	KWG1707704	
TETRYL	ND	U	0.20	0.20	0.099	1	08/31/17	09/07/17	KWG1707704	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	08/31/17	09/07/17	KWG1707704	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/07/17	KWG1707704	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	08/31/17	09/07/17	KWG1707704	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	08/31/17	09/07/17	KWG1707704	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	08/31/17	09/07/17	KWG1707704	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	08/31/17	09/07/17	KWG1707704	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/07/17	KWG1707704	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	08/31/17	09/07/17	KWG1707704	
3-Nitrotoluene	0.077	JN	0.10	0.10	0.034	1	08/31/17	09/07/17	KWG1707704	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	08/31/17	09/07/17	KWG1707704	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	08/31/17	09/07/17	KWG1707704	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	84	23-98	09/07/17	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA17082898IAMW02
Lab Code: K1709106-008
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	0.16		0.10	0.10	0.037	1	08/31/17	09/08/17	KWG1707704	
RDX	0.16	J	0.20	0.20	0.11	1	08/31/17	09/08/17	KWG1707704	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	08/31/17	09/08/17	KWG1707704	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	08/31/17	09/08/17	KWG1707704	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	08/31/17	09/08/17	KWG1707704	
TETRYL	ND	U	0.20	0.20	0.099	1	08/31/17	09/08/17	KWG1707704	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	08/31/17	09/08/17	KWG1707704	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/08/17	KWG1707704	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	08/31/17	09/08/17	KWG1707704	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	08/31/17	09/08/17	KWG1707704	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	08/31/17	09/08/17	KWG1707704	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	08/31/17	09/08/17	KWG1707704	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/08/17	KWG1707704	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	08/31/17	09/08/17	KWG1707704	
3-Nitrotoluene	ND	U	0.20	0.10	0.034	1	08/31/17	09/30/17	KWG1707704	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	08/31/17	09/08/17	KWG1707704	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	08/31/17	09/08/17	KWG1707704	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	87	23-98	09/08/17	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA17082898IAMW03
Lab Code: K1709106-009
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	0.040	J	0.10	0.10	0.037	1	08/31/17	09/08/17	KWG1707704	
RDX	0.44		0.20	0.20	0.11	1	08/31/17	09/08/17	KWG1707704	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	08/31/17	09/08/17	KWG1707704	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	08/31/17	09/08/17	KWG1707704	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	08/31/17	09/08/17	KWG1707704	
TETRYL	ND	U	0.20	0.20	0.099	1	08/31/17	09/08/17	KWG1707704	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	08/31/17	09/08/17	KWG1707704	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/08/17	KWG1707704	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	08/31/17	09/08/17	KWG1707704	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	08/31/17	09/08/17	KWG1707704	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	08/31/17	09/08/17	KWG1707704	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	08/31/17	09/08/17	KWG1707704	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/08/17	KWG1707704	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	08/31/17	09/08/17	KWG1707704	
3-Nitrotoluene	ND	U	0.20	0.10	0.034	1	08/31/17	09/30/17	KWG1707704	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	08/31/17	09/08/17	KWG1707704	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	08/31/17	09/30/17	KWG1707704	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	89	23-98	09/08/17	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA17082898IAMW04
Lab Code: K1709106-010
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	ND	U	0.10	0.10	0.037	1	08/31/17	09/08/17	KWG1707704	
RDX	0.27		0.20	0.20	0.11	1	08/31/17	09/08/17	KWG1707704	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	08/31/17	09/08/17	KWG1707704	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	08/31/17	09/08/17	KWG1707704	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	08/31/17	09/08/17	KWG1707704	
TETRYL	ND	U	0.20	0.20	0.099	1	08/31/17	09/08/17	KWG1707704	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	08/31/17	09/08/17	KWG1707704	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/08/17	KWG1707704	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	08/31/17	09/08/17	KWG1707704	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	08/31/17	09/08/17	KWG1707704	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	08/31/17	09/08/17	KWG1707704	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	08/31/17	09/08/17	KWG1707704	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/08/17	KWG1707704	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	08/31/17	09/08/17	KWG1707704	
3-Nitrotoluene	ND	U	0.20	0.10	0.034	1	08/31/17	09/30/17	KWG1707704	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	08/31/17	09/08/17	KWG1707704	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	08/31/17	09/30/17	KWG1707704	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	71	23-98	09/08/17	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA17082898IAMW05
Lab Code: K1709106-011
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	0.079	JN	0.10	0.10	0.037	1	08/31/17	09/08/17	KWG1707704	*
RDX	0.15	JN	0.20	0.20	0.11	1	08/31/17	09/08/17	KWG1707704	*
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	08/31/17	09/08/17	KWG1707704	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	08/31/17	09/08/17	KWG1707704	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	08/31/17	09/08/17	KWG1707704	
TETRYL	ND	U	0.20	0.20	0.099	1	08/31/17	09/08/17	KWG1707704	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	08/31/17	09/08/17	KWG1707704	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/08/17	KWG1707704	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	08/31/17	09/08/17	KWG1707704	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	08/31/17	09/08/17	KWG1707704	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	08/31/17	09/08/17	KWG1707704	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	08/31/17	09/08/17	KWG1707704	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/08/17	KWG1707704	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	08/31/17	09/08/17	KWG1707704	
3-Nitrotoluene	0.057	JN	0.10	0.10	0.034	1	08/31/17	09/08/17	KWG1707704	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	08/31/17	09/08/17	KWG1707704	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	08/31/17	09/30/17	KWG1707704	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	92	23-98	09/08/17	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA17082898IAMW11
Lab Code: K1709106-012
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	0.069	JN	0.10	0.10	0.037	1	08/31/17	09/08/17	KWG1707704	*
RDX	ND	U	0.20	0.20	0.11	1	08/31/17	09/08/17	KWG1707704	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	08/31/17	09/08/17	KWG1707704	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	08/31/17	09/08/17	KWG1707704	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	08/31/17	09/08/17	KWG1707704	
TETRYL	ND	U	0.20	0.20	0.099	1	08/31/17	09/08/17	KWG1707704	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	08/31/17	09/08/17	KWG1707704	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/08/17	KWG1707704	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	08/31/17	09/08/17	KWG1707704	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	08/31/17	09/08/17	KWG1707704	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	08/31/17	09/08/17	KWG1707704	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	08/31/17	09/08/17	KWG1707704	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/08/17	KWG1707704	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	08/31/17	09/08/17	KWG1707704	
3-Nitrotoluene	0.039	JN	0.10	0.10	0.034	1	08/31/17	09/08/17	KWG1707704	*
Nitroglycerin	ND	U	1.0	1.0	0.58	1	08/31/17	09/08/17	KWG1707704	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	08/31/17	09/30/17	KWG1707704	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	82	23-98	09/08/17	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA170828IDW
Lab Code: K1709106-013
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	0.046	JN	0.10	0.10	0.037	1	08/31/17	09/08/17	KWG1707704	
RDX	0.19	JN	0.20	0.20	0.11	1	08/31/17	09/08/17	KWG1707704	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	08/31/17	09/08/17	KWG1707704	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	08/31/17	09/08/17	KWG1707704	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	08/31/17	09/08/17	KWG1707704	
TETRYL	ND	U	0.20	0.20	0.099	1	08/31/17	09/08/17	KWG1707704	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	08/31/17	09/08/17	KWG1707704	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/08/17	KWG1707704	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	08/31/17	09/08/17	KWG1707704	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	08/31/17	09/08/17	KWG1707704	
2,6-Dinitrotoluene	0.061	JN	0.20	0.20	0.054	1	08/31/17	09/08/17	KWG1707704	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	08/31/17	09/08/17	KWG1707704	
2-Nitrotoluene	0.044	JN	0.10	0.10	0.032	1	08/31/17	09/08/17	KWG1707704	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	08/31/17	09/08/17	KWG1707704	
3-Nitrotoluene	0.078	JN	0.10	0.10	0.034	1	08/31/17	09/08/17	KWG1707704	*
Nitroglycerin	ND	U	1.0	1.0	0.58	1	08/31/17	09/08/17	KWG1707704	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	08/31/17	09/30/17	KWG1707704	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	83	23-98	09/08/17	Acceptable

Comments: _____

Analytical Results

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

Service Request: K1709106
Date Collected: NA
Date Received: NA

Nitroaromatics and Nitramines (Explosives)

Sample Name: Method Blank
Lab Code: KWG1707704-4
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
HMX	ND	U	0.10	0.10	0.037	1	08/31/17	09/29/17	KWG1707704	
RDX	ND	U	0.20	0.20	0.11	1	08/31/17	09/29/17	KWG1707704	
1,3,5-Trinitrobenzene	ND	U	0.20	0.20	0.14	1	08/31/17	09/29/17	KWG1707704	
1,3-Dinitrobenzene	ND	U	0.10	0.10	0.046	1	08/31/17	09/07/17	KWG1707704	
3,5-Dinitroaniline	ND	U	0.20	0.20	0.084	1	08/31/17	09/07/17	KWG1707704	
TETRYL	ND	U	0.20	0.20	0.099	1	08/31/17	09/07/17	KWG1707704	
Nitrobenzene	ND	U	0.10	0.10	0.027	1	08/31/17	09/07/17	KWG1707704	
4-Amino-2,6-dinitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/07/17	KWG1707704	
2-Amino-4,6-dinitrotoluene	ND	U	0.10	0.10	0.034	1	08/31/17	09/07/17	KWG1707704	
2,4,6-Trinitrotoluene	ND	U	0.20	0.20	0.092	1	08/31/17	09/07/17	KWG1707704	
2,6-Dinitrotoluene	ND	U	0.20	0.20	0.054	1	08/31/17	09/29/17	KWG1707704	
2,4-Dinitrotoluene	ND	U	0.20	0.20	0.085	1	08/31/17	09/07/17	KWG1707704	
2-Nitrotoluene	ND	U	0.10	0.10	0.032	1	08/31/17	09/07/17	KWG1707704	
4-Nitrotoluene	ND	U	0.10	0.10	0.024	1	08/31/17	09/07/17	KWG1707704	
3-Nitrotoluene	ND	U	0.10	0.10	0.034	1	08/31/17	09/07/17	KWG1707704	
Nitroglycerin	ND	U	1.0	1.0	0.58	1	08/31/17	09/07/17	KWG1707704	
Pentaerythritol Tetranitrate	ND	U	1.0	1.0	0.65	1	08/31/17	09/29/17	KWG1707704	*

* See Case Narrative

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1-Chloro-3-nitrobenzene	85	23-98	09/07/17	Acceptable

Comments: _____

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

Service Request: K1709106

**Surrogate Recovery Summary
 Nitroaromatics and Nitramines (Explosives)**

Extraction Method: METHOD
Analysis Method: 8330B

Units: Percent
Level: Low

<u>Sample Name</u>	<u>Lab Code</u>	<u>Sur1</u>
AIA170828FHDS	K1709106-001	88
AIA170828AIASP01	K1709106-002	86
AIA170828AIASP02	K1709106-003	82
AIA170828AIASP03	K1709106-004	92
AIA170828AIASP04	K1709106-005	77
AIA170828AIASP05	K1709106-006	90
AIA17082898IAMW01	K1709106-007	84
AIA17082898IAMW02	K1709106-008	87
AIA17082898IAMW03	K1709106-009	89
AIA17082898IAMW04	K1709106-010	71
AIA17082898IAMW05	K1709106-011	92
AIA17082898IAMW11	K1709106-012	82
AIA170828IDW	K1709106-013	83
Method Blank	KWG1707704-4	85
AIA170828FHDSMS	KWG1707704-1	89
AIA170828FHDSMDS	KWG1707704-2	92
Lab Control Sample	KWG1707704-3	80

Surrogate Recovery Control Limits (%)

Sur1 = 1-Chloro-3-nitrobenzene 23-98

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 AIA/TO 01C
Sample Matrix: Water

Service Request: K1709106
Date Extracted: 08/31/2017
Date Analyzed: 09/08/2017

Matrix Spike/Duplicate Matrix Spike Summary
Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA170828FHDS
Lab Code: K1709106-001
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1707704

Analyte Name	Sample Result	AIA170828FHDSMS KWG1707704-1 Matrix Spike			AIA170828FHDSMS KWG1707704-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Spike Amount	%Rec	Result	Spike Amount	%Rec			
HMX	ND	7.45	7.69	97	7.54	7.69	98	11-147	1	20
RDX	ND	7.10	7.69	92	7.21	7.69	94	10-142	2	20
1,3,5-Trinitrobenzene	ND	7.09	7.69	92	7.31	7.69	95	16-137	3	20
1,3-Dinitrobenzene	ND	7.25	7.69	94	7.40	7.69	96	26-125	2	20
3,5-Dinitroaniline	ND	6.75	7.69	88	6.90	7.69	90	30-133	2	20
TETRYL	ND	6.73	7.69	87	6.97	7.69	91	29-123	4	20
Nitrobenzene	ND	6.86	7.69	89	7.00	7.69	91	10-116	2	20
4-Amino-2,6-dinitrotoluene	ND	7.25	7.69	94	7.39	7.69	96	55-117	2	20
2-Amino-4,6-dinitrotoluene	ND	6.99	7.69	91	7.12	7.69	93	54-116	2	20
2,4,6-Trinitrotoluene	ND	7.12	7.69	93	7.24	7.69	94	47-118	2	20
2,6-Dinitrotoluene	ND	7.24	7.69	94	7.50	7.69	97	40-108	4	20
2,4-Dinitrotoluene	ND	7.07	7.69	92	7.29	7.69	95	50-111	3	20
2-Nitrotoluene	ND	6.67	7.69	87	6.85	7.69	89	12-110	3	20
4-Nitrotoluene	ND	6.77	7.69	88	6.91	7.69	90	16-113	2	20
3-Nitrotoluene	ND	6.84	7.69	89	6.86	7.69	89	13-109	0	20
Nitroglycerin	ND	7.90	7.69	103	8.28	7.69	108	15-136	5	20
Pentaerythritol Tetranitrate	ND	10.8	7.69	140 *	9.97	7.69	130 *	66-103	8	20

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 AIA/TO 01C
Sample Matrix: Water

Service Request: K1709106
Date Extracted: 08/31/2017
Date Analyzed: 09/07/2017

Lab Control Spike Summary
Nitroaromatics and Nitramines (Explosives)

Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1707704

Lab Control Sample
 KWG1707704-3
 Lab Control Spike

Analyte Name	Result	Spike Amount	%Rec	%Rec Limits
HMX	6.86	8.00	86	11-147
RDX	6.66	8.00	83	10-142
1,3,5-Trinitrobenzene	5.74	8.00	72	16-137
1,3-Dinitrobenzene	6.64	8.00	83	26-125
3,5-Dinitroaniline	6.17	8.00	77	30-133
TETRYL	4.61	8.00	58	29-123
Nitrobenzene	6.30	8.00	79	10-116
4-Amino-2,6-dinitrotoluene	6.64	8.00	83	55-117
2-Amino-4,6-dinitrotoluene	6.48	8.00	81	54-116
2,4,6-Trinitrotoluene	6.53	8.00	82	47-118
2,6-Dinitrotoluene	6.80	8.00	85	40-108
2,4-Dinitrotoluene	6.49	8.00	81	50-111
2-Nitrotoluene	6.13	8.00	77	12-110
4-Nitrotoluene	6.22	8.00	78	16-113
3-Nitrotoluene	6.33	8.00	79	13-109
Nitroglycerin	7.19	8.00	90	15-136
Pentaerythritol Tetranitrate	10.8	8.00	135 *	66-103

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 AIA/TO 01C
Sample Matrix: Water

Service Request: K1709106
Date Extracted: 08/31/2017
Date Analyzed: 09/29/2017
Time Analyzed: 19:04

Method Blank Summary
Nitroaromatics and Nitramines (Explosives)

Sample Name: Method Blank
Lab Code: KWG1707704-4
Extraction Method: METHOD
Analysis Method: 8330B

Instrument ID: LC08
File ID: J:\LC08\DATA\092917-210\09290000105.D
Level: Low
Extraction Lot: KWG1707704

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
AIA170828FHDS	K1709106-001	J:\LC08\DATA\092917-210\09290000106.D	09/29/17	20:24
AIA170828AIASP03	K1709106-004	J:\LC08\DATA\092917-210\09290000109.D	09/30/17	00:25
AIA17082898IAMW03	K1709106-009	J:\LC08\DATA\092917-210\09290000116.D	09/30/17	09:47
AIA17082898IAMW04	K1709106-010	J:\LC08\DATA\092917-210\09290000117.D	09/30/17	11:08
AIA17082898IAMW05	K1709106-011	J:\LC08\DATA\092917-210\09290000118.D	09/30/17	12:28
AIA17082898IAMW11	K1709106-012	J:\LC08\DATA\092917-210\09290000119.D	09/30/17	13:48
AIA170828IDW	K1709106-013	J:\LC08\DATA\092917-210\09290000120.D	09/30/17	15:08

QA/QC Report

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

Service Request: K1709106
Date Extracted: 08/31/2017
Date Analyzed: 09/29/2017
Time Analyzed: 19:04

Method Blank Summary
Nitroaromatics and Nitramines (Explosives)

Sample Name: Method Blank
Lab Code: KWG1707704-4
Extraction Method: METHOD
Analysis Method: 8330B

Instrument ID: LC08
File ID: J:\LC08\DATA\092917-254\09290000105.D
Level: Low
Extraction Lot: KWG1707704

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
AIA170828FHDS	K1709106-001	J:\LC08\DATA\092917-254\09290000106.D	09/29/17	20:24
AIA170828AIASP01	K1709106-002	J:\LC08\DATA\092917-254\09290000107.D	09/29/17	21:44
AIA170828AIASP02	K1709106-003	J:\LC08\DATA\092917-254\09290000108.D	09/29/17	23:05
AIA170828AIASP03	K1709106-004	J:\LC08\DATA\092917-254\09290000109.D	09/30/17	00:25
AIA170828AIASP04	K1709106-005	J:\LC08\DATA\092917-254\09290000110.D	09/30/17	01:45
AIA17082898IAMW02	K1709106-008	J:\LC08\DATA\092917-254\09290000115.D	09/30/17	08:27
AIA17082898IAMW03	K1709106-009	J:\LC08\DATA\092917-254\09290000116.D	09/30/17	09:47
AIA17082898IAMW04	K1709106-010	J:\LC08\DATA\092917-254\09290000117.D	09/30/17	11:08

QA/QC Report

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

Service Request: K1709106
Date Extracted: 08/31/2017
Date Analyzed: 09/07/2017
Time Analyzed: 16:08

Method Blank Summary
Nitroaromatics and Nitramines (Explosives)

Sample Name: Method Blank
Lab Code: KWG1707704-4
Extraction Method: METHOD
Analysis Method: 8330B

Instrument ID: LC10
File ID: J:\LC10\DATA\090717-210\0907000104.D
Level: Low
Extraction Lot: KWG1707704

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1707704-3	J:\LC10\DATA\090717-210\0907000105.D	09/07/17	16:58
AIA170828AIASP01	K1709106-002	J:\LC10\DATA\090717-210\0907000106.D	09/07/17	17:48
AIA170828AIASP02	K1709106-003	J:\LC10\DATA\090717-210\0907000107.D	09/07/17	18:37
AIA170828AIASP03	K1709106-004	J:\LC10\DATA\090717-210\0907000108.D	09/07/17	19:27
AIA170828AIASP04	K1709106-005	J:\LC10\DATA\090717-210\0907000109.D	09/07/17	20:17
AIA170828AIASP05	K1709106-006	J:\LC10\DATA\090717-210\0907000110.D	09/07/17	21:07
AIA17082898IAMW01	K1709106-007	J:\LC10\DATA\090717-210\0907000111.D	09/07/17	21:57
AIA17082898IAMW02	K1709106-008	J:\LC10\DATA\090717-210\0907000114.D	09/08/17	00:26
AIA17082898IAMW03	K1709106-009	J:\LC10\DATA\090717-210\0907000115.D	09/08/17	01:16
AIA17082898IAMW04	K1709106-010	J:\LC10\DATA\090717-210\0907000116.D	09/08/17	02:05
AIA17082898IAMW05	K1709106-011	J:\LC10\DATA\090717-210\0907000117.D	09/08/17	02:55
AIA17082898IAMW11	K1709106-012	J:\LC10\DATA\090717-210\0907000118.D	09/08/17	03:45
AIA170828IDW	K1709106-013	J:\LC10\DATA\090717-210\0907000119.D	09/08/17	04:35
AIA170828FHDS	K1709106-001	J:\LC10\DATA\090717-210\0907000120.D	09/08/17	05:25
AIA170828FHDSMS	KWG1707704-1	J:\LC10\DATA\090717-210\0907000121.D	09/08/17	06:14
AIA170828FHDSMS	KWG1707704-2	J:\LC10\DATA\090717-210\0907000122.D	09/08/17	07:04

QA/QC Report

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

Service Request: K1709106
Date Extracted: 08/31/2017
Date Analyzed: 09/07/2017
Time Analyzed: 16:08

Method Blank Summary
Nitroaromatics and Nitramines (Explosives)

Sample Name: Method Blank
Lab Code: KWG1707704-4
Instrument ID: LC10
File ID: J:\LC10\DATA\090717-254\0907000104.D
Extraction Method: METHOD
Level: Low
Analysis Method: 8330B
Extraction Lot: KWG1707704

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1707704-3	J:\LC10\DATA\090717-254\0907000105.D	09/07/17	16:58
AIA170828AIASP01	K1709106-002	J:\LC10\DATA\090717-254\0907000106.D	09/07/17	17:48
AIA170828AIASP02	K1709106-003	J:\LC10\DATA\090717-254\0907000107.D	09/07/17	18:37
AIA170828AIASP03	K1709106-004	J:\LC10\DATA\090717-254\0907000108.D	09/07/17	19:27
AIA170828AIASP04	K1709106-005	J:\LC10\DATA\090717-254\0907000109.D	09/07/17	20:17
AIA170828AIASP05	K1709106-006	J:\LC10\DATA\090717-254\0907000110.D	09/07/17	21:07
AIA17082898IAMW01	K1709106-007	J:\LC10\DATA\090717-254\0907000111.D	09/07/17	21:57
AIA17082898IAMW02	K1709106-008	J:\LC10\DATA\090717-254\0907000114.D	09/08/17	00:26
AIA17082898IAMW03	K1709106-009	J:\LC10\DATA\090717-254\0907000115.D	09/08/17	01:16
AIA17082898IAMW04	K1709106-010	J:\LC10\DATA\090717-254\0907000116.D	09/08/17	02:05
AIA17082898IAMW05	K1709106-011	J:\LC10\DATA\090717-254\0907000117.D	09/08/17	02:55
AIA17082898IAMW11	K1709106-012	J:\LC10\DATA\090717-254\0907000118.D	09/08/17	03:45
AIA170828IDW	K1709106-013	J:\LC10\DATA\090717-254\0907000119.D	09/08/17	04:35
AIA170828FHDS	K1709106-001	J:\LC10\DATA\090717-254\0907000120.D	09/08/17	05:25
AIA170828FHDSMS	KWG1707704-1	J:\LC10\DATA\090717-254\0907000121.D	09/08/17	06:14
AIA170828FHDSMS	KWG1707704-2	J:\LC10\DATA\090717-254\0907000122.D	09/08/17	07:04

QA/QC Report

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

Service Request: K1709106
Date Extracted: 08/31/2017
Date Analyzed: 09/07/2017
Time Analyzed: 16:58

Lab Control Sample Summary
Nitroaromatics and Nitramines (Explosives)

Sample Name: Lab Control Sample **Instrument ID:** LC10
Lab Code: KWG1707704-3 **File ID:** J:\LC10\DATA\090717-210\0907000105.D
Extraction Method: METHOD **Level:** Low
Analysis Method: 8330B **Extraction Lot:** KWG1707704

