K&L Distributors UST Closure / Site Characterization

945 Elizabeth Street
Fairbanks, Alaska

September 2013

Prepared for:

Inland Petroservice Inc

Prepared by:

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EXECUTIVE SUMMARY

This report summarizes the findings of the underground storage tank (UST) closure conducted by Alaska Resources and Environmental Services, LLC (ARES) for the subject property referenced as K&L Distributors. The property surveyed in this report is located at 945 Elizabeth Street, Fairbanks, Alaska. The property is currently owned by the Fairbanks Beer Holdings Inc.

The UST Closure / Site Characterization was conducted in July, 2013 at the request of Mr. Keith Rousseau, Owner of Inland Petroservice Inc., who was contracted to remove the UST at the site. The purpose of this project was to perform a limited site characterization and to investigate the subsurface conditions following the removal of a 1,500-gallon UST used for the storage of # 2 heating fuel oil for the property located at 945 Elizabeth Street.

Following the removal of the UST, the site was inspected and soil field screen samples collected. No staining of soils were observed in the area of excavation or stockpiled soils, however, a strong diesel odor was detected typical of a highly weathered diesel fuel. Soil field screen samples were collected from the sidewalls, base of excavation and stockpile to access site conditions and determine location of soil analytical sampling points. A total of twenty eight (28) soil field screen samples were collected during the 1,500-gallon UST closure / site characterization.

Base on soil field screen sample results, contaminated soils were encountered at the base of the UST excavation at approximately 7.5' bgs and extended to an unknown depth. The top of the UST was approximately 3' bgs. The highest recorded PID field screen reading recorded for samples collected from the excavation pit was Sample # 16 (7.5' bgs) at 44.4 ppm. The highest recorded PID field screen reading recorded for samples collected from the stockpiled soil was Sample # 18 at 50.1 ppm.

The total area of excavation was approximately 208 square feet in size and the maximum depth of excavation was 7.5' bgs. Additional excavation could not occur adjacent to the building due to concern of structurally undermining the building foundation. The vertical and horizontal (north and west) extent of soil contamination at the site is unknown. Groundwater was not encountered during excavation. The impacts to groundwater are unknown. An estimated 40-50 cubic yards (CY) of soils were stockpiled and determined to be above ADEC cleanup levels based on soil field screen samples. Disposal records indicate that 64.25 tons of contaminated soils were transported to OIT for treatment and disposal.

A total of nine soil samples (includes blind field duplicate sample for QA/QC purposes) were collected on July 19, 2013 from the excavation area to verify final site conditions and from the soil stockpile to determine status of soils for disposal purposes. Soil samples consisted of grab samples and all samples were analyzed for GRO/BTEX by method AK 101/EPA 8021B, DRO by method AK 102 and RRO by method AK 103. Two soil samples were also analyzed for PAH compounds by EPA method 8270D from the area having the highest DRO concentration.

Based on soil analytical results the site was below ADEC cleanup levels for GRO, RRO, BTEX and PAH compounds.

Based on soil analytical results, DRO contaminated soils above ADEC cleanup levels remain in place on the north and west sidewalls and at the base of the excavation (7.5' bgs). DRO contaminated soils were detected on the west sidewall (5.5' bgs) at 614 mg/kg, the north sidewall (6.0' bgs) at 376 mg/kg and DRO in the base of the excavation ranging from 301 mg/kg – 628 mg/kg. Stockpiled soils were above ADEC cleanup levels and ranged from 521 mg/kg – 1,170 mg/kg. The ADEC cleanup level for DRO in soil is 250 mg/kg.

ARES recommends the following actions:

1) Based on analytical results, soils are above ADEC cleanup levels for DRO. Contaminated soils identified in this site assessment as remaining in-place should not be excavated or disturbed without prior approval of landowner and ADEC. Soils in the vicinity of documented contamination should be properly characterized if disturbed in the future and segregated accordingly;
2) Prior to backfill and site restoration, ARES recommends adding high nitrogen based fertilizer in the excavation pit to enhance microbal growth and bioremediation at the site;
3) Due to structural limitations, remaining contaminated soils were left in place. To aid in reduction of DRO contamination at the site, ARES recommends that a passive aeration system be installed to increase oxygen level and provide a pathway for increased air flow to the subsurface. The proposed system would be constructed using perforated pipe placed at the length of the base of excavation and two vertical PVC pipes rising above ground level. A passive wind generated turbine would be installed to conduct air flow thru the system. The system would also provide a pathway for adding liquid nutrients (liquid fertilizer) to subsurface soils to enhance microbal growth and bioremediation at the site;
4) Impacts to groundwater are unknown at this time. Installation of groundwater monitoring wells would be required in accordance with 18 AAC 78.235 Release Investigation requirements to determine if groundwater has been impacted at the site; ADEC approval of Work Plan would be required.;
5) Institutional controls should be implemented at the site to include restricting installation of on-site water wells;
6) A copy of certificate of remediation should be included as an addendum to this report once received from OIT;
7) A copy of this report should be submitted to property owner along with distribution to ADEC.

Table of Contents

Tables

Appendices

ACRONYMS AND ABBREVIATIONS

AAC .....Alaska Administrative Code
ADEC.....Alaska Department of Environmental Conservation
ARES .....Alaska Resources and Environmental Services, LLC
bgs.....Below Ground Surface
BTEX .....Benzene, Toluene, Ethylbenzene and Xylenes
COC .....Chain of Custody
Cy.....Cubic Yards
°C .....Degrees Celsius
DRO .....Diesel Range Organics
°F.....Degrees Fahrenheit
ft²....Square Feet
HS .....Headspace
LCS .....Laboratory Control Sample
LCSD .....Laboratory Control Sample Duplicate
mg/kg .....Milligrams per kilogram
mg/l .....Milligrams per liter
MS/MSD .....Matrix Spike/Matrix Spike Duplicate
ND.....Non-Detect
PAH.....Polycyclic Aromatic Hydrocarbon
PID .....Photoionization Detector
ppm .....Parts Per Million
POL.....Petroleum, Oil & Lubricants
PQL.....Practical Quantitation Limit
QA.....Quality Assurance
QC.....Quality Control
RPD.....Relative Percent Difference
TB .....Trip Blank
UST.....Underground Storage Tank

UST Closure / Site Characterization

1.0 INTRODUCTION

This report summarizes the findings of the underground storage tank (UST) closure conducted by Alaska Resources and Environmental Services, LLC (ARES) for the subject property referenced as K&L Distributors. The property surveyed in this report is located at 945 Elizabeth Street, Fairbanks, Alaska (Figures 1,2).

The UST Closure / Site Characterization was conducted in July 2013 at the request of Mr. Keith Rousseau, Owner of Inland Petroservice Inc. This report contains a summary of on-site work and includes field observations and analytical data from sampling activities.

1.1 Objectives and Scope of Work

The purpose of this project was to perform a limited site characterization and to investigate the subsurface conditions following the removal of a 1,500-gallon UST used for the storage of # 2 heating fuel oil for the property