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG1707704-4	J:\LC10\DATA\090717-210\0907000104.D	09/07/17	16:08
AIA170828AIASP01	K1709106-002	J:\LC10\DATA\090717-210\0907000106.D	09/07/17	17:48
AIA170828AIASP02	K1709106-003	J:\LC10\DATA\090717-210\0907000107.D	09/07/17	18:37
AIA170828AIASP03	K1709106-004	J:\LC10\DATA\090717-210\0907000108.D	09/07/17	19:27
AIA170828AIASP04	K1709106-005	J:\LC10\DATA\090717-210\0907000109.D	09/07/17	20:17
AIA170828AIASP05	K1709106-006	J:\LC10\DATA\090717-210\0907000110.D	09/07/17	21:07
AIA17082898IAMW01	K1709106-007	J:\LC10\DATA\090717-210\0907000111.D	09/07/17	21:57
AIA17082898IAMW02	K1709106-008	J:\LC10\DATA\090717-210\0907000114.D	09/08/17	00:26
AIA17082898IAMW03	K1709106-009	J:\LC10\DATA\090717-210\0907000115.D	09/08/17	01:16
AIA17082898IAMW04	K1709106-010	J:\LC10\DATA\090717-210\0907000116.D	09/08/17	02:05
AIA17082898IAMW05	K1709106-011	J:\LC10\DATA\090717-210\0907000117.D	09/08/17	02:55
AIA17082898IAMW11	K1709106-012	J:\LC10\DATA\090717-210\0907000118.D	09/08/17	03:45
AIA170828IDW	K1709106-013	J:\LC10\DATA\090717-210\0907000119.D	09/08/17	04:35
AIA170828FHDS	K1709106-001	J:\LC10\DATA\090717-210\0907000120.D	09/08/17	05:25
AIA170828FHDSMS	KWG1707704-1	J:\LC10\DATA\090717-210\0907000121.D	09/08/17	06:14
AIA170828FHDSMS	KWG1707704-2	J:\LC10\DATA\090717-210\0907000122.D	09/08/17	07:04
Method Blank	KWG1707704-4	J:\LC08\DATA\092917-210\09290000105.D	09/29/17	19:04
Method Blank	KWG1707704-4	J:\LC08\DATA\092917-254\09290000105.D	09/29/17	19:04
AIA170828FHDS	K1709106-001	J:\LC08\DATA\092917-210\09290000106.D	09/29/17	20:24
AIA170828FHDS	K1709106-001	J:\LC08\DATA\092917-254\09290000106.D	09/29/17	20:24
AIA170828AIASP01	K1709106-002	J:\LC08\DATA\092917-254\09290000107.D	09/29/17	21:44
AIA170828AIASP02	K1709106-003	J:\LC08\DATA\092917-254\09290000108.D	09/29/17	23:05
AIA170828AIASP03	K1709106-004	J:\LC08\DATA\092917-254\09290000109.D	09/30/17	00:25
AIA170828AIASP03	K1709106-004	J:\LC08\DATA\092917-210\09290000109.D	09/30/17	00:25
AIA170828AIASP04	K1709106-005	J:\LC08\DATA\092917-254\09290000110.D	09/30/17	01:45
AIA17082898IAMW02	K1709106-008	J:\LC08\DATA\092917-254\09290000115.D	09/30/17	08:27
AIA17082898IAMW03	K1709106-009	J:\LC08\DATA\092917-210\09290000116.D	09/30/17	09:47
AIA17082898IAMW03	K1709106-009	J:\LC08\DATA\092917-254\09290000116.D	09/30/17	09:47
AIA17082898IAMW04	K1709106-010	J:\LC08\DATA\092917-210\09290000117.D	09/30/17	11:08
AIA17082898IAMW04	K1709106-010	J:\LC08\DATA\092917-254\09290000117.D	09/30/17	11:08
AIA17082898IAMW05	K1709106-011	J:\LC08\DATA\092917-210\09290000118.D	09/30/17	12:28
AIA17082898IAMW11	K1709106-012	J:\LC08\DATA\092917-210\09290000119.D	09/30/17	13:48
AIA170828IDW	K1709106-013	J:\LC08\DATA\092917-210\09290000120.D	09/30/17	15:08

QA/QC Report

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

Service Request: K1709106
Date Extracted: 08/31/2017
Date Analyzed: 09/07/2017
Time Analyzed: 16:58

Lab Control Sample Summary
Nitroaromatics and Nitramines (Explosives)

Sample Name: Lab Control Sample **Instrument ID:** LC10
Lab Code: KWG1707704-3 **File ID:** J:\LC10\DATA\090717-254\0907000105.D
Extraction Method: METHOD **Level:** Low
Analysis Method: 8330B **Extraction Lot:** KWG1707704

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Method Blank	KWG1707704-4	J:\LC10\DATA\090717-210\0907000104.D	09/07/17	16:08
Method Blank	KWG1707704-4	J:\LC10\DATA\090717-254\0907000104.D	09/07/17	16:08
AIA170828AIASP01	K1709106-002	J:\LC10\DATA\090717-254\0907000106.D	09/07/17	17:48
AIA170828AIASP01	K1709106-002	J:\LC10\DATA\090717-210\0907000106.D	09/07/17	17:48
AIA170828AIASP02	K1709106-003	J:\LC10\DATA\090717-254\0907000107.D	09/07/17	18:37
AIA170828AIASP02	K1709106-003	J:\LC10\DATA\090717-210\0907000107.D	09/07/17	18:37
AIA170828AIASP03	K1709106-004	J:\LC10\DATA\090717-254\0907000108.D	09/07/17	19:27
AIA170828AIASP03	K1709106-004	J:\LC10\DATA\090717-210\0907000108.D	09/07/17	19:27
AIA170828AIASP04	K1709106-005	J:\LC10\DATA\090717-254\0907000109.D	09/07/17	20:17
AIA170828AIASP04	K1709106-005	J:\LC10\DATA\090717-210\0907000109.D	09/07/17	20:17
AIA170828AIASP05	K1709106-006	J:\LC10\DATA\090717-210\0907000110.D	09/07/17	21:07
AIA170828AIASP05	K1709106-006	J:\LC10\DATA\090717-254\0907000110.D	09/07/17	21:07
AIA17082898IAMW01	K1709106-007	J:\LC10\DATA\090717-254\0907000111.D	09/07/17	21:57
AIA17082898IAMW01	K1709106-007	J:\LC10\DATA\090717-210\0907000111.D	09/07/17	21:57
AIA17082898IAMW02	K1709106-008	J:\LC10\DATA\090717-254\0907000114.D	09/08/17	00:26
AIA17082898IAMW02	K1709106-008	J:\LC10\DATA\090717-210\0907000114.D	09/08/17	00:26
AIA17082898IAMW03	K1709106-009	J:\LC10\DATA\090717-254\0907000115.D	09/08/17	01:16
AIA17082898IAMW03	K1709106-009	J:\LC10\DATA\090717-210\0907000115.D	09/08/17	01:16
AIA17082898IAMW04	K1709106-010	J:\LC10\DATA\090717-254\0907000116.D	09/08/17	02:05
AIA17082898IAMW04	K1709106-010	J:\LC10\DATA\090717-210\0907000116.D	09/08/17	02:05
AIA17082898IAMW05	K1709106-011	J:\LC10\DATA\090717-254\0907000117.D	09/08/17	02:55
AIA17082898IAMW05	K1709106-011	J:\LC10\DATA\090717-210\0907000117.D	09/08/17	02:55
AIA17082898IAMW11	K1709106-012	J:\LC10\DATA\090717-210\0907000118.D	09/08/17	03:45
AIA17082898IAMW11	K1709106-012	J:\LC10\DATA\090717-254\0907000118.D	09/08/17	03:45
AIA170828IDW	K1709106-013	J:\LC10\DATA\090717-254\0907000119.D	09/08/17	04:35
AIA170828IDW	K1709106-013	J:\LC10\DATA\090717-210\0907000119.D	09/08/17	04:35
AIA170828FHDS	K1709106-001	J:\LC10\DATA\090717-254\0907000120.D	09/08/17	05:25
AIA170828FHDS	K1709106-001	J:\LC10\DATA\090717-210\0907000120.D	09/08/17	05:25
AIA170828FHDSMS	KWG1707704-1	J:\LC10\DATA\090717-254\0907000121.D	09/08/17	06:14
AIA170828FHDSMS	KWG1707704-1	J:\LC10\DATA\090717-210\0907000121.D	09/08/17	06:14
AIA170828FHDSMS	KWG1707704-2	J:\LC10\DATA\090717-254\0907000122.D	09/08/17	07:04
AIA170828FHDSMS	KWG1707704-2	J:\LC10\DATA\090717-210\0907000122.D	09/08/17	07:04
Method Blank	KWG1707704-4	J:\LC08\DATA\092917-210\09290000105.D	09/29/17	19:04
Method Blank	KWG1707704-4	J:\LC08\DATA\092917-254\09290000105.D	09/29/17	19:04
AIA170828FHDS	K1709106-001	J:\LC08\DATA\092917-254\09290000106.D	09/29/17	20:24
AIA170828FHDS	K1709106-001	J:\LC08\DATA\092917-210\09290000106.D	09/29/17	20:24

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106
Calibration Date: 06/09/2017

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL15431
Instrument ID: LC08

Column: Ultra Aromax 5u

Level ID	File ID	Level ID	File ID
A	J:\LC08\Data\060817-210 ICAL PETN\0608000335.D	F	J:\LC08\Data\060817-210 ICAL PETN\0608000340.D
B	J:\LC08\Data\060817-210 ICAL PETN\0608000336.D	G	J:\LC08\Data\060817-210 ICAL PETN\0608000341.D
C	J:\LC08\Data\060817-210 ICAL PETN\0608000337.D	H	J:\LC08\Data\060817-210 ICAL PETN\0608000342.D
D	J:\LC08\Data\060817-210 ICAL PETN\0608000338.D		
E	J:\LC08\Data\060817-210 ICAL PETN\0608000339.D		

Analyte Name	Level			Level			Level			Level					
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF			
Nitroglycerin				B	200	34000	C	500	21900	D	1000	22500	E	2000	23100
	F	5000	22600	G	10000	23800	H	20000	22200						
Pentaerythritol Tetranitrate				B	200	20900	C	500	23800	D	1000	24900	E	2000	23200
	F	5000	23100	G	10000	24700	H	20000	23200						
1-Chloro-3-nitrobenzene	A	100	65800	B	200	71400	C	500	70900	D	1000	74200	E	2000	74000
	F	5000	74400	G	10000	83000	H	20000	78100						

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

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106
Calibration Date: 06/09/2017

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL15431
Instrument ID: LC08

Column: Ultra Aromax 5u

Analyte Name	Compound Type	Calibration Evaluation				
		Fit Type	Eval.	Eval. Result	Q	Control Criteria
Nitroglycerin	MS	Linear	R2	0.998		≥ 0.99
Pentaerythritol Tetranitrate	MS	AverageRF	% RSD	5.6		≤ 15
1-Chloro-3-nitrobenzene	SURR	AverageRF	% RSD	6.9		≤ 15

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106
Calibration Date: 06/09/2017
Date Analyzed: 06/10/2017

Second Source Calibration Verification
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration ID: CAL15431
Units: ug/L

File ID: J:\LC08\Data\060817-210 ICAL PETN\0608000344.D

Column ID: Ultra Aromax 5u

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Nitroglycerin	1000	1100	24300	27000	NA	14	± 20 %	Linear
Pentaerythritol Tetranitrate	1000	1100	23400	25900	10	NA	± 20 %	AverageRF

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

† SPCC Compound

‡ CCC Compound

Client: Sealaska Environmental Services, LLC
 Project: JBLM AIA/TO 01C

Service Request: K1709106
 Calibration Date: 06/09/2017

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL15548
 Instrument ID: LC08

Column: Ultra Aromax 5u

Level ID	File ID	Level ID	File ID
A	F:\LC08\Data\060817Long-254\0608000333.D	G	F:\LC08\Data\060817Long-254\0608000339.D
B	F:\LC08\Data\060817Long-254\0608000334.D	H	F:\LC08\Data\060817Long-254\0608000340.D
C	F:\LC08\Data\060817Long-254\0608000335.D	I	F:\LC08\Data\060817Long-254\0608000341.D
D	F:\LC08\Data\060817Long-254\0608000336.D	J	F:\LC08\Data\060817Long-254\0608000342.D
E	F:\LC08\Data\060817Long-254\0608000337.D		
F	F:\LC08\Data\060817Long-254\0608000338.D		

Analyte Name	Level ID			Level ID			Level ID			Level ID			Level ID		
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF
HMX	A	20	17500	B	50	15400	C	100	16100	D	200	15800	E	500	17100
	F	1000	17200	G	2000	16900	H	5000	17000	I	10000	17900	J	20000	16700
RDX	A	20	20300	B	50	19500	C	100	18000	D	200	18300	E	500	19500
	F	1000	19500	G	2000	19300	H	5000	19400	I	10000	20500	J	20000	19100
1,3,5-Trinitrobenzene	A	20	44000	B	50	49400	C	100	36700	D	200	44600	E	500	45300
	F	1000	43100	G	2000	43900	H	5000	42900	I	10000	47000	J	20000	44000
1,3-Dinitrobenzene	A	20	49200	B	50	50200	C	100	51200	D	200	55700	E	500	59500
	F	1000	58700	G	2000	58000	H	5000	58400	I	10000	61600	J	20000	57500
3,5-Dinitroaniline	A	20	35200	B	50	33400	C	100	35000	D	200	44400	E	500	46900
	F	1000	47300	G	2000	46300	H	5000	47500	I	10000	50600	J	20000	47300
TETRYL															
Nitrobenzene	A	20	35200	B	50	34200	C	100	33400	D	200	35000	E	500	36700
	F	1000	37400	G	2000	36400	H	5000	36800	I	10000	39200	J	20000	36400
4-Amino-2,6-dinitrotoluene	A	20	31700	B	50	28500	C	100	26900	D	200	30700	E	500	32000
	F	1000	32800	G	2000	32200	H	5000	32300	I	10000	34200	J	20000	31900
2-Amino-4,6-dinitrotoluene	A	20	33300	B	50	36700	C	100	35400	D	200	38400	E	500	42300
	F	1000	42000	G	2000	41600	H	5000	41900	I	10000	44300	J	20000	41400
2,4,6-Trinitrotoluene				B	50	28600	C	100	30600	D	200	39000	E	500	41300
	F	1000	41000	G	2000	40700	H	5000	40400	I	10000	43400	J	20000	40600
2,6-Dinitrotoluene	A	20	29500	B	50	25800	C	100	26900	D	200	30200	E	500	29200
	F	1000	28800	G	2000	28100	H	5000	29000	I	10000	30300	J	20000	28400
2,4-Dinitrotoluene	A	20	59800	B	50	54400	C	100	52100	D	200	52900	E	500	54200
	F	1000	52000	G	2000	53700	H	5000	53300	I	10000	56200	J	20000	52600
2-Nitrotoluene	A	20	24500	B	50	23100	C	100	21200	D	200	23500	E	500	23500
	F	1000	23800	G	2000	23400	H	5000	23700	I	10000	25100	J	20000	23500
4-Nitrotoluene	A	20	17400	B	50	20100	C	100	19800	D	200	21700	E	500	22100
	F	1000	22400	G	2000	21700	H	5000	21900	I	10000	23400	J	20000	22000

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

ALS Group USA, Corp. dba ALS Environmental

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106
Calibration Date: 06/09/2017

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL15548
Instrument ID: LC08

Column: Ultra Aromax 5u

Analyte Name	Level			Level			Level			Level		
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF
3-Nitrotoluene	B	50	20000	C	100	20800	D	200	25200	E	500	26800
	F	1000	26400	G	2000	26100	H	5000	26200	I	10000	27800
1-Chloro-3-nitrobenzene	A	20	27200	B	50	25800	C	100	25400	D	200	26400
	F	1000	27500	G	2000	27000	H	5000	27300	I	10000	30800

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

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106
Calibration Date: 06/09/2017

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL15548
Instrument ID: LC08

Column: Ultra Aromax 5u

Analyte Name	Compound Type	Calibration Evaluation				
		Fit Type	Eval.	Eval. Result	Q	Control Criteria
HMX	MS	AverageRF	% RSD	4.7		≤ 15
RDX	MS	AverageRF	% RSD	3.9		≤ 15
1,3,5-Trinitrobenzene	MS	AverageRF	% RSD	7.4		≤ 15
1,3-Dinitrobenzene	MS	AverageRF	% RSD	7.7		≤ 15
3,5-Dinitroaniline	MS	AverageRF	% RSD	14.5		≤ 15
TETRYL	MS	Linear	R2	0.997		≥ 0.99
Nitrobenzene	MS	AverageRF	% RSD	4.7		≤ 15
4-Amino-2,6-dinitrotoluene	MS	AverageRF	% RSD	6.8		≤ 15
2-Amino-4,6-dinitrotoluene	MS	AverageRF	% RSD	9.0		≤ 15
2,4,6-Trinitrotoluene	MS	AverageRF	% RSD	13.4		≤ 15
2,6-Dinitrotoluene	MS	AverageRF	% RSD	4.9		≤ 15
2,4-Dinitrotoluene	MS	AverageRF	% RSD	4.4		≤ 15
2-Nitrotoluene	MS	AverageRF	% RSD	4.3		≤ 15
4-Nitrotoluene	MS	AverageRF	% RSD	8.0		≤ 15
3-Nitrotoluene	MS	AverageRF	% RSD	10.9		≤ 15
1-Chloro-3-nitrobenzene	SURR	AverageRF	% RSD	5.8		≤ 15

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106
Calibration Date: 06/09/2017
Date Analyzed: 06/10/2017

Second Source Calibration Verification
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration ID: CAL15548
Units: ug/L

File ID: I:\LC08\Data\060817Long-254\0608000344.D

Column ID: Ultra Aromax 5u

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	1100	16800	19100	14	NA	± 20 %	AverageRF
RDX	1000	1100	19300	22000	14	NA	± 20 %	AverageRF
1,3,5-Trinitrobenzene	1000	1100	44100	49200	12	NA	± 20 %	AverageRF
1,3-Dinitrobenzene	1000	1200	56000	65600	17	NA	± 20 %	AverageRF
3,5-Dinitroaniline	1000	1200	43400	51500	19	NA	± 20 %	AverageRF
Nitrobenzene	1000	1100	36100	40900	13	NA	± 20 %	AverageRF
4-Amino-2,6-dinitrotoluene	1000	1100	31300	35000	12	NA	± 20 %	AverageRF
2-Amino-4,6-dinitrotoluene	1000	1200	39700	47200	19	NA	± 20 %	AverageRF
2,4,6-Trinitrotoluene	1000	1200	38400	46000	20	NA	± 20 %	AverageRF
2,6-Dinitrotoluene	1000	1100	28600	32700	14	NA	± 20 %	AverageRF
2,4-Dinitrotoluene	1000	1100	54100	58600	8	NA	± 20 %	AverageRF
2-Nitrotoluene	1000	1100	23500	26600	13	NA	± 20 %	AverageRF
4-Nitrotoluene	1000	1200	21300	24500	15	NA	± 20 %	AverageRF
3-Nitrotoluene	1000	1200	25100	30000	20	NA	± 20 %	AverageRF

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

† SPCC Compound

‡ CCC Compound

Client: Sealaska Environmental Services, LLC
 Project: JBLM AIA/TO 01C

Service Request: K1709106
 Calibration Date: 06/20/2017

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL15445
 Instrument ID: LC10

Column: Synergi Hydro R

Level ID	File ID	Level ID	File ID
A	J:\LC10\Data\062017-254\0620000104.D	G	J:\LC10\Data\062017-254\0620000110.D
B	J:\LC10\Data\062017-254\0620000105.D	H	J:\LC10\Data\062017-254\0620000111.D
C	J:\LC10\Data\062017-254\0620000106.D	I	J:\LC10\Data\062017-254\0620000112.D
D	J:\LC10\Data\062017-254\0620000107.D	J	J:\LC10\Data\062017-254\0620000113.D
E	J:\LC10\Data\062017-254\0620000108.D		
F	J:\LC10\Data\062017-254\0620000109.D		

Analyte Name	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF	Level ID	Amt	RF
HMX	A	20	16000	B	50	16300	C	100	16900	D	200	16800	E	500	16900
	F	1000	17500	G	2000	17300	H	5000	17100	I	10000	16600	J	20000	17100
RDX	A	20	26200	B	50	22700	C	100	22600	D	200	21800	E	500	21200
	F	1000	21900	G	2000	21600	H	5000	21300	I	10000	20700	J	20000	21500
1,3,5-Trinitrobenzene	A	20	48100	B	50	45200	C	100	48800	D	200	48400	E	500	48100
	F	1000	49500	G	2000	49100	H	5000	48300	I	10000	47200	J	20000	48900
1,3-Dinitrobenzene	A	20	63700	B	50	61800	C	100	63500	D	200	63600	E	500	62900
	F	1000	65100	G	2000	64600	H	5000	63400	I	10000	61600	J	20000	63900
3,5-Dinitroaniline	A	20	50800	B	50	50700	C	100	52300	D	200	51800	E	500	51700
	F	1000	53300	G	2000	52700	H	5000	51900	I	10000	51200	J	20000	53000
TETRYL	A	20	36100	B	50	34400	C	100	36200	D	200	35500	E	500	35300
	F	1000	36400	G	2000	36500	H	5000	36100	I	10000	35700	J	20000	37100
Nitrobenzene	A	20	44900	B	50	38300	C	100	40500	D	200	39700	E	500	38700
	F	1000	40600	G	2000	40600	H	5000	39900	I	10000	39000	J	20000	40400
4-Amino-2,6-dinitrotoluene	A	20	31800	B	50	31200	C	100	32000	D	200	32700	E	500	31900
	F	1000	33100	G	2000	33200	H	5000	32500	I	10000	31800	J	20000	33000
2-Amino-4,6-dinitrotoluene	A	20	48800	B	50	43300	C	100	43400	D	200	44500	E	500	43800
	F	1000	45000	G	2000	44900	H	5000	44300	I	10000	43300	J	20000	44800
2,4,6-Trinitrotoluene	A	20	47300	B	50	42200	C	100	43900	D	200	44800	E	500	44000
	F	1000	45800	G	2000	45800	H	5000	45000	I	10000	44100	J	20000	45600
2,6-Dinitrotoluene	A	20	25900	B	50	27200	C	100	29000	D	200	29600	E	500	29100
	F	1000	29700	G	2000	29400	H	5000	30400	I	10000	29500	J	20000	29100
2,4-Dinitrotoluene	A	20	56400	B	50	57700	C	100	60200	D	200	59600	E	500	60000
	F	1000	61900	G	2000	61800	H	5000	59400	I	10000	58200	J	20000	62000
2-Nitrotoluene	A	20	25800	B	50	24200	C	100	25800	D	200	26100	E	500	25800
	F	1000	26700	G	2000	26700	H	5000	26100	I	10000	25500	J	20000	26400
4-Nitrotoluene	A	20	24900	B	50	21000	C	100	23000	D	200	22600	E	500	22300
	F	1000	23500	G	2000	23300	H	5000	22800	I	10000	22200	J	20000	23100

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

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106
Calibration Date: 06/20/2017

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL15445
Instrument ID: LC10

Column: Synergi Hydro R

Analyte Name	Level ID			Level ID			Level ID			Level ID					
	Amt	RF		Amt	RF		Amt	RF		Amt	RF				
3-Nitrotoluene	A	20	30400	B	50	25900	C	100	27500	D	200	27900	E	500	27700
	F	1000	28800	G	2000	28600	H	5000	28100	I	10000	27400	J	20000	28400
1-Chloro-3-nitrobenzene	A	20	25700	B	50	28800	C	100	30200	D	200	30600	E	500	30200
	F	1000	31400	G	2000	31200	H	5000	30800	I	10000	30700	J	20000	31100

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

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106
Calibration Date: 06/20/2017

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL15445
Instrument ID: LC10

Column: Synergi Hydro R

Analyte Name	Compound Type	Calibration Evaluation				
		Fit Type	Eval.	Eval. Result	Q	Control Criteria
HMX	MS	AverageRF	% RSD	2.7		≤ 15
RDX	MS	AverageRF	% RSD	7.0		≤ 15
1,3,5-Trinitrobenzene	MS	AverageRF	% RSD	2.5		≤ 15
1,3-Dinitrobenzene	MS	AverageRF	% RSD	1.7		≤ 15
3,5-Dinitroaniline	MS	AverageRF	% RSD	1.7		≤ 15
TETRYL	MS	AverageRF	% RSD	2.1		≤ 15
Nitrobenzene	MS	AverageRF	% RSD	4.6		≤ 15
4-Amino-2,6-dinitrotoluene	MS	AverageRF	% RSD	2.1		≤ 15
2-Amino-4,6-dinitrotoluene	MS	AverageRF	% RSD	3.6		≤ 15
2,4,6-Trinitrotoluene	MS	AverageRF	% RSD	3.1		≤ 15
2,6-Dinitrotoluene	MS	AverageRF	% RSD	4.6		≤ 15
2,4-Dinitrotoluene	MS	AverageRF	% RSD	3.2		≤ 15
2-Nitrotoluene	MS	AverageRF	% RSD	2.8		≤ 15
4-Nitrotoluene	MS	AverageRF	% RSD	4.4		≤ 15
3-Nitrotoluene	MS	AverageRF	% RSD	4.1		≤ 15
1-Chloro-3-nitrobenzene	SURR	AverageRF	% RSD	5.7		≤ 15

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106
Calibration Date: 06/20/2017
Date Analyzed: 06/21/2017

Second Source Calibration Verification
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration ID: CAL15445
Units: ug/L

File ID: J:\LC10\Data\062017-254\0620000115.D

Column ID: Synergi Hydro R

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	1000	16800	17400	4	NA	± 20 %	AverageRF
RDX	1000	990	22200	22000	-1	NA	± 20 %	AverageRF
1,3,5-Trinitrobenzene	1000	1000	48200	49000	2	NA	± 20 %	AverageRF
1,3-Dinitrobenzene	1000	1000	63400	63500	0	NA	± 20 %	AverageRF
3,5-Dinitroaniline	1000	1000	51900	53500	3	NA	± 20 %	AverageRF
TETRYL	1000	1000	35900	36100	1	NA	± 20 %	AverageRF
Nitrobenzene	1000	980	40300	39600	-2	NA	± 20 %	AverageRF
4-Amino-2,6-dinitrotoluene	1000	1000	32300	33100	3	NA	± 20 %	AverageRF
2-Amino-4,6-dinitrotoluene	1000	1000	44600	45500	2	NA	± 20 %	AverageRF
2,4,6-Trinitrotoluene	1000	1000	44800	45100	1	NA	± 20 %	AverageRF
2,6-Dinitrotoluene	1000	1000	28900	29100	1	NA	± 20 %	AverageRF
2,4-Dinitrotoluene	1000	1000	59700	61300	3	NA	± 20 %	AverageRF
2-Nitrotoluene	1000	1000	25900	26700	3	NA	± 20 %	AverageRF
4-Nitrotoluene	1000	1000	22900	22800	0	NA	± 20 %	AverageRF
3-Nitrotoluene	1000	1000	28100	29200	4	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: JBLM AIA/TO 01C

Service Request: K1709106
Calibration Date: 06/20/2017

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL15446
Instrument ID: LC10

Column: Synergi Hydro 4

Level ID	File ID	Level ID	File ID
A	J:\LC10\Data\062017-210\0620000105.D	F	J:\LC10\Data\062017-210\0620000110.D
B	J:\LC10\Data\062017-210\0620000106.D	G	J:\LC10\Data\062017-210\0620000111.D
C	J:\LC10\Data\062017-210\0620000107.D	H	J:\LC10\Data\062017-210\0620000112.D
D	J:\LC10\Data\062017-210\0620000108.D	I	J:\LC10\Data\062017-210\0620000113.D
E	J:\LC10\Data\062017-210\0620000109.D		

Analyte Name	Level			Level			Level			Level			Level		
	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF	ID	Amt	RF
Nitroglycerin				B	100	21600	C	200	21400	D	500	22500	E	1000	21500
	F	2000	22800	G	5000	21900	H	10000	21400	I	20000	22100			
Pentaerythritol Tetranitrate				B	100	23700	C	200	22600	D	500	23100	E	1000	24200
	F	2000	25900	G	5000	25000	H	10000	23500	I	20000	24700			
1-Chloro-3-nitrobenzene	A	50	1.01E+5	B	100	1.14E+5	C	200	91100	D	500	87400	E	1000	81900
	F	2000	82500	G	5000	81500	H	10000	79900	I	20000	81800			

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

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106
Calibration Date: 06/20/2017

Initial Calibration Summary
Nitroaromatics and Nitramines (Explosives)

Calibration ID: CAL15446
Instrument ID: LC10

Column: Synergi Hydro 4

Analyte Name	Compound Type	Calibration Evaluation				
		Fit Type	Eval.	Eval. Result	Q	Control Criteria
Nitroglycerin	MS	AverageRF	% RSD	2.4		≤ 15
Pentaerythritol Tetranitrate	MS	AverageRF	% RSD	4.5		≤ 15
1-Chloro-3-nitrobenzene	SURR	AverageRF	% RSD	12.9		≤ 15

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106
Calibration Date: 06/20/2017
Date Analyzed: 06/21/2017

Second Source Calibration Verification
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration ID: CAL15446
Units: ug/L

File ID: J:\LC10\Data\062017-210\0620000115.D

Column ID: Synergi Hydro 4

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Nitroglycerin	1000	1100	21900	24100	10	NA	± 20 %	AverageRF
Pentaerythritol Tetranitrate	1000	1100	24100	25600	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: JBLM AIA/TO 01C

Service Request: K1709106
Date Analyzed: 09/07/2017

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 06/20/2017
Calibration ID: CAL15445
Analysis Lot: KWG1708419
Units: ug/L
Column ID: Synergi Hydro R

File ID: I:\LC10\DATA\090717-254\0907000103.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	1000	16800	17100	1	NA	± 20	AverageRF
RDX	1000	1000	22200	22400	1	NA	± 20	AverageRF
1,3,5-Trinitrobenzene	1000	1000	48200	48900	2	NA	± 20	AverageRF
1,3-Dinitrobenzene	1000	1000	63400	64300	1	NA	± 20	AverageRF
3,5-Dinitroaniline	1000	1000	51900	52200	0	NA	± 20	AverageRF
TETRYL	1000	990	35900	35700	-1	NA	± 20	AverageRF
Nitrobenzene	1000	980	40300	39500	-2	NA	± 20	AverageRF
4-Amino-2,6-dinitrotoluene	1000	1000	32300	33100	3	NA	± 20	AverageRF
2-Amino-4,6-dinitrotoluene	1000	1000	44600	45000	1	NA	± 20	AverageRF
2,4,6-Trinitrotoluene	1000	990	44800	44400	-1	NA	± 20	AverageRF
2,6-Dinitrotoluene	1000	1000	28900	30300	5	NA	± 20	AverageRF
2,4-Dinitrotoluene	1000	1000	59700	60200	1	NA	± 20	AverageRF
2-Nitrotoluene	1000	1000	25900	26000	0	NA	± 20	AverageRF
4-Nitrotoluene	1000	1000	22900	23300	2	NA	± 20	AverageRF
3-Nitrotoluene	1000	1000	28100	28500	2	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1100	30100	32400	8	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106
Date Analyzed: 09/07/2017

**Continuing Calibration Verification Summary
 Nitroaromatics and Nitramines (Explosives)**

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 06/20/2017
Calibration ID: CAL15446
Analysis Lot: KWG1708420
Units: ug/L
Column ID: Synergi Hydro 4

File ID: I:\LC10\DATA\090717-210\0907000103.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Nitroglycerin	1000	920	21900	20000	-8	NA	± 20	AverageRF
Pentaerythritol Tetranitrate	1000	1100	24100	25700	7	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	980	89000	86800	-2	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106
Date Analyzed: 09/07/2017

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 06/20/2017
Calibration ID: CAL15445
Analysis Lot: KWG1708419
Units: ug/L
Column ID: Synergi Hydro R

File ID: I:\LC10\DATA\090717-254\0907000112.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	1000	16800	17300	3	NA	± 20	AverageRF
RDX	1000	1000	22200	22400	1	NA	± 20	AverageRF
1,3,5-Trinitrobenzene	1000	1000	48200	48900	2	NA	± 20	AverageRF
1,3-Dinitrobenzene	1000	1000	63400	64300	1	NA	± 20	AverageRF
3,5-Dinitroaniline	1000	1000	51900	53300	3	NA	± 20	AverageRF
TETRYL	1000	990	35900	35500	-1	NA	± 20	AverageRF
Nitrobenzene	1000	1000	40300	40300	0	NA	± 20	AverageRF
4-Amino-2,6-dinitrotoluene	1000	1000	32300	33400	3	NA	± 20	AverageRF
2-Amino-4,6-dinitrotoluene	1000	1000	44600	45400	2	NA	± 20	AverageRF
2,4,6-Trinitrotoluene	1000	1000	44800	44800	0	NA	± 20	AverageRF
2,6-Dinitrotoluene	1000	1000	28900	29700	3	NA	± 20	AverageRF
2,4-Dinitrotoluene	1000	1000	59700	61300	3	NA	± 20	AverageRF
2-Nitrotoluene	1000	1000	25900	26000	0	NA	± 20	AverageRF
4-Nitrotoluene	1000	1000	22900	23600	3	NA	± 20	AverageRF
3-Nitrotoluene	1000	1000	28100	28600	2	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1100	30100	32500	8	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106
Date Analyzed: 09/07/2017

**Continuing Calibration Verification Summary
 Nitroaromatics and Nitramines (Explosives)**

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 06/20/2017
Calibration ID: CAL15446
Analysis Lot: KWG1708420
Units: ug/L
Column ID: Synergi Hydro 4

File ID: I:\LC10\DATA\090717-210\0907000112.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Nitroglycerin	1000	980	21900	21500	-2	NA	± 20	AverageRF
Pentaerythritol Tetranitrate	1000	1100	24100	26300	9	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	960	89000	85700	-4	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106
Date Analyzed: 09/08/2017

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 06/20/2017
Calibration ID: CAL15445
Analysis Lot: KWG1708419
Units: ug/L

File ID: I:\LC10\DATA\090717-254\0907000123.D

Column ID: Synergi Hydro R

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	1000	16800	17300	3	NA	± 20	AverageRF
RDX	1000	1000	22200	22700	2	NA	± 20	AverageRF
1,3,5-Trinitrobenzene	1000	1000	48200	48500	1	NA	± 20	AverageRF
1,3-Dinitrobenzene	1000	1000	63400	64400	2	NA	± 20	AverageRF
3,5-Dinitroaniline	1000	1000	51900	52900	2	NA	± 20	AverageRF
TETRYL	1000	950	35900	34200	-5	NA	± 20	AverageRF
Nitrobenzene	1000	980	40300	39400	-2	NA	± 20	AverageRF
4-Amino-2,6-dinitrotoluene	1000	1000	32300	32900	2	NA	± 20	AverageRF
2-Amino-4,6-dinitrotoluene	1000	1000	44600	45600	2	NA	± 20	AverageRF
2,4,6-Trinitrotoluene	1000	1000	44800	44900	0	NA	± 20	AverageRF
2,6-Dinitrotoluene	1000	1000	28900	29500	2	NA	± 20	AverageRF
2,4-Dinitrotoluene	1000	1000	59700	62200	4	NA	± 20	AverageRF
2-Nitrotoluene	1000	1000	25900	26200	1	NA	± 20	AverageRF
4-Nitrotoluene	1000	1000	22900	23600	3	NA	± 20	AverageRF
3-Nitrotoluene	1000	1000	28100	28600	2	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1100	30100	32800	9	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106
Date Analyzed: 09/08/2017

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 06/20/2017
Calibration ID: CAL15446
Analysis Lot: KWG1708420
Units: ug/L
Column ID: Synergi Hydro 4

File ID: I:\LC10\DATA\090717-210\0907000123.D

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Nitroglycerin	1000	1000	21900	22500	3	NA	± 20	AverageRF
Pentaerythritol Tetranitrate	1000	1100	24100	26500	10	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	940	89000	83700	-6	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106
Date Analyzed: 09/29/2017

**Continuing Calibration Verification Summary
 Nitroaromatics and Nitramines (Explosives)**

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 06/09/2017
Calibration ID: CAL15431
Analysis Lot: KWG1708806
Units: ug/L
Column ID: Ultra Aromax 5u

File ID: I:\LC08\DATA\092917-210\09290000104.

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Nitroglycerin	1000	1100	24300	25400	NA	7	± 20	Linear
Pentaerythritol Tetranitrate	1000	1100	23400	26000	11	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1100	74000	82000	11	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106
Date Analyzed: 09/29/2017

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 06/09/2017
Calibration ID: CAL15548
Analysis Lot: KWG1708882
Units: ug/L

File ID: I:\LC08\DATA\092917-254\09290000104.

Column ID: Ultra Aromax 5u

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	1100	16800	18100	8	NA	± 20	AverageRF
RDX	1000	1100	19300	21500	11	NA	± 20	AverageRF
1,3,5-Trinitrobenzene	1000	1100	44100	47800	8	NA	± 20	AverageRF
1,3-Dinitrobenzene	1000	1100	56000	61900	11	NA	± 20	AverageRF
3,5-Dinitroaniline	1000	1200	43400	51300	18	NA	± 20	AverageRF
TETRYL	1000	1200	35100	37100	NA	18	± 20	Linear
Nitrobenzene	1000	1100	36100	39100	8	NA	± 20	AverageRF
4-Amino-2,6-dinitrotoluene	1000	1100	31300	33300	6	NA	± 20	AverageRF
2-Amino-4,6-dinitrotoluene	1000	1100	39700	45400	14	NA	± 20	AverageRF
2,4,6-Trinitrotoluene	1000	1200	38400	45100	17	NA	± 20	AverageRF
2,6-Dinitrotoluene	1000	1100	28600	30700	7	NA	± 20	AverageRF
2,4-Dinitrotoluene	1000	1000	54100	55100	2	NA	± 20	AverageRF
2-Nitrotoluene	1000	1100	23500	25900	10	NA	± 20	AverageRF
4-Nitrotoluene	1000	1000	21300	22100	4	NA	± 20	AverageRF
3-Nitrotoluene	1000	1100	25100	28200	12	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1100	27300	29400	8	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106
Date Analyzed: 09/30/2017

**Continuing Calibration Verification Summary
 Nitroaromatics and Nitramines (Explosives)**

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 06/09/2017
Calibration ID: CAL15431
Analysis Lot: KWG1708806
Units: ug/L
Column ID: Ultra Aromax 5u

File ID: I:\LC08\DATA\092917-210\09290000112.

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Nitroglycerin	1000	990	24300	23700	NA	-1	± 20	Linear
Pentaerythritol Tetranitrate	1000	1200	23400	27900	19	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1100	74000	82100	11	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106
Date Analyzed: 09/30/2017

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 06/09/2017
Calibration ID: CAL15548
Analysis Lot: KWG1708882
Units: ug/L

File ID: I:\LC08\DATA\092917-254\09290000112.

Column ID: Ultra Aromax 5u

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	1100	16800	18300	9	NA	± 20	AverageRF
RDX	1000	1100	19300	20900	8	NA	± 20	AverageRF
1,3,5-Trinitrobenzene	1000	1100	44100	48400	10	NA	± 20	AverageRF
1,3-Dinitrobenzene	1000	1100	56000	62200	11	NA	± 20	AverageRF
3,5-Dinitroaniline	1000	1200	43400	51400	19	NA	± 20	AverageRF
TETRYL	1000	1100	35100	34400	NA	10	± 20	Linear
Nitrobenzene	1000	1100	36100	39000	8	NA	± 20	AverageRF
4-Amino-2,6-dinitrotoluene	1000	1100	31300	34800	11	NA	± 20	AverageRF
2-Amino-4,6-dinitrotoluene	1000	1100	39700	45200	14	NA	± 20	AverageRF
2,4,6-Trinitrotoluene	1000	1100	38400	44000	15	NA	± 20	AverageRF
2,6-Dinitrotoluene	1000	1000	28600	29500	3	NA	± 20	AverageRF
2,4-Dinitrotoluene	1000	1000	54100	56700	5	NA	± 20	AverageRF
2-Nitrotoluene	1000	1100	23500	25200	7	NA	± 20	AverageRF
4-Nitrotoluene	1000	1100	21300	22900	8	NA	± 20	AverageRF
3-Nitrotoluene	1000	1100	25100	27600	10	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1100	27300	30600	12	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106
Date Analyzed: 09/30/2017

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 06/09/2017
Calibration ID: CAL15431
Analysis Lot: KWG1708806
Units: ug/L
Column ID: Ultra Aromax 5u

File ID: I:\LC08\DATA\092917-210\09290000121.

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Nitroglycerin	1000	1000	24300	24500	NA	3	± 20	Linear
Pentaerythritol Tetranitrate	1000	1200	23400	27500	17	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1100	74000	78100	6	NA	± 20	AverageRF

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

QA/QC Results

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106
Date Analyzed: 09/30/2017

Continuing Calibration Verification Summary
Nitroaromatics and Nitramines (Explosives)

Calibration Type: External Standard
Analysis Method: 8330B

Calibration Date: 06/09/2017
Calibration ID: CAL15548
Analysis Lot: KWG1708882
Units: ug/L

File ID: I:\LC08\DATA\092917-254\09290000121.

Column ID: Ultra Aromax 5u

Analyte Name	Expected	Result	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
HMX	1000	1100	16800	18500	11	NA	± 20	AverageRF
RDX	1000	1100	19300	21300	10	NA	± 20	AverageRF
1,3,5-Trinitrobenzene	1000	1100	44100	48800	11	NA	± 20	AverageRF
1,3-Dinitrobenzene	1000	1100	56000	62700	12	NA	± 20	AverageRF
3,5-Dinitroaniline	1000	1200	43400	52500	21 *	NA	± 20	AverageRF
TETRYL	1000	1100	35100	34100	NA	9	± 20	Linear
Nitrobenzene	1000	1100	36100	39100	9	NA	± 20	AverageRF
4-Amino-2,6-dinitrotoluene	1000	1100	31300	35100	12	NA	± 20	AverageRF
2-Amino-4,6-dinitrotoluene	1000	1100	39700	45400	14	NA	± 20	AverageRF
2,4,6-Trinitrotoluene	1000	1200	38400	44500	16	NA	± 20	AverageRF
2,6-Dinitrotoluene	1000	1100	28600	30100	5	NA	± 20	AverageRF
2,4-Dinitrotoluene	1000	1100	54100	56900	5	NA	± 20	AverageRF
2-Nitrotoluene	1000	1100	23500	25700	9	NA	± 20	AverageRF
4-Nitrotoluene	1000	1100	21300	23200	9	NA	± 20	AverageRF
3-Nitrotoluene	1000	1100	25100	27900	11	NA	± 20	AverageRF
1-Chloro-3-nitrobenzene	1000	1100	27300	30600	12	NA	± 20	AverageRF

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

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106

Analysis Run Log
Nitroaromatics and Nitramines (Explosives)

Analysis Method: 8330B

Analysis Lot: KWG1708806
Instrument ID: LC08
Column: Ultra Aromax 5u

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
90000103.D	Instrument Blank	KWG1708806-4	9/29/2017	16:23		9/29/2017	17:41
90000104.D	Continuing Calibration Verification	KWG1708806-1	9/29/2017	17:43		9/29/2017	19:01
90000105.D	Method Blank	KWG1707704-4	9/29/2017	19:04		9/29/2017	20:22
90000106.D	AIA170828FHDS	K1709106-001	9/29/2017	20:24		9/29/2017	21:42
90000109.D	AIA170828AIASP03	K1709106-004	9/30/2017	00:25		9/30/2017	01:43
90000112.D	Continuing Calibration Verification	KWG1708806-2	9/30/2017	04:26		9/30/2017	05:44
90000113.D	Instrument Blank	KWG1708806-5	9/30/2017	05:46		9/30/2017	07:04
90000116.D	AIA17082898IAMW03	K1709106-009	9/30/2017	09:47		9/30/2017	11:05
90000117.D	AIA17082898IAMW04	K1709106-010	9/30/2017	11:08		9/30/2017	12:26
90000118.D	AIA17082898IAMW05	K1709106-011	9/30/2017	12:28		9/30/2017	13:46
90000119.D	AIA17082898IAMW11	K1709106-012	9/30/2017	13:48		9/30/2017	15:06
90000120.D	AIA170828IDW	K1709106-013	9/30/2017	15:08		9/30/2017	16:26
90000121.D	Continuing Calibration Verification	KWG1708806-3	9/30/2017	16:29		9/30/2017	17:47
90000122.D	Instrument Blank	KWG1708806-6	9/30/2017	17:49		9/30/2017	19:07

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

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106

Analysis Run Log
Nitroaromatics and Nitramines (Explosives)

Analysis Method: 8330B

Analysis Lot: KWG1708882
Instrument ID: LC08
Column: Ultra Aromax 5u

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
90000103.D	Instrument Blank	KWG1708882-4	9/29/2017	16:23		9/29/2017	17:41
90000104.D	Continuing Calibration Verification	KWG1708882-1	9/29/2017	17:43		9/29/2017	19:01
90000105.D	Method Blank	KWG1707704-4	9/29/2017	19:04		9/29/2017	20:22
90000106.D	AIA170828FHDS	K1709106-001	9/29/2017	20:24		9/29/2017	21:42
90000107.D	AIA170828AIASP01	K1709106-002	9/29/2017	21:44		9/29/2017	23:02
90000108.D	AIA170828AIASP02	K1709106-003	9/29/2017	23:05		9/30/2017	00:23
90000109.D	AIA170828AIASP03	K1709106-004	9/30/2017	00:25		9/30/2017	01:43
90000110.D	AIA170828AIASP04	K1709106-005	9/30/2017	01:45		9/30/2017	03:03
90000112.D	Continuing Calibration Verification	KWG1708882-2	9/30/2017	04:26		9/30/2017	05:44
90000113.D	Instrument Blank	KWG1708882-5	9/30/2017	05:46		9/30/2017	07:04
90000115.D	AIA17082898IAMW02	K1709106-008	9/30/2017	08:27		9/30/2017	09:45
90000116.D	AIA17082898IAMW03	K1709106-009	9/30/2017	09:47		9/30/2017	11:05
90000117.D	AIA17082898IAMW04	K1709106-010	9/30/2017	11:08		9/30/2017	12:26
90000121.D	Continuing Calibration Verification	KWG1708882-3	9/30/2017	16:29		9/30/2017	17:47
90000122.D	Instrument Blank	KWG1708882-6	9/30/2017	17:49		9/30/2017	19:07

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

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106

Analysis Run Log
Nitroaromatics and Nitramines (Explosives)

Analysis Method: 8330B

Analysis Lot: KWG1708419
Instrument ID: LC10
Column: Synergi Hydro R

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
07000102.D	Instrument Blank	KWG1708419-4	9/7/2017	14:28		9/7/2017	15:04
07000103.D	Continuing Calibration Verification	KWG1708419-1	9/7/2017	15:18		9/7/2017	15:54
07000104.D	Method Blank	KWG1707704-4	9/7/2017	16:08		9/7/2017	16:44
07000105.D	Lab Control Sample	KWG1707704-3	9/7/2017	16:58		9/7/2017	17:34
07000106.D	AIA170828AIASP01	K1709106-002	9/7/2017	17:48		9/7/2017	18:24
07000107.D	AIA170828AIASP02	K1709106-003	9/7/2017	18:37		9/7/2017	19:13
07000108.D	AIA170828AIASP03	K1709106-004	9/7/2017	19:27		9/7/2017	20:03
07000109.D	AIA170828AIASP04	K1709106-005	9/7/2017	20:17		9/7/2017	20:53
07000110.D	AIA170828AIASP05	K1709106-006	9/7/2017	21:07		9/7/2017	21:43
07000111.D	AIA17082898IAMW01	K1709106-007	9/7/2017	21:57		9/7/2017	22:33
07000112.D	Continuing Calibration Verification	KWG1708419-2	9/7/2017	22:46		9/7/2017	23:22
07000113.D	Instrument Blank	KWG1708419-5	9/7/2017	23:36		9/8/2017	00:12
07000114.D	AIA17082898IAMW02	K1709106-008	9/8/2017	00:26		9/8/2017	01:02
07000115.D	AIA17082898IAMW03	K1709106-009	9/8/2017	01:16		9/8/2017	01:52
07000116.D	AIA17082898IAMW04	K1709106-010	9/8/2017	02:05		9/8/2017	02:41
07000117.D	AIA17082898IAMW05	K1709106-011	9/8/2017	02:55		9/8/2017	03:31
07000118.D	AIA17082898IAMW11	K1709106-012	9/8/2017	03:45		9/8/2017	04:21
07000119.D	AIA170828IDW	K1709106-013	9/8/2017	04:35		9/8/2017	05:11
07000120.D	AIA170828FHDS	K1709106-001	9/8/2017	05:25		9/8/2017	06:01
07000121.D	AIA170828FHDSMS	KWG1707704-1	9/8/2017	06:14		9/8/2017	06:50
07000122.D	AIA170828FHDSMS	KWG1707704-2	9/8/2017	07:04		9/8/2017	07:40
07000123.D	Continuing Calibration Verification	KWG1708419-3	9/8/2017	07:54		9/8/2017	08:30
07000124.D	Instrument Blank	KWG1708419-6	9/8/2017	08:44		9/8/2017	09:20

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

Client: Sealaska Environmental Services, LLC
Project: JBLM AIA/TO 01C

Service Request: K1709106

Analysis Run Log
Nitroaromatics and Nitramines (Explosives)

Analysis Method: 8330B

Analysis Lot: KWG1708420
Instrument ID: LC10
Column: Synergi Hydro 4

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
07000102.D	Instrument Blank	KWG1708420-4	9/7/2017	14:28		9/7/2017	15:04
07000103.D	Continuing Calibration Verification	KWG1708420-1	9/7/2017	15:18		9/7/2017	15:54
07000104.D	Method Blank	KWG1707704-4	9/7/2017	16:08		9/7/2017	16:44
07000105.D	Lab Control Sample	KWG1707704-3	9/7/2017	16:58		9/7/2017	17:34
07000106.D	AIA170828AIASP01	K1709106-002	9/7/2017	17:48		9/7/2017	18:24
07000107.D	AIA170828AIASP02	K1709106-003	9/7/2017	18:37		9/7/2017	19:13
07000108.D	AIA170828AIASP03	K1709106-004	9/7/2017	19:27		9/7/2017	20:03
07000109.D	AIA170828AIASP04	K1709106-005	9/7/2017	20:17		9/7/2017	20:53
07000110.D	AIA170828AIASP05	K1709106-006	9/7/2017	21:07		9/7/2017	21:43
07000111.D	AIA17082898IAMW01	K1709106-007	9/7/2017	21:57		9/7/2017	22:33
07000112.D	Continuing Calibration Verification	KWG1708420-2	9/7/2017	22:46		9/7/2017	23:22
07000113.D	Instrument Blank	KWG1708420-5	9/7/2017	23:36		9/8/2017	00:12
07000114.D	AIA17082898IAMW02	K1709106-008	9/8/2017	00:26		9/8/2017	01:02
07000115.D	AIA17082898IAMW03	K1709106-009	9/8/2017	01:16		9/8/2017	01:52
07000116.D	AIA17082898IAMW04	K1709106-010	9/8/2017	02:05		9/8/2017	02:41
07000117.D	AIA17082898IAMW05	K1709106-011	9/8/2017	02:55		9/8/2017	03:31
07000118.D	AIA17082898IAMW11	K1709106-012	9/8/2017	03:45		9/8/2017	04:21
07000119.D	AIA170828IDW	K1709106-013	9/8/2017	04:35		9/8/2017	05:11
07000120.D	AIA170828FHDS	K1709106-001	9/8/2017	05:25		9/8/2017	06:01
07000121.D	AIA170828FHDSMS	KWG1707704-1	9/8/2017	06:14		9/8/2017	06:50
07000122.D	AIA170828FHDSMS	KWG1707704-2	9/8/2017	07:04		9/8/2017	07:40
07000123.D	Continuing Calibration Verification	KWG1708420-3	9/8/2017	07:54		9/8/2017	08:30
07000124.D	Instrument Blank	KWG1708420-6	9/8/2017	08:44		9/8/2017	09:20

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

QA/QC Results

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

Service Request: K1709106
Date Extracted: 08/31/2017

Extraction Prep Log
Nitroaromatics and Nitramines (Explosives)

Extraction Method: METHOD
Analysis Method: 8330B

Extraction Lot: KWG1707704
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
AIA170828FHDS	K1709106-001	08/28/17	08/29/17	1060ml	4ml	NA	
AIA170828FHDSRE	K1709106-001	08/28/17	08/29/17	1060ml	4ml	NA	
AIA170828AIASP01RE	K1709106-002	08/28/17	08/29/17	1040ml	4ml	NA	
AIA170828AIASP01	K1709106-002	08/28/17	08/29/17	1040ml	4ml	NA	
AIA170828AIASP02RE	K1709106-003	08/28/17	08/29/17	1030ml	4ml	NA	
AIA170828AIASP02	K1709106-003	08/28/17	08/29/17	1030ml	4ml	NA	
AIA170828AIASP03RE	K1709106-004	08/28/17	08/29/17	1035ml	4ml	NA	
AIA170828AIASP03	K1709106-004	08/28/17	08/29/17	1035ml	4ml	NA	
AIA170828AIASP04RE	K1709106-005	08/28/17	08/29/17	1060ml	4ml	NA	
AIA170828AIASP04	K1709106-005	08/28/17	08/29/17	1060ml	4ml	NA	
AIA170828AIASP05	K1709106-006	08/28/17	08/29/17	1070ml	4ml	NA	
AIA17082898IAMW01	K1709106-007	08/28/17	08/29/17	1040ml	4ml	NA	
AIA17082898IAMW02	K1709106-008	08/28/17	08/29/17	1040ml	4ml	NA	
AIA17082898IAMW02RE	K1709106-008	08/28/17	08/29/17	1040ml	4ml	NA	
AIA17082898IAMW03	K1709106-009	08/28/17	08/29/17	1040ml	4ml	NA	
AIA17082898IAMW03RE	K1709106-009	08/28/17	08/29/17	1040ml	4ml	NA	
AIA17082898IAMW04RE	K1709106-010	08/28/17	08/29/17	1040ml	4ml	NA	
AIA17082898IAMW04	K1709106-010	08/28/17	08/29/17	1040ml	4ml	NA	
AIA17082898IAMW05RE	K1709106-011	08/28/17	08/29/17	1045ml	4ml	NA	
AIA17082898IAMW05	K1709106-011	08/28/17	08/29/17	1045ml	4ml	NA	
AIA17082898IAMW11RE	K1709106-012	08/28/17	08/29/17	1040ml	4ml	NA	
AIA17082898IAMW11	K1709106-012	08/28/17	08/29/17	1040ml	4ml	NA	
AIA170828IDWRE	K1709106-013	08/28/17	08/29/17	1000ml	4ml	NA	
AIA170828IDW	K1709106-013	08/28/17	08/29/17	1000ml	4ml	NA	
Method Blank	KWG1707704-4	NA	NA	1000ml	4ml	NA	
AIA170828FHDSMS	KWG1707704-1	08/28/17	08/29/17	1040ml	4ml	NA	
AIA170828FHDSMS	KWG1707704-2	08/28/17	08/29/17	1040ml	4ml	NA	
Lab Control Sample	KWG1707704-3	NA	NA	1000ml	4ml	NA	

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

Confirmation Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017
Date Extracted: 08/31/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA170828AIASP01
Lab Code: K1709106-002
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
HMX	0.10	0.037	0.17	0.24	34.1		1	09/07/17
RDX	0.20	0.11	0.18	0.25	32.6	J	1	09/07/17

Confirmation Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017
Date Extracted: 08/31/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA170828AIASP02
Lab Code: K1709106-003
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
HMX	0.10	0.037	0.13	0.18	32.3		1	09/07/17
RDX	0.20	0.11	0.14	0.13	7.4	J	1	09/07/17

Confirmation Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017
Date Extracted: 08/31/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA170828AIASP03
Lab Code: K1709106-004
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
RDX	0.20	0.11	0.40	0.53	28.0		1	09/07/17

Confirmation Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017
Date Extracted: 08/31/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA170828AIASP04
Lab Code: K1709106-005
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
RDX	0.20	0.11	0.31	0.41	27.8		1	09/07/17

Confirmation Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017
Date Extracted: 08/31/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA170828AIASP05
Lab Code: K1709106-006
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
RDX	0.20	0.11	0.14			JN	1	09/07/17

Confirmation Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017
Date Extracted: 08/31/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA17082898IAMW01
Lab Code: K1709106-007
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
RDX	0.20	0.11	0.12			JN	1	09/07/17
3-Nitrotoluene	0.10	0.034	0.077			JN	1	09/07/17

Confirmation Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017
Date Extracted: 08/31/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA17082898IAMW02
Lab Code: K1709106-008
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
HMX	0.10	0.037	0.16	0.20	22.2		1	09/08/17
RDX	0.20	0.11	0.16	0.17	6.1	J	1	09/08/17

Confirmation Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017
Date Extracted: 08/31/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA17082898IAMW03
Lab Code: K1709106-009
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
HMX	0.10	0.037	0.040	0.030	28.6	J	1	09/08/17
RDX	0.20	0.11	0.44	0.62	34.0		1	09/08/17

Confirmation Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017
Date Extracted: 08/31/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA17082898IAMW04
Lab Code: K1709106-010
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
RDX	0.20	0.11	0.27	0.38	33.8		1	09/08/17

Confirmation Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017
Date Extracted: 08/31/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA17082898IAMW05
Lab Code: K1709106-011
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
HMX	0.10	0.037	0.079			JN	1	09/08/17
RDX	0.20	0.11	0.15			JN	1	09/08/17
3-Nitrotoluene	0.10	0.034	0.057			JN	1	09/08/17

Confirmation Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017
Date Extracted: 08/31/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA17082898IAMW11
Lab Code: K1709106-012
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
HMX	0.10	0.037	0.069			JN	1	09/08/17
3-Nitrotoluene	0.10	0.034	0.039			JN	1	09/08/17

Confirmation Results

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

Service Request: K1709106
Date Collected: 08/28/2017
Date Received: 08/29/2017
Date Extracted: 08/31/2017

Nitroaromatics and Nitramines (Explosives)

Sample Name: AIA170828IDW
Lab Code: K1709106-013
Extraction Method: METHOD
Analysis Method: 8330B

Units: ug/L
Basis: NA
Level: Low

Analyte Name	LOQ	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
HMX	0.10	0.037	0.046			JN	1	09/08/17
RDX	0.20	0.11	0.19			JN	1	09/08/17
2,6-Dinitrotoluene	0.20	0.054	0.061			JN	1	09/08/17
2-Nitrotoluene	0.10	0.032	0.044			JN	1	09/08/17
3-Nitrotoluene	0.10	0.034	0.078			JN	1	09/08/17

Tetra Tech, Inc.

Data Review Report

Project Name: JBLM/Artillery Impact Area
Project Number: K1709106
Collection Date: 08/28/17
Laboratory: ALS Environmental, Kelso, WA

DATA REVIEW

- Eleven water samples and one field duplicate were collected and analyzed for explosives by EPA method SW-846 8330. One Investigation Derived Waste (IDW) sample was also collected. A review was performed of the following parameters as applicable:
 - Chain-of-custody (C-O-C) documentation
 - Holding time compliance
 - Blank sample data
 - Spike sample recovery
 - Duplicate samples
 - Surrogate recoveries

Sample Identification:

AIA170828FHDS
AIA170828AIASP01
AIA170828AIASP02
AIA170828AIASP03
AIA170828AIASP04
AIA170828AIASP05
AIA170828981AMW01
AIA170828981AMW02
AIA170828981AMW03
AIA170828981AMW04
AIA170828981AMW05
AIA170828981AMW11
AIA170828IDW

Review Summary

1. Holding Time

All holding times were met. The coolers arrived at acceptable temperature levels. All chain of custody documentation and sample labels were in order.

2. Matrix Spikes

Sample AIA170828FHDS was selected as the matrix spike/matrix spike duplicate for quality control purposes. All matrix spike and matrix spike duplicate sample recoveries were within acceptable limits of control except for Pentaerythritol Tetranitrate which was recovered high in the matrix spike and matrix spike duplicate sample. All MS/MSD RPD's were within control limits. There is no impact for the high recovery of Pentaerythritol Tetranitrate since all sample results were non-detect.

3. Blanks

The method blank had no target analytes detected.

4. Duplicates

Sample AIA170828981AMW11 was collected as a field duplicate for sample AIA170828981AMW01. 3-Nitrotoluene was detected in both samples above the method detection limit and below the sample quantitation limit. RDX was detected in the field sample and HMX in the field duplicate sample above the method detection limit and below the sample quantitation limit and not detected in the other sample. There is no impact on the data for duplicate precision with the low concentrations detected in the samples.

5. Laboratory Control Samples

All laboratory control sample recoveries were within acceptable limits of control except for Pentaerythritol Tetranitrate which was recovered high. There is no impact for the high recovery of Pentaerythritol Tetranitrate since all sample results were non-detect.

6. Surrogates

All surrogate recoveries were within acceptable limits of control.

7. Comments

Manual integration was performed to correct the automated data program integration. The manual integration was performed in accordance with NELAP and DOD QA/QC protocol. All data are complete and usable.

TO OIB JBLM LAC SAMPLING 2017 MAR 21

ON SITE LC-1167 SAMPLE PDB

1430 COLLECT SAMPLE LC170321LC1167-1
3-40ML VOA W/HCI VOCs (5) 8260C

ON SITE LC-219 SAMPLE PDB

1440 COLLECT SAMPLE LC170321LC219-1
3-40ML VOA W/HCI VOCs (5) 8260C

ON SITE LC-216 SAMPLE PDB

1450 COLLECT SAMPLE LC170321LC216-1
3-40ML VOA W/HCI VOCs (5) 8260C

ON SITE LC-182 SAMPLE PDB

1500 COLLECT SAMPLE LC170321LC182-1
3-40ML VOA W/HCI VOCs (5) 8260C

ON SITE LC-109 SAMPLE PDB

1515 COLLECT SAMPLE LC170321LC109-1 MS/MSD
5-40ML VOA W/HCI VOCs (5) 8260C

ON SITE FL-6 SAMPLE PDB

1525 COLLECT SAMPLE LC170321^{at 117}FL-6-1 MS/MSD
5-40ML VOA W/HCI VOCs (5) 8260C

ON SITE LC-202 SAMPLE PDB

1545 COLLECT SAMPLE LC170321LC202-1
3-40ML VOA W/HCI VOCs (5) 8260C

ON SITE LF2 SHED DEMOB
S. PATTERSON AND T. MALAMAKAL
OFF SITE

[Signature]

03/21/17

TO OIB JBLM AIA SAMPLING 2017 MAR 21

06:5 S. PATTERSON, R. BOYD PICK UP FIELD TRUCK

07:00 S. PATTERSON, R. BOYD, W. BOWLES AND T. MALAMAKAL ON SITE

CONDUCT TAILGATE SAFETY BRIEFING
SSHO-S. PATTERSON

TOPICS INCLUDE:

- CUTS, SCRAPES, BURNS, AMPUTATIONS
- SLIPS, TRIPS, FALLS
- BUDDY SYSTEM
- VEHICLE OPERATIONS
- PROPER PPE - LEVEL D
 - SAFETY GLASS, SAFETY TOED BOOTS, HI VIS VEST, GLOVES

WX: CLOUDY W/RAIN POSSIBLE THUNDER
43-50°F, WIND 10-20 MPH

ON SITE LF2 SHED

MOB FOR SAMPLE EVENT

WORK IN TEAMS

1-WELL SAMPLE TEAM: S.P. & W.B.

2-SEEP SAMPLE TEAM: T.M. & R.B.

TEAM 1 ON SITE 9A-1A-MW03

SET UP TO SAMPLE VIA SUBMERIBLE PUMP - DEDICATED

[Signature]

03/21/17

TO OIB JBLM AIA SAMPLING 20 APR 10
DATA DTW - 66.43 FT BTOC

UNABLE TO PULL WATER FROM WELL
PULL PUMP

SETUP TO SAMPLE VIA NON-DEDICATED
SUBMERSIBLE PUMP

0917 START PURGE SET FLOW RATE: 420 mL/min

0922 CONNECT TO FLOW CELL

0925 COLLECT PARAMETERS - LISTED ON PURGE
FORM

0937 PARAMETERS STABILIZE: PURGE VOL. - 1130L,
DTW - 66.40 FT BTOC, PH - 6.65, COND. - 0.116 mS/cm,
TURB. - 0.0 NTU, DO - 8.55 mg/L, TEMP. - 15.40°C,
ORP - 148 mV, SLIGHT BROWN TINT, ODORLESS

0940 COLLECT SAMPLE AIA170410981AMW03
2-1L AMBER WP NITROAROMATICS/NITRAMINES
EPA SW 846-8330

DTW - 60.45 FT BTOC

TEAM 2 - ON SITE FISH HATCHERY

0940 COLLECT SAMPLE AIA170410FHDS NIS/MSD
6-1L AMBER WP NITROAROMATICS/NITRAMINES
EPA SW 846-8330

TEAM 2 - ON SITE AIA-SP01

0955 COLLECT SAMPLE AIA170410A1ASPO1
2-1L AMBER WP NITROAROMATICS/NITRAMINES

UADP 04/10/10

TO OIB JBLM AIA SAMPLING 20 APR 10
EPA SW 846-8330

TEAM 2 - ON SITE AIA-SP03

0925 COLLECT SAMPLE AIA170410A1ASPO3

2-1L AMBER WP NITROAROMATICS/
NITRAMINES EPA SW 846-8330

1000 T. MALAMUKAL RADIO IN FOR ACCESS
ACCESS DENIED

T. MALAMUKAL CONTACT MUKESH
S. PATTERSON CONTACT A. VERNICK
POSSIBLE UNO ON SITE

WAIT TO HEAR ON ACCESS

TEAM 1 - ON SITE 985-1A-MW02

SET UP TO SAMPLE VIA SUBMERSIBLE
PUMP - DEDICATED

1034 DTW - 31.88 FT BTOC

1036 START PURGE SET FLOW RATE: 350 mL/min

1038 CONNECT TO FLOW CELL

1041 COLLECT PARAMETERS - LISTED ON PURGE FORM

1050 PARAMETERS STABILIZE: PURGE VOL. - 6.50L,
DTW - 31.93 FT BTOC, PH - 6.49, COND. - 0.135 mS/cm,
TURB. - 0.0 NTU, DO - 6.77 mg/L, TEMP. - 15.0°C,
ORP - 175 mV, CLEAR, ODORLESS

1055 COLLECT SAMPLE AIA170410981AMW02
2-1L AMBER WP NITROAROMATICS/

UADP 04/10/10

TO OIB JBLM AIA SAMPLING 20 APR 10
 NITRAMINES EPA SW 846-8330

TEAM 2 ON SITE AIA-SPO2

1110 COLLECT SAMPLE AIA170410AIA SPO2

2-IL AMBER UP NITROAROMATICS/NITRAMINES
 EPA SW 846-8330

TEAM 2 COLLECT DTWS

TIME	WELL ID	DTW	DTB	NOTES
1125	01A-MW1	39.65	65.43	
1135	01A-MW2	18.88	53.64	
1140	01A-MW3	22.44	58.35	TOP OF PUMP
1150	98-1A-MW06	47.47	41.50	TOP OF PUMP
1200	98-1A-MW07	47.47	53.48	TOP OF PUMP
1235	98-1A-MW08	29.51	41.44	TOP OF PUMP

TEAM 1 - ON SITE 98-1A-MW01 SET UP
 TO SAMPLE VIA SUBMERSIBLE PUMP

1134 29.04 FT BTOP
 1136 START AIRLINE SET FLOW RATE: 310 mL/min
 1139 CONNECT TO FLOW CELL
 1142 COLLECT PARAMETERS - LISTED ON RECIE FORM
 1151 PARAMETERS STABILIZE: RECIE VOL. - 7.44L,
 DTW - 29.05 FT BTOP, PH - 6.54, COND. - 0.107 mS/cm,
 TURB. - 0.0 NTU, DO - 9.24 mg/L, TEMP. - 12.60°C,
 ORP - 176 mV, CLEAR, ODOORLESS

1155 COLLECT SAMPLE AIA170410981A MW01

[Signature] 04/10/10

TO OIB JBLM AIA SAMPLING 20 APR 10

2-IL AMBER UP NITROAROMATICS/
 NITRAMINES EPA SW 846-8330

T. MALAMARAL CALL FOR UPDATE ON
 ACCESS.

ON SITE LF2 SHED DEMOB/CLEAN
 HOLIDAY CALIBRATIONS (U-52)

TIME	TEMP. °C	PH	ORP (mV)	COND (µmS/cm)	TURB (NTU)	DO (mg/L)	DC	% SOL
0547	14.11	4.00	261	4.50	0.0	10.36	0.24	
1307	14.76	4.00	263	4.49	0.0	10.74	0.24	

PLACE SAMPLES IN OVERNIGHT STORAGE
 FRIG (30C)

CLEAN SUBMERSIBLE PUMP
 DISPOSE OF TRASH

1400 S. PATTERSON, W. BOWLES, R. BOYD
 OFF SITE

[Signature] 04/10/10



Sealaska Environmental Services

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

Spring 2016 Sampling Matrix Form

Well ID	Pump	Date	Time	DTW	Previous DTW	DTB	Previous DTB	Sample ID	Nitroaromatics/Nitr amines EPA Method SW846- 8330 1 L UP Amber
98-IA-MW01	DE2				29.41	-	46	AIA17041098IAMW01	2
98-IA-MW02	DE2				31.34	-	40	AIA17041098IAMW02	2
98-IA-MW03	DE2				65.45	-	78	AIA17041098IAMW03	2
98-IA-MW04	DE2				48.19	-	63	AIA17041098IAMW04	2
98-IA-MW05	E2				112.22	-	124.10	AIA17041098IAMW05	2
98-IA-MW06	NA	04/10/2017	1150	28.59	31.71	41.50 Top of pump	41.4	-	-
98-IA-MW07	NA	04/10/2017	1200	47.47	49.05	53.48 Top of pump	55.55	-	-
98-IA-MW08	NA	04/10/2017	1235	29.51	29.88	41.44 top of pump	41.7	-	-
98-IA-MW11	NA	04/10/2017	1125	39.65	38.21	65.43	65.54	-	-
98-IA-MW12	NA	04/10/2017	1135	18.88	20.66	53.64	53.55	-	-
98-IA-MW13	NA	04/10/2017	1140	22.44	24.20	58.39 Top of pump	58.58	-	-
AIA-SP01	SW	04/10/2017	0855	-	-	-	-	AIA170410AIASP01	2
AIA-SP02	SW	04/10/2017	1110	-	-	-	-	AIA170410AIASP02	2
AIA-SP03	SW	04/10/2017	0925	-	-	-	-	AIA170410AIASP03	2
AIA-SP04	SW			-	-	-	-	AIA170410AIASP04	2
AIA-SP04	SW			-	-	-	-	AIA170410AIASP14	2
AIA-SP05	SW			-	-	-	-	AIA170410AIASP05	2
Fish Hatchery	SP	04/10/2017	0840	-	-	-	-	AIA170410FHDS	6
Total	12	12	12	5	5	5		12	28

Notes:
Laboratory: ALS
DTW = Depth to water

PO#: PO-01281 AU
Duplicate

MSMSD

Turnaround Time (TAT): Standard



Sealaska Environmental Services

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

Spring 2017⁷ Sampling Matrix Form

Well ID	Pump	Date	Time	DTW	Previous DTW	DTB	Previous DTB	Sample ID	Nitroaromatics/Nitr amines EPA Method SW846- 8330 1 L UP Amber
98-IA-MW01	DE2	04/10/2017	1155	29.04	29.41	-	46	AIA17041098IAMW01	2
98-IA-MW02	DE2	04/10/2017	1055	31.88	31.34	-	40	AIA17041098IAMW02	2
98-IA-MW03	DE2	04/10/2017	0940	66.43	65.45	60.45	78	AIA17041098IAMW03	2
98-IA-MW04	DE2				48.19	-	63	AIA17041098IAMW04	2
98-IA-MW05	E2				112.22	-	124.10	AIA17041098IAMW05	2
98-IA-MW06	NA				31.71	-	41.4	-	-
98-IA-MW07	NA				49.05	-	55.55	-	-
98-IA-MW08	NA				29.88	-	41.7	-	-
98-IA-MW11	NA				38.21	-	65.54	-	-
98-IA-MW12	NA				20.66	-	53.55	-	-
98-IA-MW13	NA				24.20	-	58.58	-	-
AIA-SPO1	SW			-	-	-	-	AIA170410AIASP01	2
AIA-SPO2	SW			-	-	-	-	AIA170410AIASP02	2
AIA-SPO3	SW			-	-	-	-	AIA170410AIASP03	2
AIA-SPO4	SW			-	-	-	-	AIA170410AIASP04	2
AIA-SPO4	SW			-	-	-	-	AIA170410AIASP14	2
AIA-SPO5	SW			-	-	-	-	AIA170410AIASP05	2
Fish Hatchery	SP			-	-	-	-	AIA170410FHDS	6
Total	12	12	12	5	5	5		12	28

Notes:

Laboratory: ALS

DTW = Depth to water

PO#:

Duplicate

PO-01281 AU

Turnaround Time (TAT):

Standard

MSMSD



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: 01B Installation: JBLM Site Name: AIA

Well Data

Well ID: 98-1A-MN01 Measuring Point (MP): Top of Casing, Rim Monument, Other: _____
 Total Well Depth (ft below MP): 46 Pooled Water in Well Head: Y: ___ N: Well Casing Volume (liters/ft): 0.14
 Depth to Water (ft below MP): 29.04 Inner Casing Straight and Clear: Y: N: ___ Well Volume (liters): 10.176
 Length of Water Column in well (ft): 16.96 Well Head Locked: Y: N: ___ 3 x Well Volume (liters): 30.528
 Diameter of well casing (inches): 2 Exterior Seal Good Y: N: ___ Volume Purged (liters): 7.44
 Purge Method: Peristaltic Submersible Bladder/Other: DEDICATED Remarks: _____

Water Sample Data

Sample ID: AIA170410981ANNO1 Type: ENV Date: 04/10/17 Time: 1155 # Containers: 2
 QC Sample ID: NA Type: NA Date: NA Time: NA # Containers: NA
 Sampling Personnel: S.P., W.B. Sampling Method: Low flow grab
 Remarks (color, odor, etc.): CLEAR / ODOORLESS

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)	
1134	0	29.04							Initial Depth to Water (Pre-pumping)
1136	START	PURGE	SET	FLOW RATE:	370 mL/min				
1139	3.0	CONNECT	TO	FLOW CELL					
1142	4.11	29.05	6.64	0.108	0.0	10.27	12.17	195	
1145	5.22	29.05	6.56	0.107	0.0	9.65	12.45	186	
1148	6.33	29.05	6.54	0.107	0.0	9.40	12.46	180	
1151	7.44	29.05	6.54	0.107	0.0	9.24	12.60	176	
1155	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: 01B Installation: JBLM Site Name: AIA

Well Data

Well ID: 98-1A-MNO2 Measuring Point (MP): Top of Casing, Rim Monument, Other: _____
 Total Well Depth (ft below MP): 40 Pooled Water in Well Head: Y: ___ N: Well Casing Volume (liters/ft): 0.0
 Depth to Water (ft below MP): 31.88 Inner Casing Straight and Clear: Y: N: ___ Well Volume (liters): 4.872
 Length of Water Column in well (ft): 8.12 Well Head Locked: Y: N: ___ 3 x Well Volume (liters): 14.616
 Diameter of well casing (inches): 2 Exterior Seal Good Y: N: ___ Volume Purged (liters): 6.56
 Purge Method: Peristaltic Submersible Bladder/Other: DEDICATED Remarks: 123H

Water Sample Data

Sample ID: AIA17041098IAMNO2 Type: ENV Date: 04/10/2017 Time: 1055 # Containers: 2
 QC Sample ID: NA Type: NA Date: NA Time: NA # Containers: NA
 Sampling Personnel: S.P., W.B. 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)	(± 2.0)	(± 10%)	(± 10% or <20)	(± 10%)	(± 10%)	(± 10)	
1034	0	31.88							Initial Depth to Water (Pre-pumping)
1036	START PURGE								SET FLOW RATE: 380 mL/min
1038	CONNECT TO FLOW CELL								
1041	2.0	31.93	6.52	0.134	0.0	8.15	12.89	201	
1044	3.14	31.93	6.49	0.134	0.0	7.15	13.57	188	
1047	4.28	31.93	6.49	0.135	0.0	6.91	14.50	178	
1050	5.42	31.93	6.49	0.135	0.0	6.80	14.93	175	
1053	6.56	31.93	6.49	0.135	0.0	6.77	15.07	175	
1055	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: 01B Installation: JBLM Site Name: AIA

Well Data

Well ID: 98-1A-MW03 Measuring Point (MP): Top of Casing, Rim Monument, Other: _____
 Total Well Depth (ft below MP): 78 Pooled Water in Well Head: Y: ___ N: X Well Casing Volume (liters/ft): 0.6
 Depth to Water (ft below MP): 66.43 Inner Casing Straight and Clear: Y: X N: ___ Well Volume (liters): 6.948
 Length of Water Column in well (ft): 11.57 Well Head Locked: Y: X N: ___ 3 x Well Volume (liters): 20.826
 Diameter of well casing (inches): 2 Exterior Seal Good Y: X N: ___ Volume Purged (liters): 11.30
 Purge Method: Peristaltic Submersible/Bladder/Other: PERISTALTIC Remarks: _____

Water Sample Data

Sample ID: AIA170410981AMW03 Type: ENV Date: 04/10/2017 Time: 0940 # Containers: 2
 QC Sample ID: NA Type: NA Date: NA Time: NA # Containers: NA
 Sampling Personnel: S.P., W.B. Sampling Method: Low flow grab
 Remarks (color, odor, etc.): PUMP DEAD REMOVED
SLIGHT BROWN TINT / 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)	6.2 (± 0.1)	(± 10%)	(± 10% or <20)	(± 10%)	(± 10%)	(± 10)	
0849	0	66.43							Initial Depth to Water (Pre-pumping)
0917	STARTED PURGE								SET FLOW RATE: 420 mL/min
0922	5.0	CONNECT TO FLOW CELL							
0925	6.26	66.41	6.38	0.121	0.0	12.03	13.61	174	
0928	7.52	66.40	6.53	0.118	0.0	9.43	14.09	161	
0931	8.78	66.40	6.60	0.117	0.0	8.79	15.14	147	
0934	10.04	66.40	6.65	0.116	0.0	8.66	15.40	148	
0937	11.30	66.40	6.65	0.116	0.0	8.58	15.40	148	
0940	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

Fall 2016 Sampling Matrix Form

Well ID	Pump	Date	Time	DTW	Previous DTW	Sample ID	Nitroaromatics/Nitr amines EPA Method SW846- 8330 1 L UP Amber
98-IA-MW01	DE2	11/01/2016	1315	37.99	29.41	AIA16110198IAMW01	2
98-IA-MW02	DE2	11/01/2016	NOT COLLECTED	35.67	31.34	AIA16110198IAMW02	2
98-IA-MW01	DE2	11/01/2016	1320	-	-	AIA16110198IAMW1	2
98-IA-MW03	DE2	11/01/2016	0930	69.52	65.45	AIA16110198IAMW03	2
98-IA-MW04	DE2	11/01/2016	1110	55.33	48.19	AIA16110198IAMW04	2
98-IA-MW05	E2	11/01/2016	NOT COLLECTED	123.71	112.22	AIA16110198IAMW05	2
98-IA-MW06	NA	11-1-16	1305	41.32	31.71	-	-
98-IA-MW07	NA	11-1-16	1320	53.49 TOP OF PUMP	49.05	-	-
98-IA-MW08	NA	11-1-16	1340	37.82	29.88	-	-
01 98-IA-MW11	NA	11-1-16	1240	45.60	38.21	-	-
01 98-IA-MW12	NA	11-1-16	1255	36.38	20.66	-	-
01 98-IA-MW13	NA	11-1-16	1300	38.68	24.20	-	-
AIA-SP01	SW	11-1-16	0910	-	-	AIA161101AIASP01	2
AIA-SP02	SW	11-1-16	1215	-	-	AIA161101AIASP02	2
AIA-SP03	SW	11-1-16	0945	-	-	AIA161101AIASP03	2
AIA-SP04	SW	11-1-16	1120	-	-	AIA161101AIASP04	2
AIA-SP05	SW	11-1-16	1030	-	-	AIA161101AIASP05	2
Fish Hatchery	SP	11-1-16	0850	-	-	AIA161101FHDS	6
Total	12	12	12	5	5	12	28
Notes: IDW	PP	11/1/2016	PO#: 1410	NA	NA	AIA161101IDW	2
Laboratory: ALS							Standard
DTW = Depth to water		MSMSD	Duplicate				



ALS Environmental

1317 13th Ave S, Kelso, WA 98626
 PH: (360) 577-7222

Chain-of-Custody

WORKORDER #	
PAGE	1 of 1

PROJECT NAME		SAMPLER		DATE		TURNAROUND		DISPOSAL	
JBLM AIA		V. Sunrise Patterson		11/1/2016		21 Day		By Lab	
PROJECT No. TO 01B		SITE ID		EPA SW846-8330 Nitroaromatics/Nitramines					
COMPANY NAME Sealaska Environmental Services, LLC		PURCHASE ORDER PO-1281AU							
SEND REPORT TO Aaron Vernik		BILL TO COMPANY Sealaska Environmental Services, LLC							
ADDRESS 18743 Front Street NE, STE 201		INVOICE ATTN TO							
CITY / STATE / ZIP Poulsbo, WA		ADDRESS							
PHONE (425) 326-0280		CITY / STATE / ZIP							
E-MAIL aaron.vernik@sealaska.com		PHONE							
E-MAIL		E-MAIL							
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	MS/MSD		
	AIA161101AIASP01	W	11/1/2016	9:10	2	8	NO	2	
	AIA161101AIASP02	W	11/1/2016	12:15	2	8	NO	2	
	AIA161101AIASP03	W	11/1/2016	9:45	2	8	NO	2	
	AIA161101AIASP04	W	11/1/2016	11:20	6	8	NO	2	
	AIA161101AIASP05	W	11/1/2016	10:30	2	8	NO	2	
	AIA161101FHDS	W	11/1/2016	9:10	2	8	YES	6	
	AIA161101IDW	W	11/1/2016	14:10	2	8	NO	2	
	AIA16110198IAMW01	W	11/1/2016	13:15	2	8	NO	2	
	AIA16110198IAMW03	W	11/1/2016	9:30	2	8	NO	2	
	AIA16110198IAMW04	W	11/1/2016	11:10	2	8	NO	2	
	AIA16110198IAMW11	W	11/1/2016	13:20	2	8	NO	2	

*Time Zone: PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments: AS PER CONTRACT	QC PACKAGE (check below)
	<input type="checkbox"/> LEVEL II (Standard QC)
	<input type="checkbox"/> LEVEL III (Std QC + forms)
	<input type="checkbox"/> LEVEL IV (Std QC + forms + raw data)
Preservative Key:	1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		V. Sunrise Patterson	11/2/2016	9:00
RECEIVED BY		MC Delivery		
RELINQUISHED BY		MC Delivery		
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

Bill To: (Shipper) TOTE - CORPORATE OFFICE Scalaska C.O.D.		T	Expedite	Hot Shot	Time	656240	
Address 32001 32 ND AVENUE SOUTH, SUITE 200		\$.		@ \$	Hr.	DELIVERY CHARGE	
City FEDERAL WAY	Zip 98003	Tariff		Class		EXPEDITE CHARGE	
Ship To: (Consignee) ALS Environmental		Thank you for your shipment.		@ \$	Hr.	DELAY CHARGE	
Address 1317 SOUTH W 13 TH AV		You are a valued customer and we sincerely appreciate this opportunity to serve you.		# PIECES	DRIVER	C.O.D. FEE	
City Kelso	Zip 98626			4	94		
				WEIGHT			
				140		TOTAL	
USE THIS SPACE WHEN SHIPPING HAZARDOUS MATERIALS							
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UN or NA Number	P.G. # Pkg.	Net Quantity Per Pkg.	Emergency Contact Number				
			1-800-				
Shipping Name				Classification			
UN or NA Number	P.G. # Pkg.	Net Quantity Per Pkg.	Emergency Contact Number				
			1-800-				
I HEREBY DECLARE THAT ALL HAZARDOUS MATERIALS CONTAINED IN THIS SHIPMENT ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED AND ARE IN ALL RESPECTS IN PROPER CONDITION FOR TRANSPORT ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION 49 CFR.							
Shipper's Signature <i>[Signature]</i>				Shipment Date 11/02/16			
RECEIVED IN GOOD ORDER UNLESS OTHERWISE NOTED	X Consignee Signature		Shipper agrees to the terms and conditions set forth on the back of this bill of lading.				

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Fred Myers



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: 01A Installation: JBLM Site Name: AIA

Well Data

Well ID: 98-IA-MW01 Measuring Point (MP): Top of Casing, Rim Monument, Other: _____
 Total Well Depth (ft below MP): NC Pooled Water in Well Head: Y: ___ N: Well Casing Volume (liters/ft): 0.6
 Depth to Water (ft below MP): 39.99 Inner Casing Straight and Clear: Y: N: ___ Well Volume (liters): NA
 Length of Water Column in well (ft): NA Well Head Locked: Y: N: ___ 3 x Well Volume (liters): NA
 Diameter of well casing (inches): 2 Exterior Seal Good Y: N: ___ Volume Purged (liters): 10.72
 Purge Method: Peristaltic Submersible Bladder/Other: _____ Remarks: 135H

Water Sample Data

Sample ID: AIA16110198IAMW01 Type: ENV. Date: 11/01/2016 Time: 1315 # Containers: 2
 QC Sample ID: NA AIA16110198IAMW01 Type: NA DWP Date: NA 11/01/2016 Time: NA 1320 # Containers: NA 2
 Sampling Personnel: SP, K.N. 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)	(± 2.0)	(± 10%)	(± 10% or <20)	(± 10%)	(± 10%)	(± 10)	
1250	0	39.99	Initial Depth to Water (Pre-pumping)						
1257	STARTED PUMP		SET FLOW RATE 480ml/min						
1259	CONNECT TO FLOW CELL								
1301	4.0	39.99	6.65	0.104	1.5	7.22	12.41	176	
1304	5.44	39.99	6.60	0.104	1.3	7.35	12.69	170	
1307	6.88	39.99	6.60	0.104	1.1	7.15	13.15	164	
1310	8.32	39.99	6.59	0.104	0.0	7.02	13.57	162	
1315	COLLECT SAMPLE								
1320	COLLECT DWP 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: 01A Installation: JBLM Site Name: AIA

Well Data

Well ID: 98-IA-MW02 Measuring Point (MP): Top of Casing Rim Monument, Other: _____
 Total Well Depth (ft below MP): NA 42.11 Pooled Water in Well Head: Y: ___ N: X Well Casing Volume (liters/ft): 0.6
 Depth to Water (ft below MP): 35.67 Inner Casing Straight and Clear: Y: X N: ___ Well Volume (liters): NA 3.824
 Length of Water Column in well (ft): NA 6.44 Well Head Locked: Y: X N: ___ 3 x Well Volume (liters): NA 11.592
 Diameter of well casing (inches): 2 Exterior Seal Good Y: X N: ___ Volume Purged (liters): NA
 Purge Method: Peristaltic Submersible Bladder/Other: _____ Remarks: _____

Water Sample Data

Sample ID: AIA16110198IAMW02 Type: ENV. Date: 11/01/2016 Time: NA # Containers: 2
 QC Sample ID: AIA16110198IAMW12 Type: DUP. Date: 11/01/2016 Time: NA # Containers: 2
 Sampling Personnel: S.P., K.W. Sampling Method: Low flow grab

Remarks (color, odor, etc.): NO SAMPLE COLLECTED

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)	(± 2.0)	(± 10%)	(± 10% or <20)	(± 10%)	(± 10%)	(± 10)	
<u>12:19</u>	<u>0</u>	<u>35.67</u>	Initial Depth to Water (Pre-pumping)						
<u>NOT ENOUGH WATER ABOVE PUMP TO COLLECT SAMPLE</u>									

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: 01A Installation: JBLM Site Name: AIA

Well Data

Well ID: 98-IA-MW03 Measuring Point (MP): Top of Casing, Rim Monument, Other: _____
 Total Well Depth (ft below MP): 78 Pooled Water in Well Head: Y: ___ N: Well Casing Volume (liters/ft): 0.6
 Depth to Water (ft below MP): 69.52 Inner Casing Straight and Clear: Y: N: ___ Well Volume (liters): 5088
 Length of Water Column in well (ft): 8.48 Well Head Locked: Y: N: ___ 3 x Well Volume (liters): 15264
 Diameter of well casing (inches): 2 Exterior Seal Good Y: N: ___ Volume Purged (liters): 10.4
 Purge Method: Peristaltic Submersible Bladder/Other: DEDICATED Remarks: 185H

Water Sample Data

Sample ID: AIA16110198IAMW03 Type: ENV. Date: 11/01/2016 Time: 0930 # Containers: 2
 QC Sample ID: NA Type: NA Date: NA Time: NA # Containers: NA
 Sampling Personnel: S. PATTERSON, K. WATSON Sampling Method: Low flow grab
 Remarks (color, odor, etc.): CLEAR / ODDORLESS
RELIABLE

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)	(± 2.0)	(± 10%)	(± 10% or <20)	(± 10%)	(± 10%)	(± 10)	
0900	0	69.52	Initial Depth to Water (Pre-pumping)						
0905	STARTED PUMP		SET FLOW RATE: 390 mL/min						
0908	CONNECT TO FLOW CELL								
0914	4.0	69.51	6.46	0.088	4.9	9.01	11.93	213	
0917	5.2	69.51	6.75	0.089	23.4	8.15	13.15	178	
0920	6.4	69.65	6.80	0.086	15.2	8.97	14.47	166	
0923	7.6	69.61	6.84	0.087	17.7	9.34	14.18	167	
0926	8.8	69.32	6.85	0.087	1.8	8.84	13.48	174	
0930	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
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 18743 Front Street, NE, Suite 201
 Poulsbo, WA 98370

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

Contract Number: _____ Task Order: 01A Installation: JBLM Site Name: AIA

Well Data

Well ID: 98-IA-MW04 Measuring Point (MP): Top of Casing, Rim Monument, Other: _____
 Total Well Depth (ft below MP): 63 Pooled Water in Well Head: Y: N: Well Casing Volume (liters/ft): 0.6
 Depth to Water (ft below MP): 55.33 Inner Casing Straight and Clear: Y: N: _____ Well Volume (liters): 4.602
 Length of Water Column in well (ft): 7.67 Well Head Locked: Y: N: _____ 3 x Well Volume (liters): 13.806
 Diameter of well casing (inches): 2 Exterior Seal Good Y: N: _____ Volume Purged (liters): 10.4
 Purge Method: Peristaltic Submersible Bladder/Other: DEDICATED Remarks: 161H

Water Sample Data

Sample ID: AIA16110198IAMW04 Type: ENV. Date: 11/01/2016 Time: 1110 # Containers: 2
 QC Sample ID: NA Type: NA Date: NA Time: NA # Containers: NA
 Sampling Personnel: S.P., L.N. Sampling Method: Low flow grab
 Remarks (color, odor, etc.): CLEAR, ODORLESS
RELABELED WELL

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)	(± 2.0)	(± 10%)	(± 10% or <20)	(± 10%)	(± 10%)	(± 10)	
1047	0	55.33	Initial Depth to Water (Pre-pumping)						
1051	STARTED PUMP			SET FLOW RATE: 340 mL/min					
1057	CONNECT TO FLOW CELL								
1100	7.0	55.35	6.82	0.092	0.4	7.98	13.23	191	
1103	8.02	55.34	6.81	0.092	0.4	7.56	13.60	190	
1106	9.04	55.33	6.80	0.092	0.6	7.34	13.93	176	
1109	10.06	55.33	6.80	0.092	0.7	7.22	14.01	174	
1110	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: 01A Installation: JBLM Site Name: AIA

Well Data

Well ID: 98-IA-MW05 Measuring Point (MP): Top of Casing, Rim Monument, Other: _____
 Total Well Depth (ft below MP): 124.57 Pooled Water in Well Head: Y: N: Well Casing Volume (liters/ft): 0.6
 Depth to Water (ft below MP): 123.71 Inner Casing Straight and Clear: Y: N: Well Volume (liters): 0.516
 Length of Water Column in well (ft): 0.86 Well Head Locked: Y: N: 3 x Well Volume (liters): 1.548
 Diameter of well casing (inches): 2 Exterior Seal Good Y: N: Volume Purged (liters): NA
 Purge Method: Peristaltic, Submersible, Bladder/Other: _____ Remarks: _____

Water Sample Data

Sample ID: AIA16110198IAMW05 Type: ENV. Date: 11/01/216 Time: NA # Containers: 2
 QC Sample ID: NA Type: NA Date: NA Time: NA # Containers: NA
 Sampling Personnel: S. Patterson, K. Watson Sampling Method: Low flow grab
 Remarks (color, odor, etc.): not enough water to sample.

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)	(± 2.0)	(± 10%)	(± 10% or <20)	(± 10%)	(± 10%)	(± 10)	
<u>1025</u>	<u>0</u>	<u>123.71</u>	Initial Depth to Water (Pre-pumping)						
<u>SAMPLE NOT COLLECTED</u>									

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

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

Fall 2017 Sampling Matrix Form

Well ID	Pump	Date	Time	DTW	Previous DTW	Sample ID	Nitroaromatics/Nitr amines EPA Method SW846-8330 1 L UP Amber
98-IA-MW01	DE2	08/28/17	1255	35.16	39.99	AIA17082898IAMW01	2
98-IA-MW02	DE2	08/28/17	1320 RAN DRY DURING AIRBIE	34.22	35.67	AIA17082898IAMW02	2
98-IA-MW01	DE2		1300	-	-	AIA17082898IAMW01	2
98-IA-MW03	DE2	08/28/17	1440	67.69	69.52	AIA17082898IAMW03	2
98-IA-MW04	DE2				55.33	AIA17082898IAMW04	2
98-IA-MW05	E2				123.71	AIA17082898IAMW05	2
98-IA-MW06	NA				41.32	-	-
98-IA-MW07	NA				49.05	-	-
98-IA-MW08	NA				37.82	-	-
01-IA-MW11	NA	8/28/17	1510	42.38	45.60	-	-
01-IA-MW12	NA	8/28/17	1517	30.37	36.38	NO CAP	-
01-IA-MW13	NA	8/28/17	1530	32.75	38.68	-	-
AIA-SP01	SW	08/28/17	0930	-	-	AIA170828AIASP01	2
AIA-SP02	SW			-	-	AIA170828AIASP02	2
AIA-SP03	SW			-	-	AIA170828AIASP03	2
AIA-SP04	SW			-	-	AIA170828AIASP04	2
AIA-SP05	SW			-	-	AIA170828AIASP05	2
Fish Hatchery	SP	08/28/17	0910	-	-	AIA170828FHDS	6
IDW	PP	08/28/17	1615	-	-	AIA170828IDW	2
Total							30

Notes:

Laboratory: ALS

PO#:

PO-01281 AU

Standard

DTW = Depth to water

MSMSD

Duplicate



Sealaska Environmental Services

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

Fall 2017 Sampling Matrix Form

Well ID	Pump	Date	Time	DTW	Previous DTW	Sample ID	Nitroaromatics/Nitr amines EPA Method SW846-8330 1 L UP Amber
98-IA-MW01	DE2				39.99	AIA17082898IAMW01	2
98-IA-MW02	DE2				35.67	AIA17082898IAMW02	2
98-IA-MW02	DE2			-	-	AIA17082898IAMW12	2
98-IA-MW03	DE2				69.52	AIA17082898IAMW03	2
98-IA-MW04	DE2	8-28-17	12:03	57.78	55.33	AIA17082898IAMW04	2
98-IA-MW05	E2	8-28-17	11:03	114.65	123.71	AIA17082898IAMW05	2
98-IA-MW06	NA	8-28-17	15:53	37.76	41.32	-	-
98-IA-MW07	NA	8-28-17	15:42	52.69	49.05	-	-
98-IA-MW08	NA	8-28-17	16:12	34.08	37.82	-	-
01-IA-MW11	NA				45.60	-	-
01-IA-MW12	NA				36.38	-	-
01-IA-MW13	NA				38.68	-	-
AIA-SP01	SW			-	-	AIA170828AIASP01	2
AIA-SP02	SW	8-28-17	15:00	-	-	AIA170828AIASP02	2
AIA-SP03	SW	8-28-17	14:10	-	-	AIA170828AIASP03	2
AIA-SP04	SW	8-28-17	13:00	-	-	AIA170828AIASP04	2
AIA-SP05	SW	8-28-17	10:20	-	-	AIA170828AIASP05	2
Fish Hatchery	SP			-	-	AIA170828FHDS	6
IDW	PP			-	-	AIA170828IDW	2
Total							30

Notes:

Laboratory: ALS

PO#:

PO-01281 AU

Standard

DTW = Depth to water

MSMSD

Duplicate

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 Zip
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USE THIS SPACE WHEN SHIPPING HAZARDOUS MATERIALS

Shipping Name _____ Classification _____

UN or NA Number _____ P.G. # Pkg. _____ Net Quantity Per Pkg. _____ Emergency Contact Number **1-800-**

Shipping Name _____ Classification _____

UN or NA Number _____ P.G. # Pkg. _____ Net Quantity Per Pkg. _____ Emergency Contact Number **1-800-**

I HEREBY DECLARE THAT ALL HAZARDOUS MATERIALS CONTAINED IN THIS SHIPMENT ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED AND ARE IN ALL RESPECTS IN PROPER CONDITION FOR TRANSPORT ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION 49 CFR.

Shipper's Signature **[Signature]** Shipment Date **08/29/17**
 Shipper agrees to the terms and conditions set forth on the back of this bill of lading.

RECEIVED IN GOOD ORDER UNLESS OTHERWISE NOTED
 Consignee Signature
[Signature]

PREPAID BILL OF LADING



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: 01C Installation: JBLM Site Name: AIA

Well Data

Well ID: 98-IA-MW01 Measuring Point (MP): Top of Casing, Rim Monument, Other: _____
 Total Well Depth (ft below MP): NC Pooled Water in Well Head: Y: N: Well Casing Volume (liters/ft): 0.6
 Depth to Water (ft below MP): 35.16 Inner Casing Straight and Clear: Y: N: Well Volume (liters): NA
 Length of Water Column in well (ft): NA Well Head Locked: Y: N: 3 x Well Volume (liters): NA
 Diameter of well casing (inches): 2 Exterior Seal Good Y: N: Volume Purged (liters): 28.4
 Purge Method: Peristaltic Submersible Bladder/Other: DEDICATED Remarks: _____

Water Sample Data

Sample ID: AIA17082898IAMW01 Type: ENV. Date: 8/28/2017 Time: 12:55 # Containers: 2
 QC Sample ID: NA AIA17082898IAMW01 Type: NA/DUO Date: NA 8/28/17 Time: NA 13:00 # Containers: NA 2
 Sampling Personnel: S. PATTERSON, K. WATSON 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)	
11:56	0	<u>35.16</u>							Initial Depth to Water (Pre-pumping)
12:02	START					<u>400 mL/min</u>			
12:12	CONNECT TO FLOW CELL				<u>12.0 L</u>				
12:14	12.8	35.20	6.30	0.072	0.4	9.65	21.74	137	
12:17	14.0	35.20	5.88	0.074	2.5	9.84	18.59	156	
12:20	15.2	35.21	6.04	0.075	2.4	9.45	18.62	145	
12:23	16.4	35.21	6.45	0.073	1.6	8.78	19.01	110	
12:26	17.6	35.20	6.37	0.075	0.0	9.00	20.46	123	
12:29	18.8	35.19	6.45	0.075	0.0	8.55	21.34	115	
12:32	20.0	35.20	6.53	0.074	0.0	8.13	22.03	120	
12:35	21.2	35.20	6.31	0.074	0.0	8.31	22.10	121	
12:38	22.4	35.20	6.30	0.074	0.0	8.46	21.75	115	
12:41	23.6	35.28	6.57	0.077	1.2	14.20	15.27	92	
12:44	24.8	35.30	6.47	0.078	2.0	14.20	13.51	109	
12:47	26.0	35.30	6.33	0.078	2.1	13.45	12.96	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



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: 01C Installation: JBLM Site Name: AIA

Well Data

Well ID: 98-IA-MW01 Measuring Point (MP): Top of Casing, Rim Monument, Other: _____
 Total Well Depth (ft below MP): NC Pooled Water in Well Head: Y: ___ N: Well Casing Volume (liters/ft): 0.6
 Depth to Water (ft below MP): 35.16 Inner Casing Straight and Clear: Y: N: ___ Well Volume (liters): NA
 Length of Water Column in well (ft): NA Well Head Locked: Y: N: ___ 3 x Well Volume (liters): NA
 Diameter of well casing (inches): 2 Exterior Seal Good Y: N: ___ Volume Purged (liters): 28.4
 Purge Method: Peristaltic Submersible Bladder/Other: DEDICATED Remarks: _____

Water Sample Data

Sample ID: AIA17082898IAMW01 Type: ENV. Date: 8/28/2017 Time: 1255 # Containers: 2
 QC Sample ID: NA Type: NA Date: NA Time: NA # Containers: NA
 Sampling Personnel: S. PATTERSON, K. WATSON 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)	
Initial Depth to Water (Pre-pumping)									
1250	27.2	35.31	6.27	0.077	21	12.93	13.40	129	
1253	28.4	35.31	6.17	0.078	20	12.89	13.40	130	
1255	COLLECT SAMPLE								
1300	COLLECT DUP 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: 01C Installation: JBLM Site Name: AIA

Well Data

Well ID: 98-IA-MW02 Measuring Point (MP): Top of Casing, Rim Monument, Other: _____
 Total Well Depth (ft below MP): 42.11 Pooled Water in Well Head: Y: N: X Well Casing Volume (liters/ft): 0.6
 Depth to Water (ft below MP): 34.22 Inner Casing Straight and Clear: Y: X N: Well Volume (liters): 4.734
 Length of Water Column in well (ft): NA Well Head Locked: Y: X N: 3 x Well Volume (liters): 14.202
 Diameter of well casing (inches): 2 Exterior Seal Good Y: N: X Volume Purged (liters): _____
 Purge Method: Peristaltic/Submersible/Bladder/Other: DEDICATED Remarks: BEEES! 125.5 Hz

Water Sample Data

Sample ID: AIA17082898IAMW02 Type: ENV. Date: 8/28/2017 Time: 1320 # Containers: 2
 QC Sample ID: AIA17082898IAMW02 Type: DUP Date: 8/28/2017 Time: NA # Containers: NA
 Sampling Personnel: S. PATTERSON, K. WATSON 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)	
1045	0	34.22							Initial Depth to Water (Pre-pumping)
1049	START PUMP								SET FLOW RATE: 380 mL/min
1054	CONNECT TO FLOW CELL								
1057	5.0	34.27	6.04	0.098	0.1	6.38	17.58	147	
1100	6.14	34.25	6.39	0.093	1.3	5.90	18.66	120	
1103	7.28	34.40	5.96	0.098	1.5	5.12	17.38	137	
1109	8.42	34.46	6.44	0.092	2.2	7.23	14.08	114	WELL PUMP STOPPED RESTRICTED
1110	WELL STOPPED								NOT ENOUGH WATER TO COLLECT SAMPLE
									RETURNED TO COLLECT SAMPLE / START PURGE
1320	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



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Well Inspection, Purging, and Field Measurement Form

Contract Number: _____ Task Order: 01C Installation: JBLM Site Name: AIA

Well Data

Well ID: 98-IA-MW03 Measuring Point (MP): Top of Casing, Rim Monument, Other: _____
 Total Well Depth (ft below MP): ~~78~~ 80.47 Pooled Water in Well Head: Y: N: Well Casing Volume (liters/ft): 0.6
 Depth to Water (ft below MP): 67.69 Inner Casing Straight and Clear: Y: N: Well Volume (liters): 7.67
 Length of Water Column in well (ft): 12.78 Well Head Locked: Y: N: 3 x Well Volume (liters): 23.01
 Diameter of well casing (inches): 2 Exterior Seal Good Y: N: Volume Purged (liters): 1295
 Purge Method: Peristaltic Submersible Bladder/Other: Dedicated Remarks: _____

Water Sample Data

Sample ID: AIA17082898IAMW03 Type: ENV. Date: 8/28/2017 Time: 1440 # Containers: 2
 QC Sample ID: NA Type: NA Date: NA Time: NA # Containers: NA
 Sampling Personnel: S. Patterson, K. Watson 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)	
1402	0	67.67							Initial Depth to Water (Pre-pumping)
1402	START PURGE								SET FLOW RATE: 350 mL/min
1408	CONNECT TO FLOW CELL								
1411	3.5	67.70	6.60	6.071	2.3	8.74	22.13	131	
1414	4.55	67.70	6.65	0.072	2.1	8.79	21.07	122	
1417	5.60	67.72	6.18	0.081	3.2	11.53	17.95	132	
1420	6.65	67.73	5.89	0.079	1.9	11.72	17.71	144	
1423	7.70	67.76	5.95	0.081	2.6	11.24	17.41	143	
1426	8.75								SWITCHED PUMP CONTROLLERS, FAULT GROUND
1432	10.85	67.72	5.93	0.080	1.4	11.38	15.79	151	
1435	11.90	67.73	5.86	0.080	0.3	11.40	15.97	154	
1438	12.95	67.73	5.82	0.080	0.1	11.39	16.02	157	
1440	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

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Poulsbo, WA 98370

Well Inspection, Purging, and Field Measurement Form

Contract Number: _____ Task Order: 01C Installation: JBLM Site Name: AIA

Well Data

Well ID: 98-IA-MW04 Measuring Point (MP): Top of Casing Rim Monument, Other: _____
 Total Well Depth (ft below MP): 63 Pooled Water in Well Head: Y: ___ N: Well Casing Volume (liters/ft): 0.6
 Depth to Water (ft below MP): 51.78 Inner Casing Straight and Clear: Y: N: ___ Well Volume (liters): 6.73
 Length of Water Column in well (ft): 11.22 Well Head Locked: Y: N: ___ 3 x Well Volume (liters): 20.20
 Diameter of well casing (inches): 2 Exterior Seal Good Y: N: ___ Volume Purged (liters): 6.5
 Purge Method: Peristaltic Submersible Bladder/Other: Dedicated Remarks: _____

Water Sample Data

Sample ID: AIA17082898IAMW04 Type: ENV. Date: 8/28/2017 Time: 12:35 # Containers: 2
 QC Sample ID: NA Type: NA Date: NA Time: NA # Containers: NA
 Sampling Personnel: JM, JO Sampling Method: Low flow grab
 Remarks (color, odor, etc.): COLORLESS, 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)	
12:03	0	51.78	Initial Depth to Water (Pre-pumping)						
12:05		BEGIN	PURGE	260	m/min				
12:07		CONNECT	TO	FLOW	CELL				
12:10	1.3		5.90	0.084	0.0	9.47	16.69	155	
12:15	2.6		5.82	0.083	0.0	9.23	16.86	150	
12:20	3.9		5.82	0.082	0.0	8.82	17.27	143	
12:25	5.2		5.90	0.082	0.0	8.80	17.50	157	
12:30	6.5		5.92	0.082	0.0	8.81	17.52	135	
12:35	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

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Well Inspection, Purging, and Field Measurement Form

Contract Number: _____ Task Order: 01C Installation: JBLM Site Name: AIA

Well Data

Well ID: 98-IA-MW05 Measuring Point (MP): Top of Casing, Rim Monument, Other: _____
 Total Well Depth (ft below MP): 124.57 Pooled Water in Well Head: Y: ___ N: Well Casing Volume (liters/ft): 0.6
 Depth to Water (ft below MP): 114.65 Inner Casing Straight and Clear: Y: N: ___ Well Volume (liters): 5.95
 Length of Water Column in well (ft): 9.92 Well Head Locked: Y: N: ___ 3 x Well Volume (liters): 17.85
 Diameter of well casing (inches): 2 Exterior Seal Good Y: N: ___ Volume Purged (liters): _____
 Purge Method: Peristaltic Submersible Bladder/Other: _____ Remarks: _____

Water Sample Data

Sample ID: AIA17082898IAMW05 Type: ENV. Date: 8/28/2017 Time: 1130 # Containers: 2
 QC Sample ID: NA Type: NA Date: NA Time: NA # Containers: NA
 Sampling Personnel: JM, JB Sampling Method: Low flow grab
 Remarks (color, odor, etc.): COLORLESS / 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)	
<u>11:03</u>	<u>0</u>	<u>114.65</u>							Initial Depth to Water (Pre-pumping)
<u>11:05</u>		<u>DISCON</u>	<u>PURGE</u>		<u>450 ml/min</u>				
<u>11:07</u>		<u>CONNECT</u>	<u>TO</u>	<u>FLOW</u>	<u>CELL</u>				
<u>11:10</u>	<u>2.25</u>		<u>6.32</u>	<u>0.071</u>	<u>0.0</u>	<u>9.24</u>	<u>15.36</u>	<u>137</u>	
<u>11:15</u>	<u>4.50</u>		<u>6.39</u>	<u>0.071</u>	<u>0.0</u>	<u>9.02</u>	<u>15.50</u>	<u>123</u>	
<u>11:20</u>	<u>6.75</u>		<u>6.40</u>	<u>0.070</u>	<u>0.0</u>	<u>9.24</u>	<u>15.72</u>	<u>120</u>	
<u>11:25</u>	<u>9.00</u>		<u>6.41</u>	<u>0.071</u>	<u>0.0</u>	<u>9.20</u>	<u>15.77</u>	<u>119</u>	
<u>11:30</u>	<u>COLLECT</u>	<u>SAMPLE</u>							

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

TRAINING RESOURCE REQUEST

(For use of this form see FL Reg 350-30; the proponent agency is DPTMS)

(Instructions on the reverse side)

1. TO Range Operations		2. THRU Mr. Steucke, Chief Environmental Division, DPW <i>[Signature]</i> EMAIL Paul.t.steucke.civ@mail.mil		3. FROM Michael Grenko, Compliance Branch Chief Environmental Division EMAIL Michael.j.Grenko.civ@mail.mil		4. COMPONENT <input type="checkbox"/> ACTIVE <input type="checkbox"/> NATIONAL GUARD <input type="checkbox"/> RESERVE <input checked="" type="checkbox"/> OTHER (Specify) <input type="checkbox"/> ROTC IRP	
5. FACILITY/RESOURCE REQUESTED A	INCLUSIVE DATE/TIME GROUP REQ B	NUMBER OF PERSONNEL C	TRAINING PLANNED D	WEAPONS E	AMMO F	REMARKS (Equipment Issue Date/Time, Target Request Records Coordination For Joint Use) G	
AIA Range 50 (see attached map)	28 AUG 2017 10:00 -15:00	6	Conduct groundwater and seep monitoring. Clearing of vegetation along paths to monitoring wells using gas powered cutters and hand tools. Two GSA 4x4 vehicles. <div style="border: 1px solid red; padding: 5px; text-align: center; color: red;">APPROVED / DISPATCHED <i>[Signature]</i> 14 Aug 17 (SIGNATURE / DATE) RANGE DIVISION LIVE FIRE OPERATIONS / SAFETY (48)</div>	None	None	Personnel will make radio contact with Range Control prior to entering and upon exiting the impact area. Sampling teams have government personnel escorts, one in each vehicle. Routes are to be cleared before monitoring event by EOD personnel. Personnel will follow PPE requirements. No digging or ground penetration conducted.	
6. CLEARANCE FOR LATE FIRING OF MORTARS AND FIELD ARTILLERY IS REQUESTED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			A. INCLUSIVE DATES AND HOURS		B. WEAPONS/AMMO		7. AIR ASSETS TO BE USED <input type="checkbox"/> CAS <input type="checkbox"/> AIRMOBILE <input type="checkbox"/> OTHER (Specify)
8. REQUESTING OFFICIAL'S NAME RANK UNIT PHONE NUMBER Michael Grenko, GS13, DPW, 966-1785				9. DATE SIGNED (YYYYMMDD) 20170807		10. REQUESTING OFFICIAL'S SIGNATURE <i>[Signature]</i>	
11. SCHEDULING OFFICER, AGENCY, PHONE <i>[Signature]</i>		12. DATE PROCESSED 15 AUG 17	13. SCENARIO/OVERLAY <input type="checkbox"/> YES <input type="checkbox"/> NO		14. ENVIRONMENTAL COORD <input type="checkbox"/> YES <input type="checkbox"/> NO		15. NOTAM/LNM REQUIRED <input type="checkbox"/> YES <input type="checkbox"/> NO
							16. CONTROL NUMBER 1708307

TO DIC JBLM AIA SAMPLING 28AUG2017
0615 S. PATTERSON ON SITE TO PICK UP
FIELD TRUCK

0700 ONSITE JBLM: S. PATTERSON,
K. WATSON, T. MALAMAKAL, J. GUZMAN
CONDUCT TAILGATE SAFETY BRIEFING
SSHAD - J. GUZMAN

TOPICS INCLUDE:

- VEHICLE OPERATIONS
- BUDDY SYSTEM
- PROPER LIFTING
- HAND TOOL SAFETY
- PROPER PPE - MODIFIED LEVEL D
 - SAFETY: GLASSES, BOOTS, VEST NEAR TRAFFIC;
GLOVES
 - FLAME JACKET, COMBAT HELMET AS
NEEDED

DISCUSS PLAN FOR THE DAY / MOB TRUCKS

ON SITE LF2 SHED CONTINUE MOB

0750 CALIBRATE HORIBA (LITSAP):

TEMP. - 23.38°C, PH - 4.00, ORP - 235 mV,
COND. - 4.48 ms/cm, TURB. - 0.0 NTU,
DO - 8.59 mg/L, D. 24% - SAL

CALIBRATE HORIBA (WHIDBEY):

TEMP. - 19.43°C, PH - 4.01, ORP - 244 mV,
COND. - 4.48 ms/cm, TURB. - 0.0 NTU,

UAF 08/28/17

TO DIC JBLM AIA SAMPLING 28AUG2017
DO - 9.07 mg/L, SAL. - 0.24%

0830 ON SITE MOCK PLANE LOCATION
MEET JEROME AND GUEST-USACE
TRANSFER EQUIPMENT TO GOVERNMENT
VEHICLE FOR ONE SEALASKA TRUCK
MOB TO SITE

0855 ON SITE FISH HATCHERY

CHECK IN WITH STAFF

CLEAR AREA FOR SAMPLE COLLECT

ALLOW WATER TO RUN FROM SPIGOT

0910 COLLECT SAMPLE AIA170828FHS M3M5D
6-1L AMBER UP NITROAROMATICS/AMINES
SN846-8330

ON SITE AIA-SPDI SET UP DIP SAMPLE

0930 COLLECT SAMPLE AIA170828AIASPDI

2-1L AMBER UP NITROAROMATICS/AMINES
SN846-8330

TEAM 1:

SET UP TO SAMPLE 98-1A-MNO3

NO PUMP IN WELL

ON SITE 98-1A-MNO2 SET UP TO
SAMPLE VIA DEDICATED SUBMERSIBLE
PUMP BEES!

1045 ~~08/28/17~~

RETURNED TO JBLM TRUCK AT MOCK
UAF 08/28/17 *Rite in the Rain*

TO OIC JBLM AIA SAMPLING 28 AUG, 2017
 PLANE FOR BEE SPRAY
 REMOVE HIVE TREAT WITH SPRAY
 SPRAY AREA SURROUNDING WELL
 WITH BEE SPRAY

1045 COLLECT DTN - 34.22 FT BTOC
 1049 START PUMP SET FLOW RATE: 380ml/min
 1054 CONNECT TO FLOW CELL
 1057 COLLECT PARAMETERS - LISTED ON PURGE
 FORM

1105 PUMP STOPPED/RESTARTED
 1110 PUMP STOPPED - NOT ENOUGH WATER
 ON SITE 98-1A-MW01 SET UP TO
 SAMPLE VIA DEDICATED SUBMERSIBLE
 PUMP

1156 COLLECT DTN - 35.16 FT BTOC
 1202 START PURGE ~~CONNECT TO FLOW CELL~~ 400ml/min
 PURGE RATE: 400ml/min

1212 CONNECT TO FLOW CELL
 1214 COLLECT PARAMETERS - LISTED ON PURGE
 FORM

1253 PARAMETERS STABILIZE: PURGE VOL - 28.4L,
 DTN - 35.31 FT BTOC, PH - 6.17, COND. - 0.078ms/cm,
 TURB. - 2.0 NTUS, DO - 12.89 mg/L, TEMP. - 13.40°C,
 ORP - 130mv, CLEAR, ODDLESS

1255 COLLECT SAMPLE AIA170828981AMW01
 08/28/17

TO OIC JBLM AIA SAMPLING 28 AUG 2017
 2-1L AMBER UP NITROAROMATICS/AMINES
 SW846-8330

1300 COLLECT DUP SAMPLE AIA170828981AMW11
 2-1L AMBER UP NITROAROMATICS/AMINES
 SW846-8330

ON SITE 98-1A-MW02 SET UP TO
 COLLECT SAMPLE PER CONVERSATION
 W/ A. VERNIK
 START PURGE

1320 COLLECT SAMPLE AIA170828981AMW02
 2-1L AMBER UP NITROAROMATICS/AMINES
 SW846-8330

NOTE: DUP MOVED TO 98-1A-MW01

TEAM 2:

1020 COLLECT SAMPLE AIA170828AIASPO5
 2-1L AMBER UP NITROAROMATICS/AMINES
 SW846-8330

ON SITE 98-1A-MW05 SET UP TO
 SAMPLE VIA SUBMERSIBLE PUMP

1103 COLLECT DTN - 114.65 FT BTOC
 1105 START PURGE FLOW RATE: 450ml/min
 1107 CONNECT TO FLOW CELL

1110 COLLECT PARAMETERS - LISTED ON PURGE FORM
 1125 PARAMETERS STABILIZE: PURGE VOL - 9.00L,
 PH - 6.41, COND. - 0.071ms/cm, TURB. - 0.0 NTUS,
 08/28/17 *Rite in the Rain*

TO OIC JBLM AIA SAMPLE 28 AUG 2017

DO-9.20 mg/L, TEMP.-15.77°C, ORP-119 mV,
COLORLESS, ODORLESS

1130 COLLECT SAMPLE AIA17082898IA MN05
2-1L AMBER UP NITROAROMATICS/AMINES
SW846-8330

ON SITE 98-1A-MN04 SET UP TO
SAMPLE VIA DEDICATED SUBMERSIBLE
PUMP

1203 COLLECT DTN-51.78 FT BTOL

1205 START PURGE SET FLOW RATE: 200 mL/min

1207 CONNECT TO FLOW CELL

1210 COLLECT PARAMETERS-LISTED ON PURGE
FORM

1230 PARAMETERS STABILIZE: PURGE VOL-6.5L,
PH-5.92, COND-0.082 ms/cm, TURB.-0.00TUS,
DO-8.81 mg/L, TEMP.-~~17.52~~^{17.52}°C, ORP-135 mV,
COLORLESS, ODORLESS

1235 COLLECT SAMPLE 98-1A-MN04
AIA17082898IA MN04
2-1L AMBER UP NITROAROMATICS/AMINES
SW846-8330

ON SITE AIA-SPO1

1300 COLLECT SAMPLE AIA170828AIA SPO4
2-1L AMBER UP NITROAROMATICS/AMINES
SW846-8330

UHA 08/28/17

TO OIC JBLM AIA SAMPLE 28 AUG 2017

ON SITE AIA-SPO3

1410 COLLECT SAMPLE AIA170828AIA SPO3
2-1L AMBER UP NITROAROMATICS/AMINES
SW846-8330

ON SITE AIA-SPO2

1500 COLLECT SAMPLE AIA170828AIA SPO2
2-1L AMBER UP NITROAROMATICS/AMINES
SW846-8330

ON SITE 98-1A-MN07

1542 COLLECT DTN-52.69 FT BTOL

ON SITE 98-1A-MN06

1553 COLLECT DTN-37.76 FT BTOL

ON SITE 98-1A-MN08

1612 COLLECT DTN-34.08

TEAM 1:

ON SITE 98-1A-MN03

CLEAN SUBMERSIBLE PUMP

SET UP TO SAMPLE VIA SUBMERSIBLE
PUMP

1402 COLLECT DTN-67.67 FT BTOL

1402 START PURGE SET FLOW RATE: 350 mL/min

1408 CONNECT TO FLOW CELL

1411 COLLECT PARAMETERS-LISTED ON PURGE FORM

1420 CONTROLLER GROUND FAULT SWITCHED

CONTROLLER UHA 08/28/17 *Rite in the Rain.*

TO OIC JBLM AIA SAMPLING 28 AUG 2017

1432 CONTINUE COLLECTING PARAMETERS

1438 PARAMETERS STABILIZE: PURGE VOL. - 12.95L,

DTN - 67.73 FT BTOC, pH - 5.82, COND. - 0.050 $\mu\text{S}/\text{cm}$,

TURB - 0.1 NTUS, DO - 11.31 mg/L, TEMP. - 16.02°C,

ORP - 157 mV, CLEAR, ODORLESS

~~CLEAN SUBMERSIBLE~~ ^{08/28/17} TRANSFER TEAM 2 WATER

1440 COLLECT SAMPLE AIA170828987A MW03

2-L AMBER UP NITROAROMATICS/AMINES
SW 846-8330

CLEAN SUBMERSIBLE PUMP

ON SITE 01-1A-MW11

1510 COLLECT DTN - 42.38 FT BTOC

ON SITE 01-1A-MW12

1517 COLLECT DTN - 30.37 FT BTOC NO CAP

IDENTIFIED 3 POSSIBLE UXO

NOTIFIED TEAM 2/JEROME

TEAM 2/JEROME ON SITE GPS COLLECTED

ON SITE 01-1A-MW13

1530 COLLECT DTN - 32.75 FT BTOC

1600 ON SITE LF2 SHED PREP FOR IDW

SAMPLE/DENOB

1615 COLLECT SAMPLE AIA17082810W

2-L AMBER UP NITROAROMATICS/AMINES

SW 846-8330

1640 TEAM 2 ON SITE LF2 SHED/DENOB

VHA 08/28/17

TO OIC JBLM AIA SAMPLING 28 AUG 2017

HORIBA CALIBRATIONS

1624 KITSAP: TEMP - 29.29°C, pH - 4.01, ORP - 236 mV,

COND. - 4.57 ms/cm, TURB. - 0.0 NTUS,

DO - 8.27 mg/L, SAL. - 0.24%

1642 WHIDBY: TEMP. - 34.57°C, pH - 4.03, ORP - 242 mV,

COND. - 4.53 ms/cm, TURB. - 0.0 NTUS, DO - 7.56 mg/L,

SAL. - 0.24%

PACK SAMPLES FOR SHIPMENT

CLEAN/ORGANIZE

DN SITE SITE TRAILER

DISPOSE OF GARBAGE

1735 K. WATSON, J. GUZMAN OFF SITE

1740 T. MALAMAKAL RETURN PPE - OFF SITE

MSS. PATTERSON OFF SITE

VHA 08/28/17

TO OIC JBLM AIA SAMPLING 29AUG2017

0800 ON SITE PORT ORCHARD FRED MEYER

PURCHASE ICE/SUPPLIES FOR SAMPLE
SHIPMENT

0900 SHIP 4 COOLERS OF SAMPLES AND

ONE COOLER OF UNUSED BOTTLES/

SUPPLIES VIA MC DELIVERY TO

ALS KELSO

0920 S. PATTERSON OFF SITE

~~WMA~~

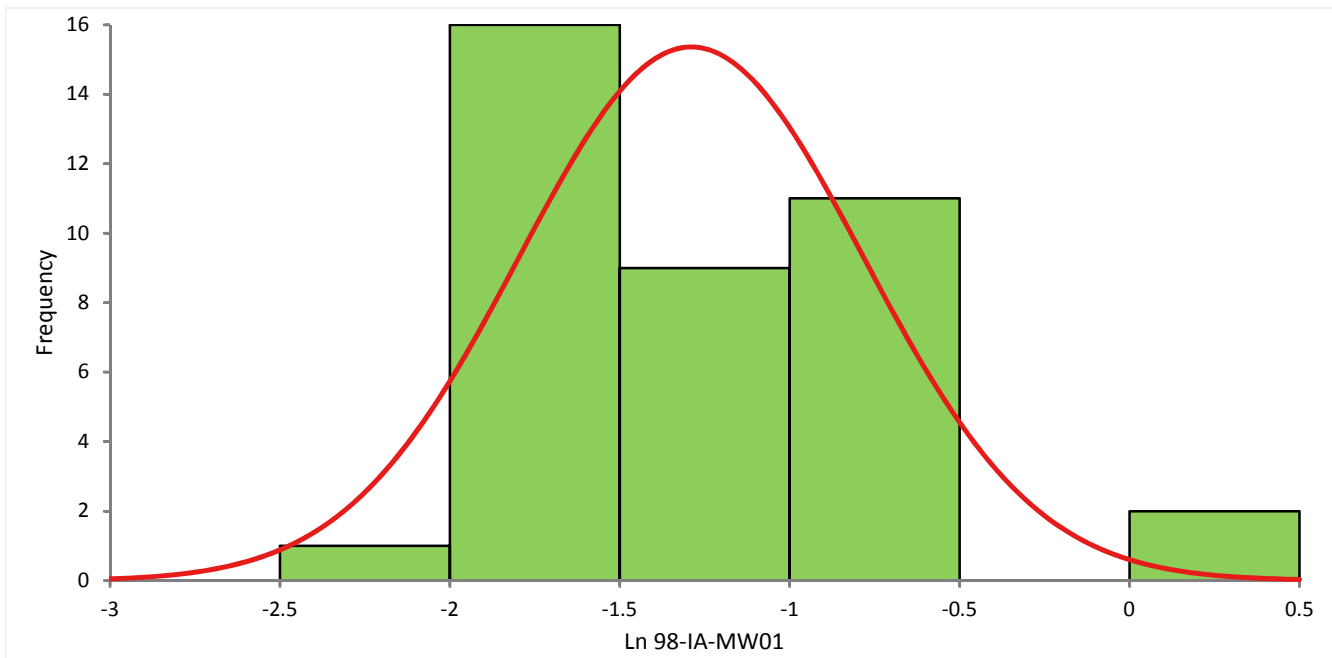
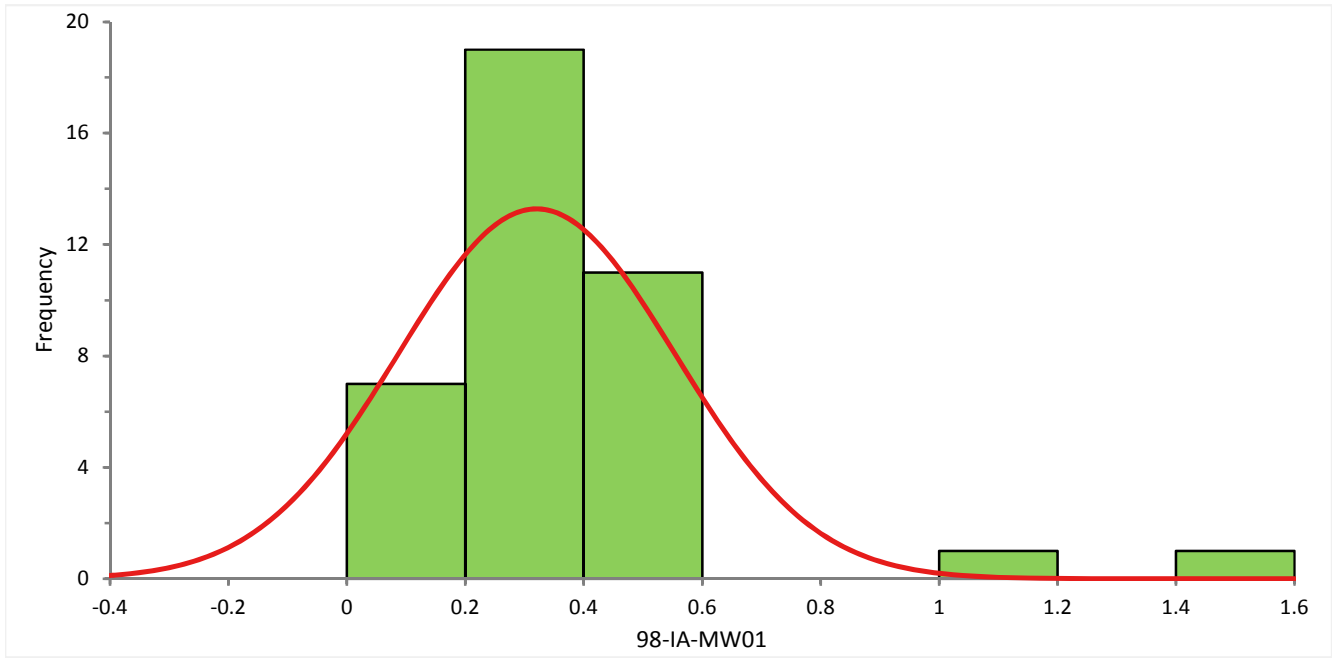
08/29/2017

APPENDIX B

STATISTICAL GRAPHS

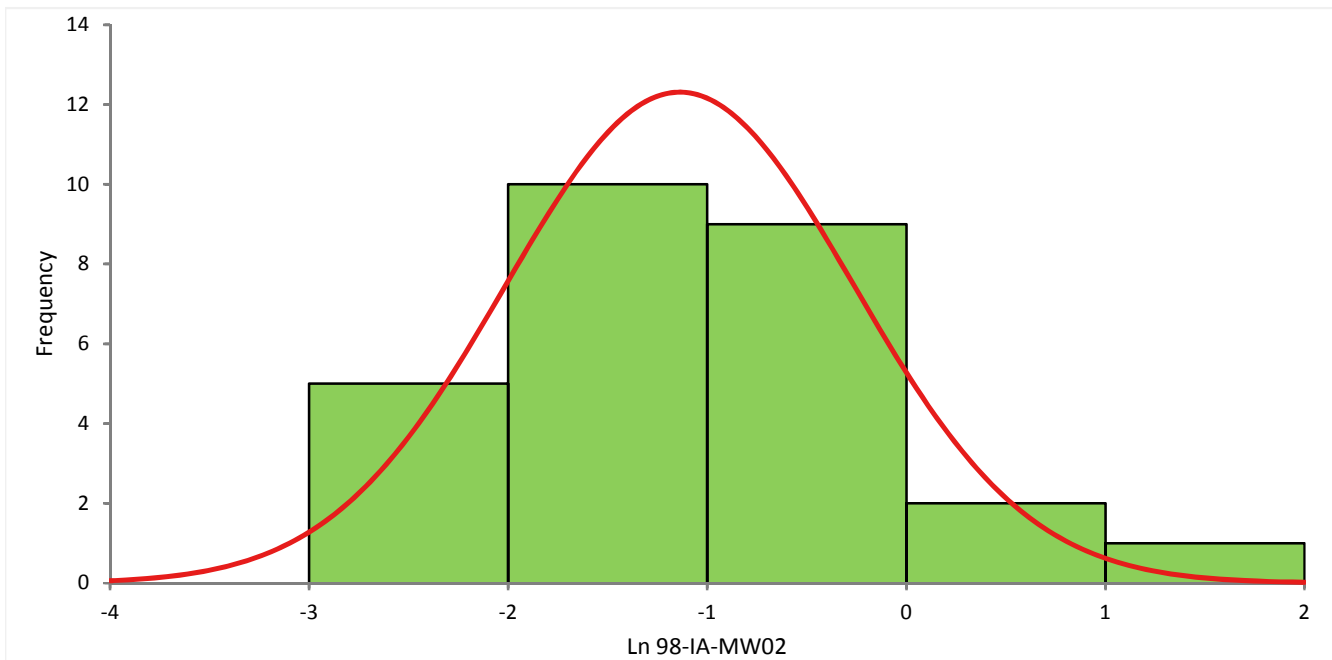
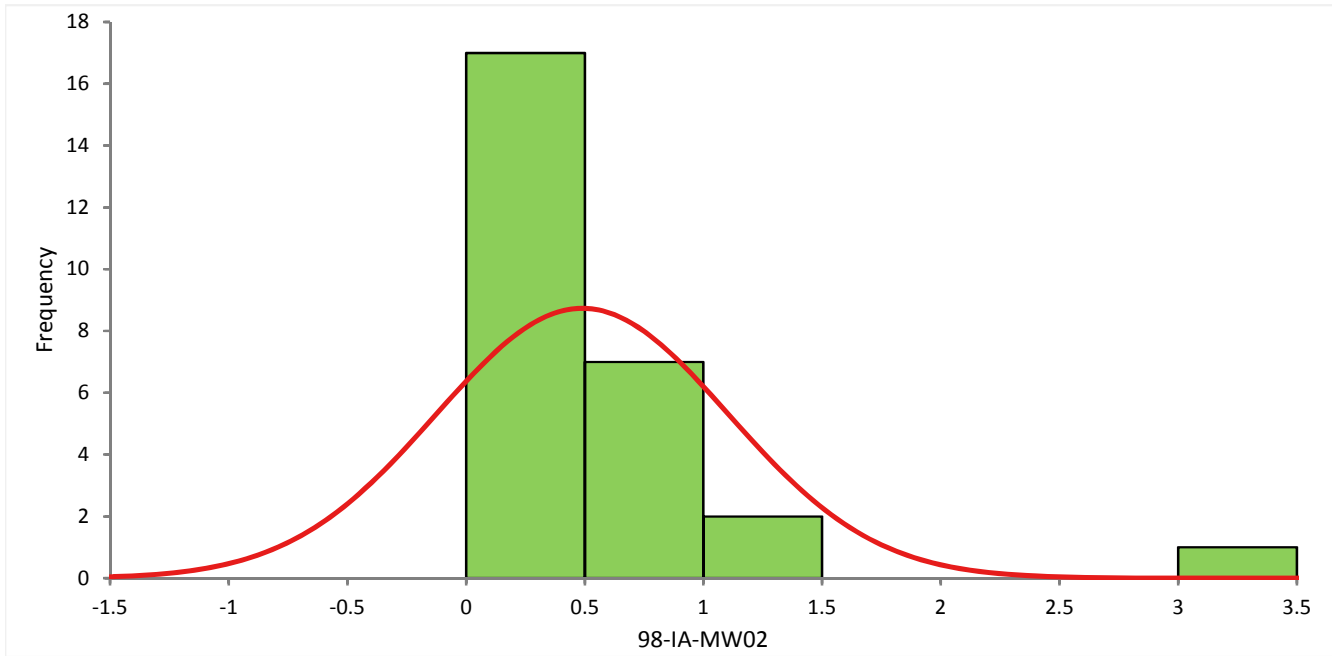
Appendix B - Statistics Graphs

Distribution Histograms, Artillery Impact Area, Joint Base Lewis - McChord, Washington 98433



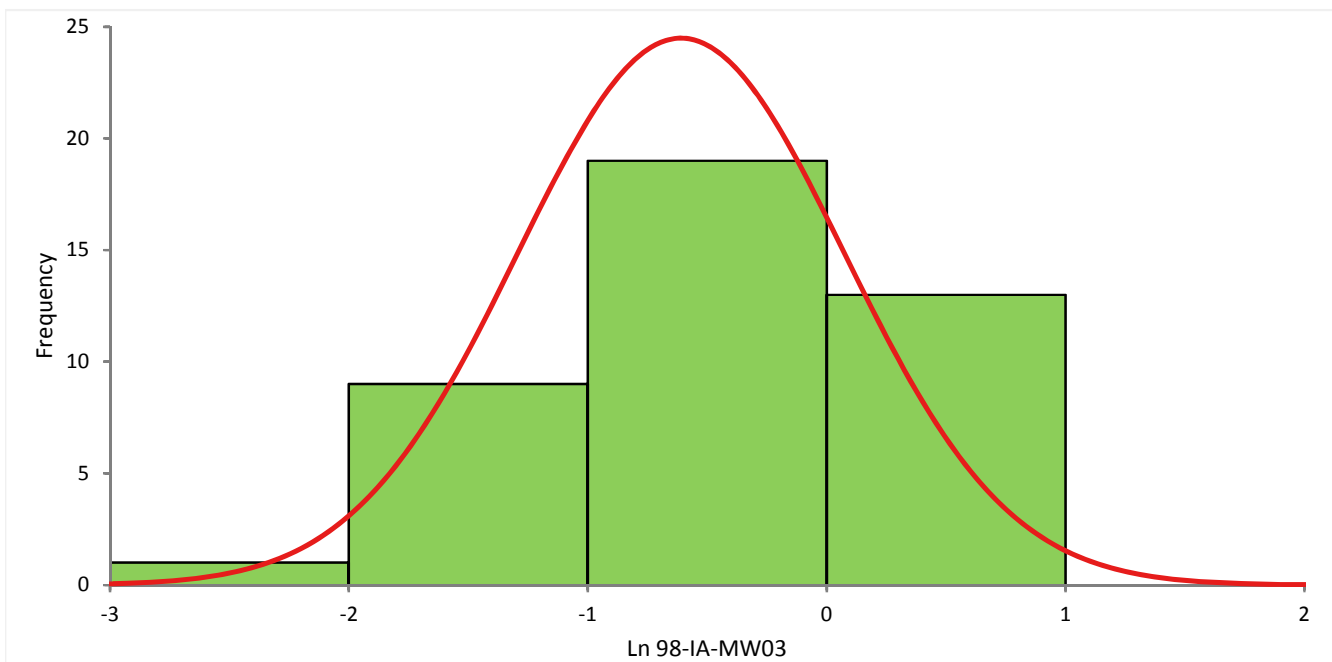
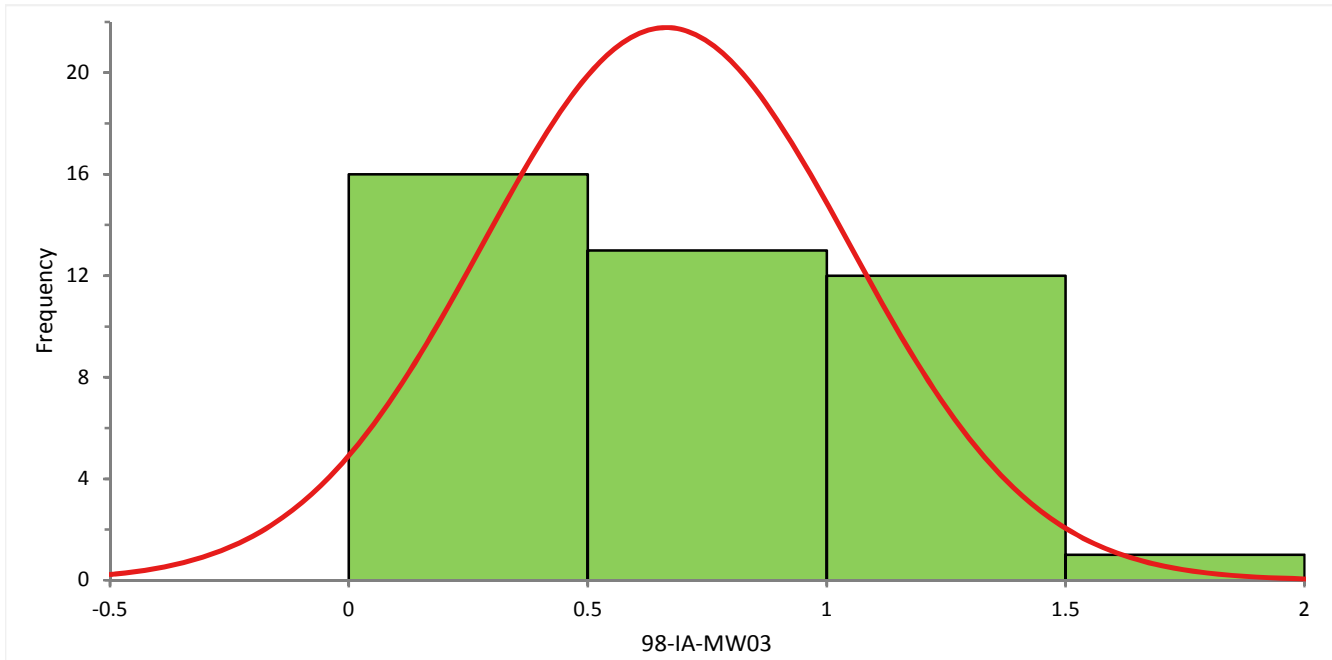
Appendix B - Statistics Graphs

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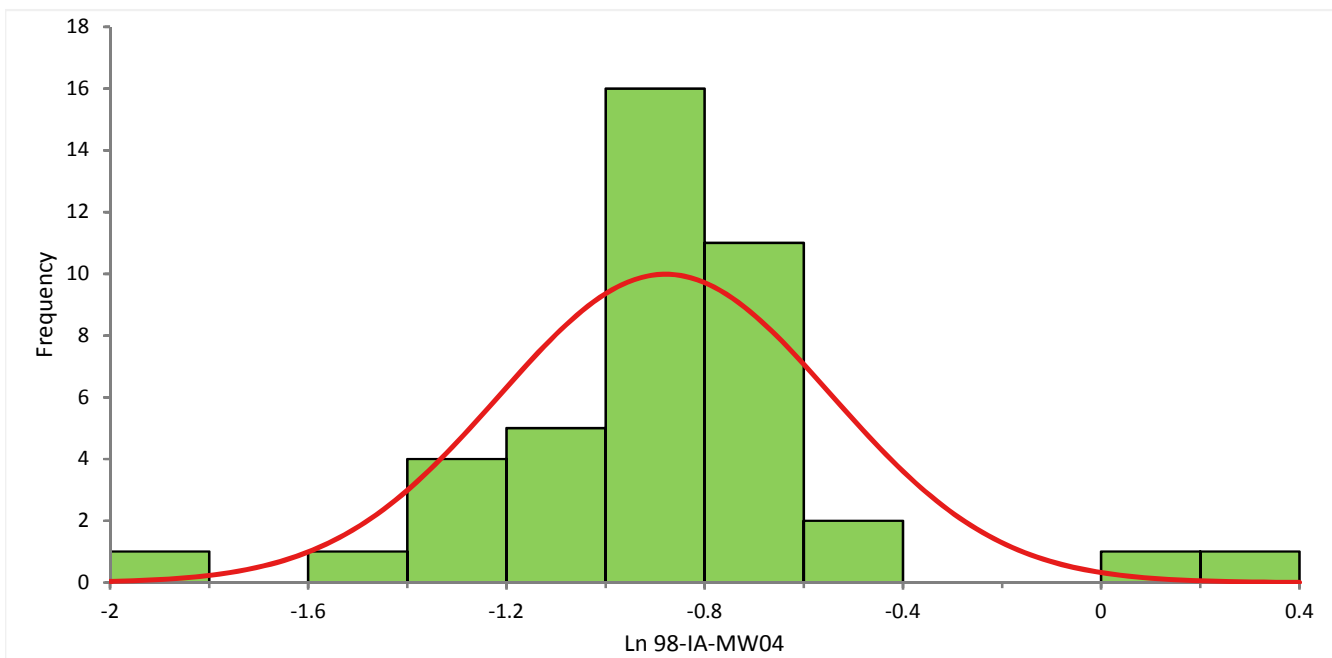
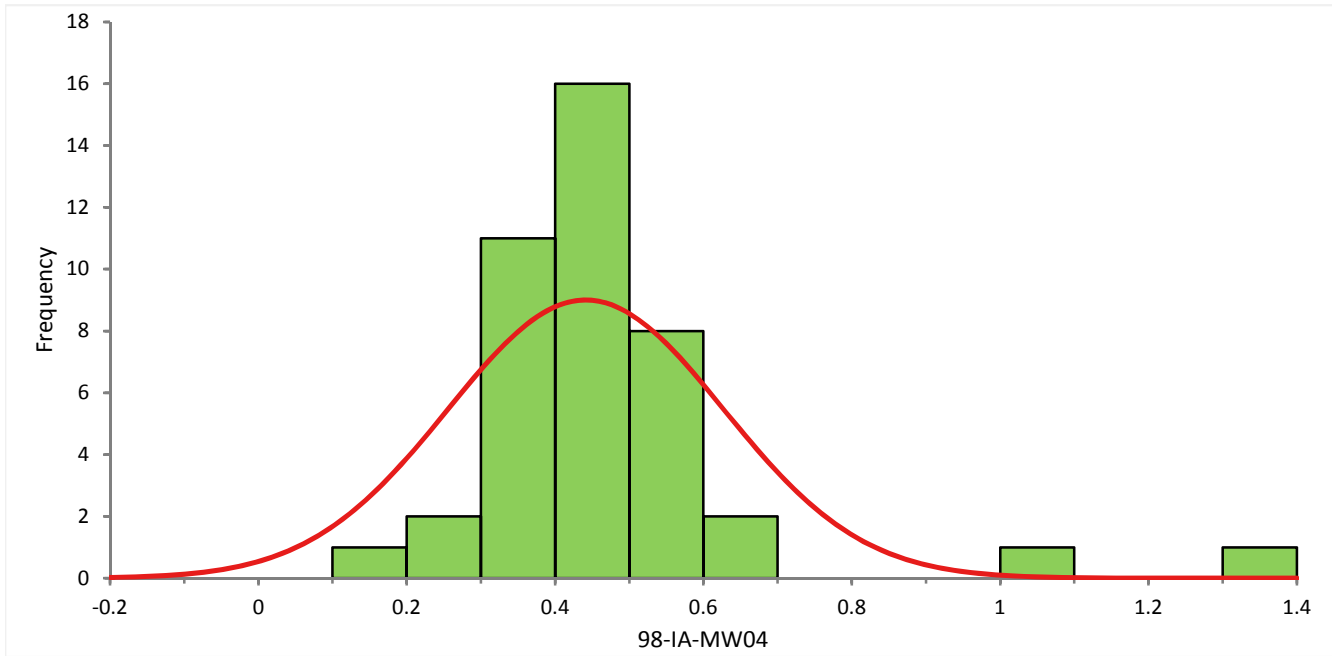
Appendix B - Statistics Graphs

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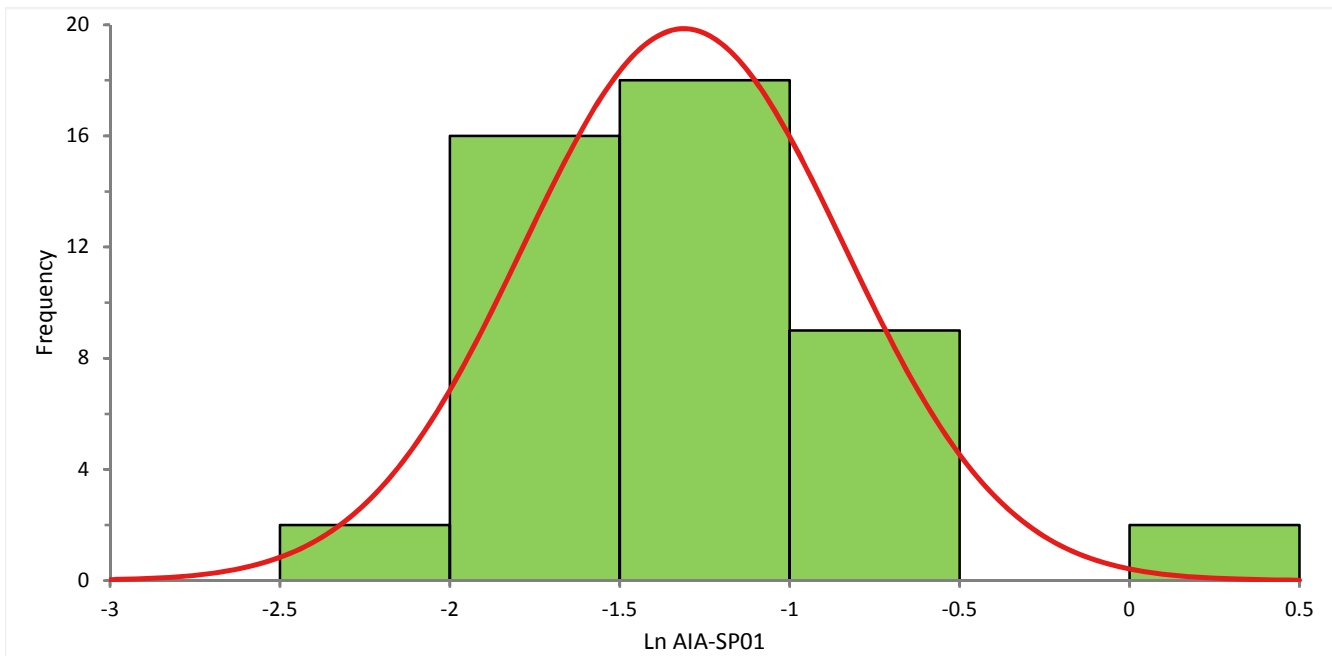
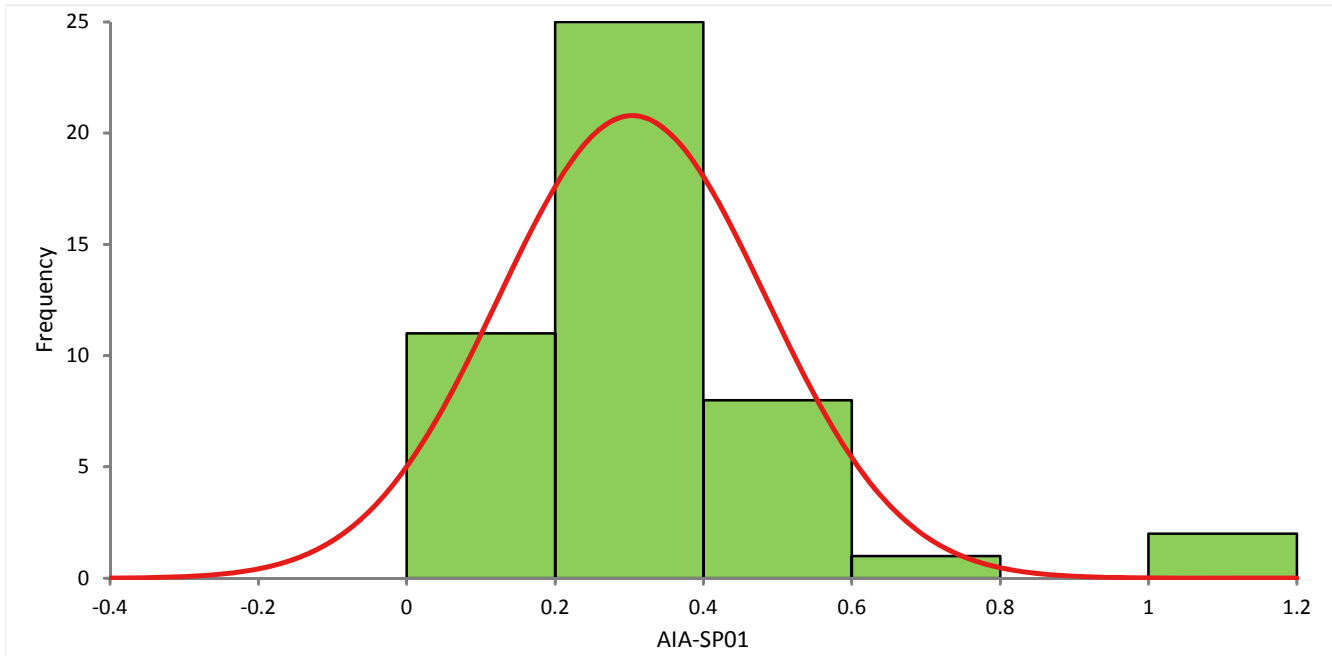
Appendix B - Statistics Graphs

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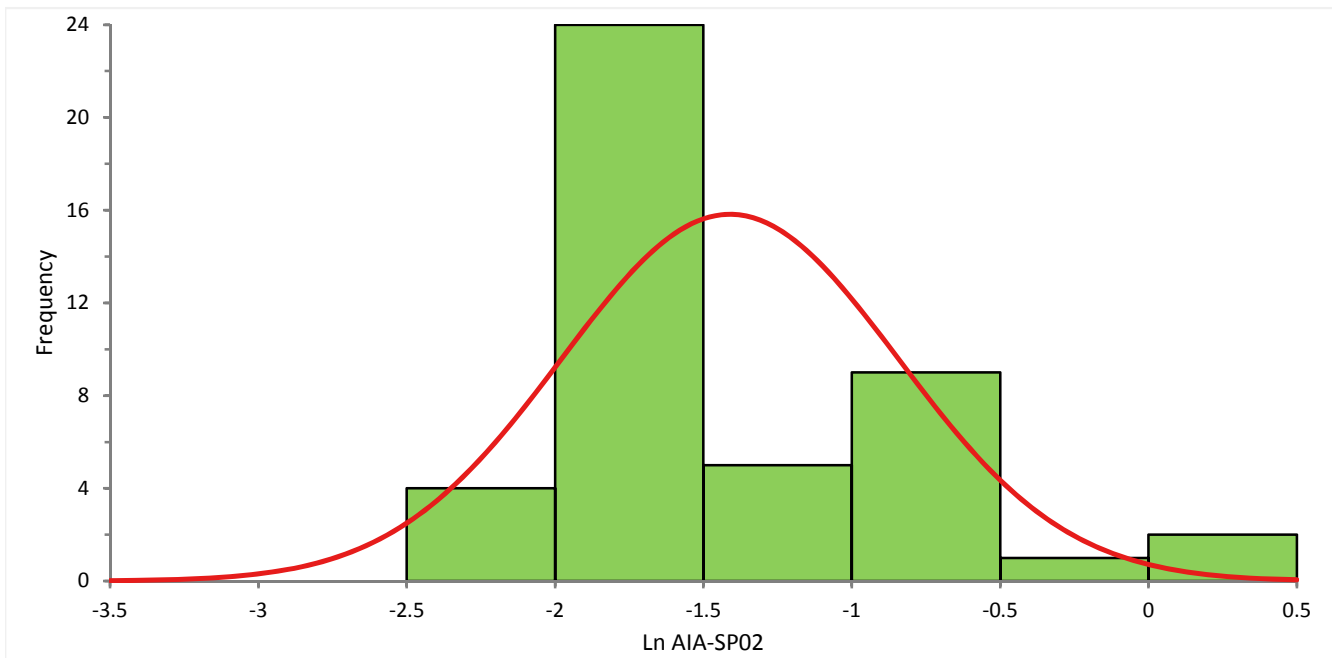
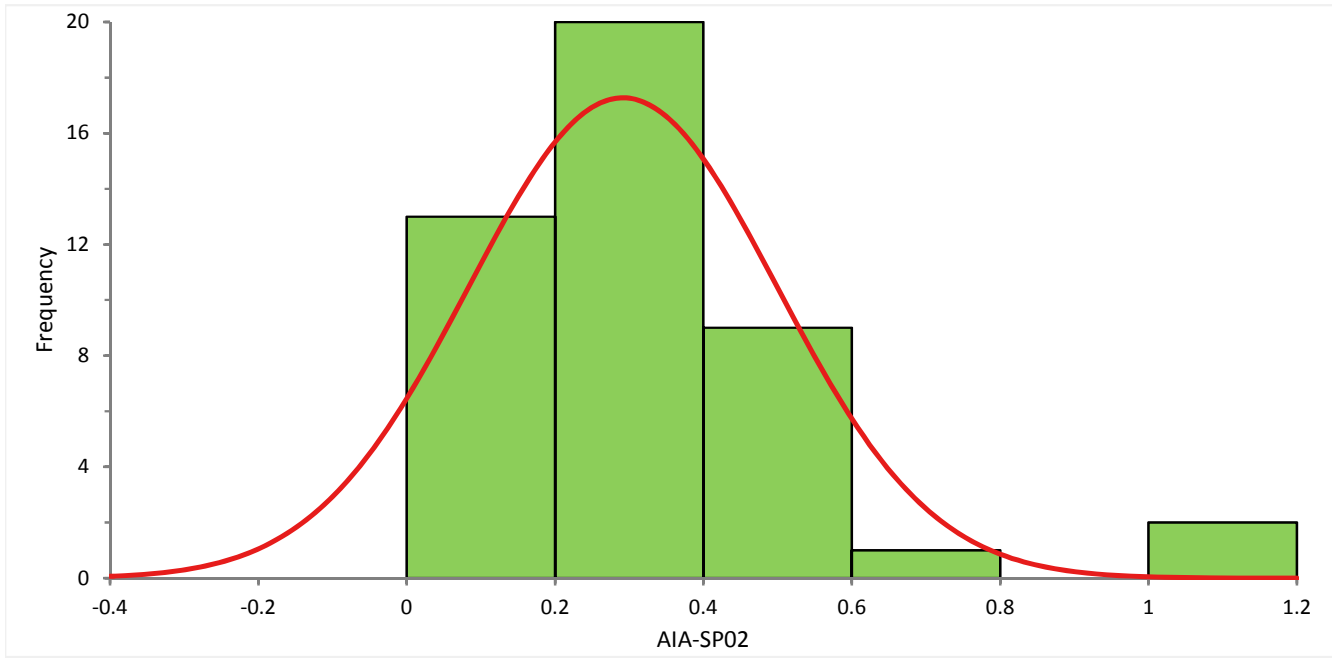
Appendix B - Statistics Graphs

Distribution Histograms, Artillery Impact Area, Joint Base Lewis - McChord, Washington 98433



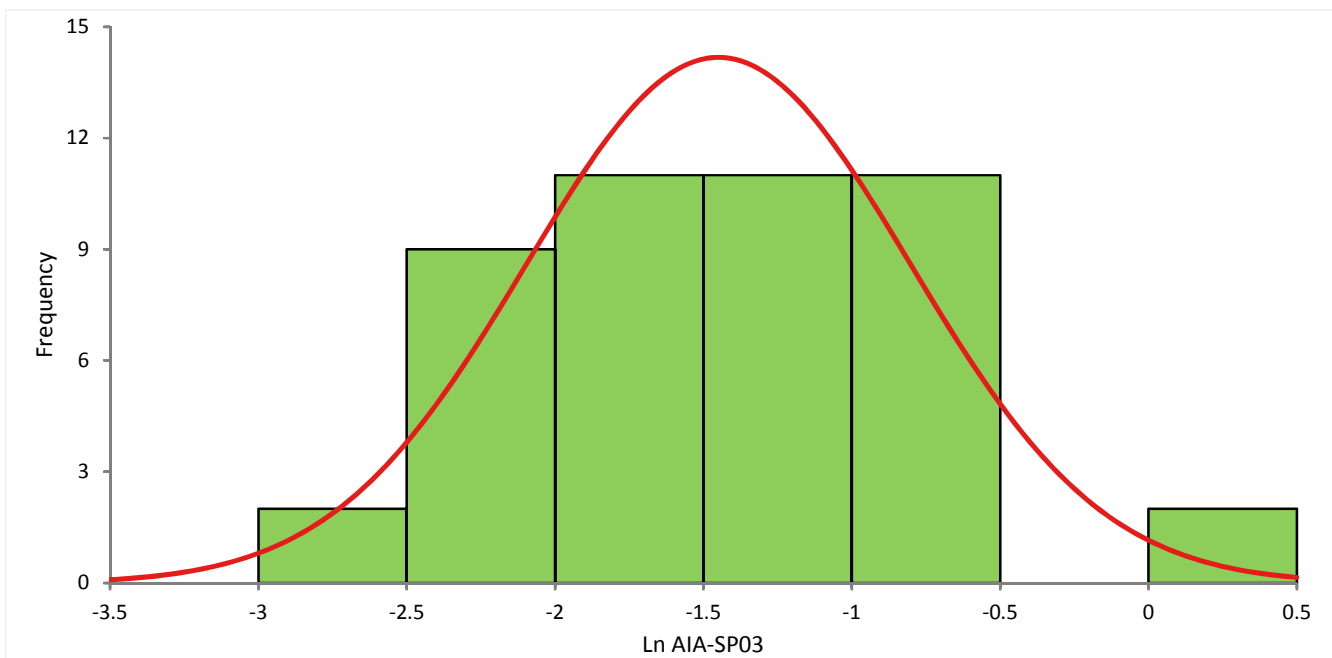
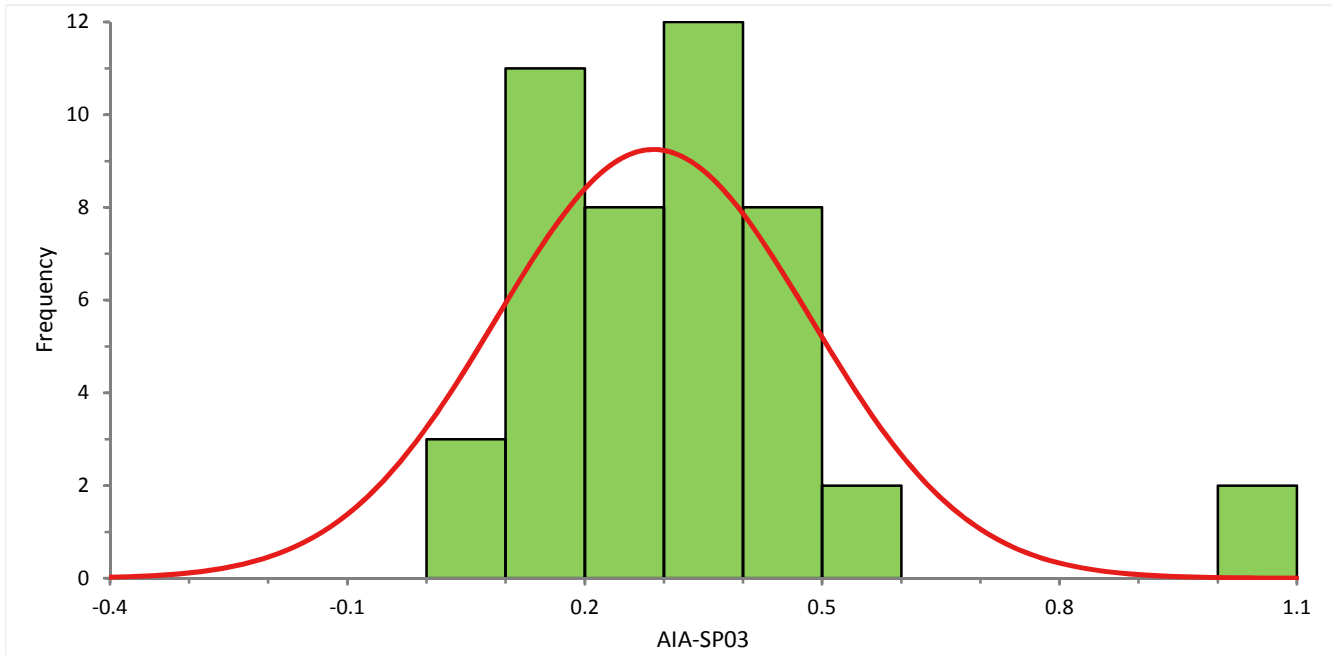
Appendix B - Statistics Graphs

Distribution Histograms, Artillery Impact Area, Joint Base Lewis - McChord, Washington 98433



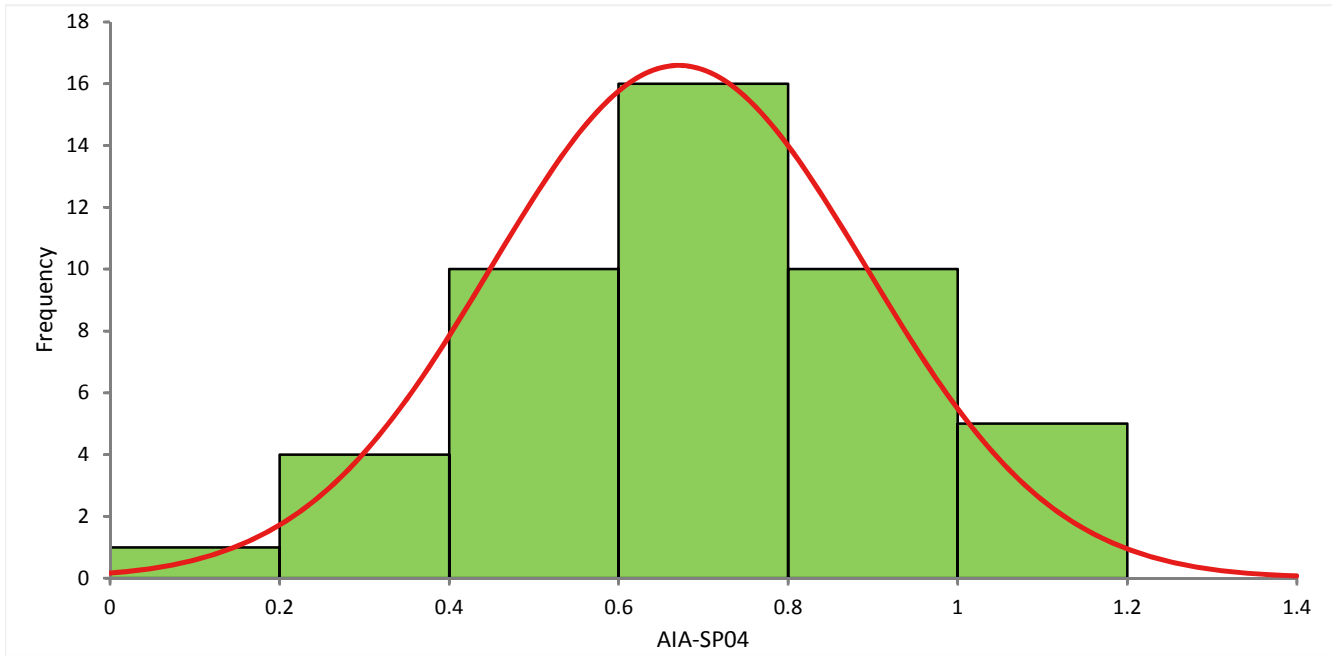
Appendix B - Statistics Graphs

Distribution Histograms, Artillery Impact Area, Joint Base Lewis - McChord, Washington 98433



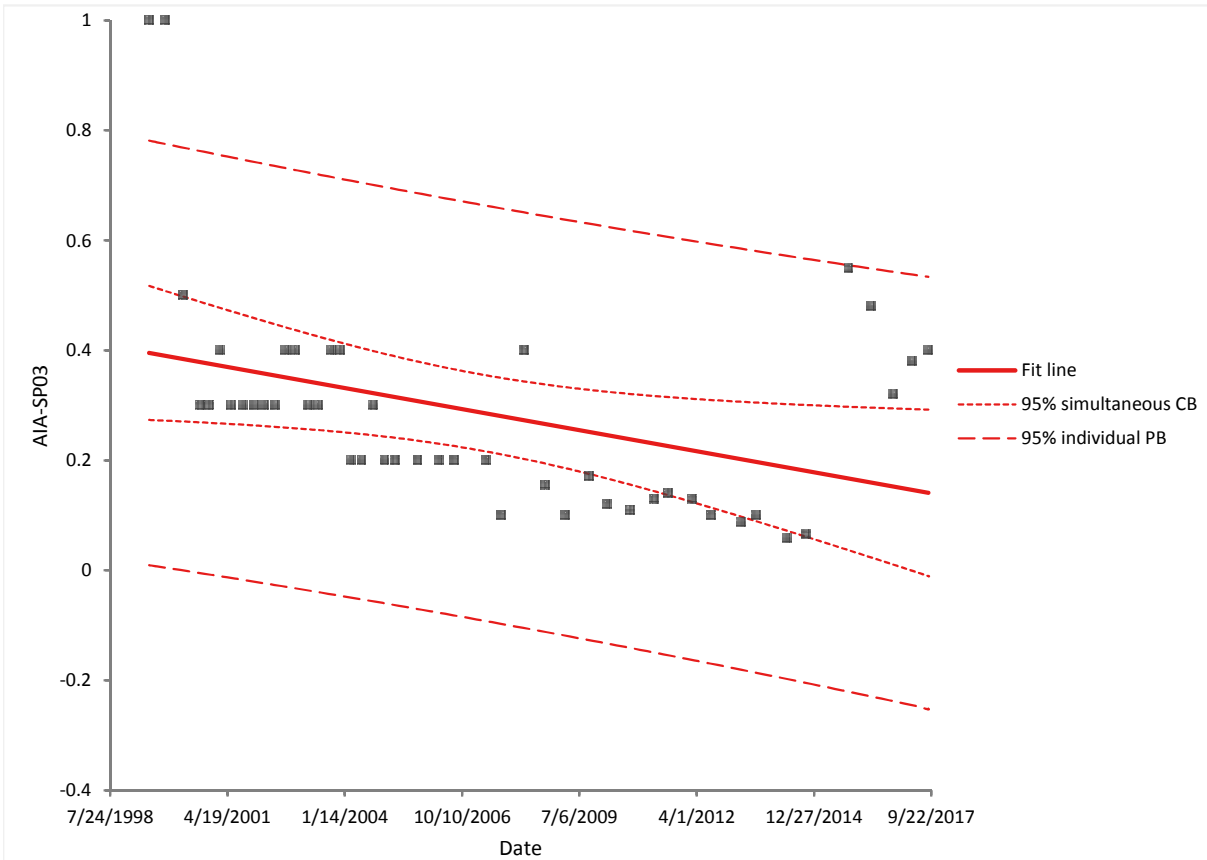
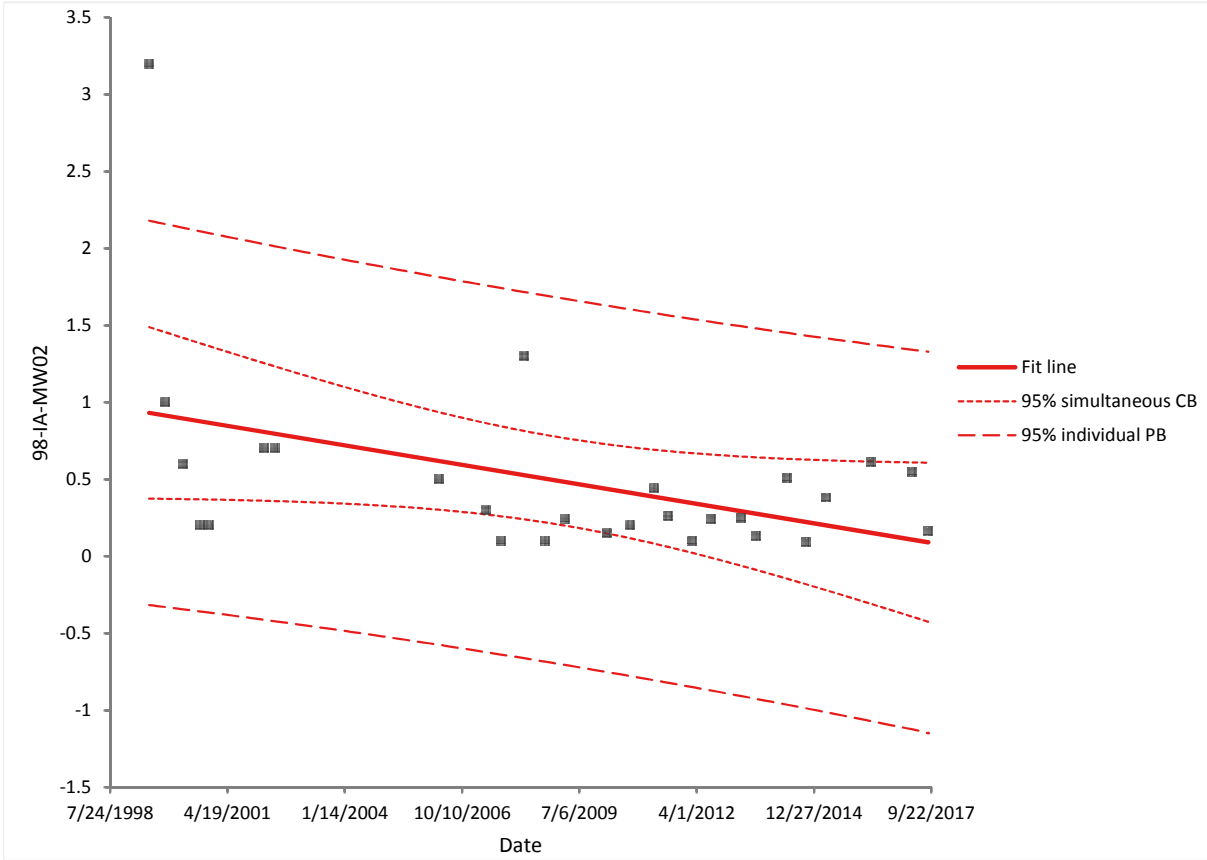
Appendix B - Statistics Graphs

Distribution Histograms, Artillery Impact Area, Joint Base Lewis - McChord, Washington 98433



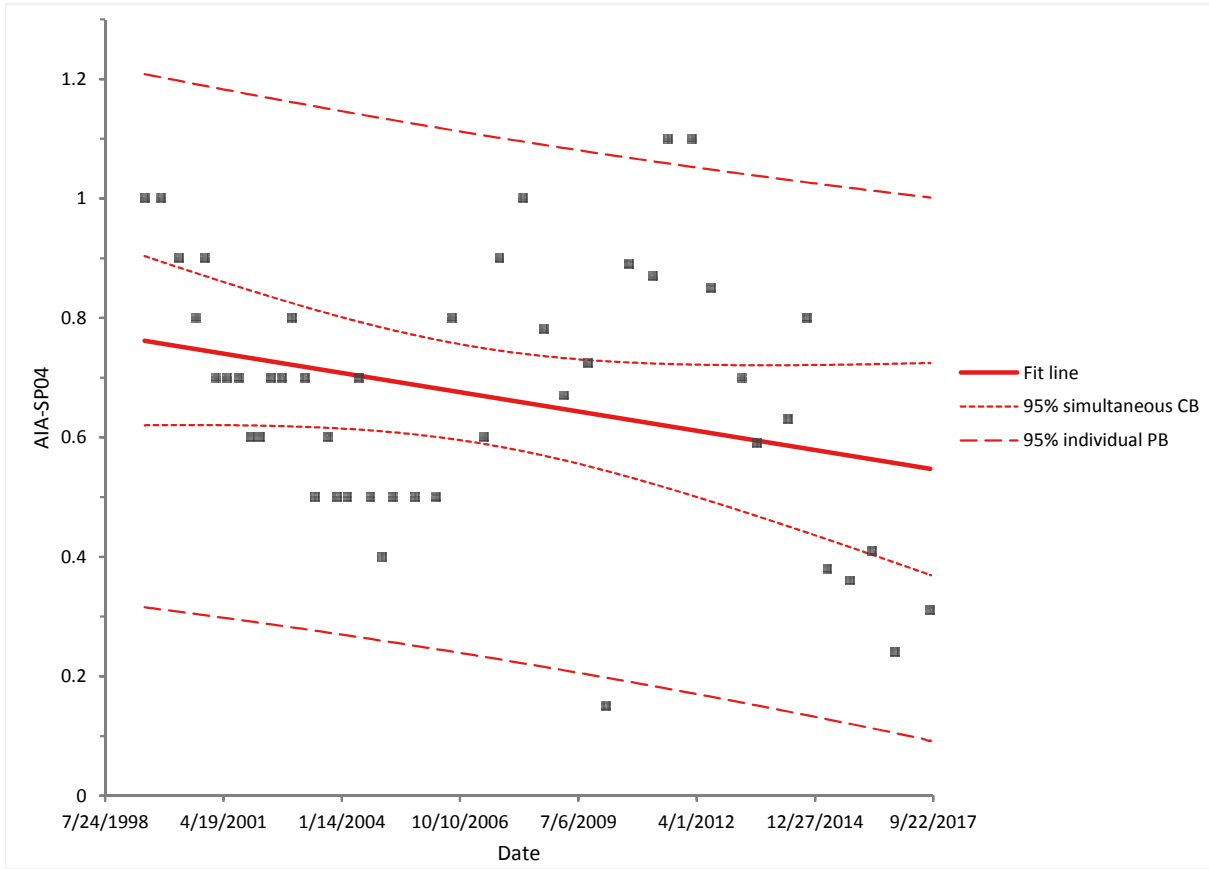
Appendix B - Statistics Graphs

Linear Regression Graph, Artillery Impact Area, Joint Base Lewis - McChord, Washington 98433



Appendix B - Statistics Graphs

Linear Regression Graph, Artillery Impact Area, Joint Base Lewis - McChord, Washington 98433



Appendix B - Statistics Graphs
Kendall Correlation Graphs, Artillery Impact Area, Joint Base Lewis - McChord, Washington 98433

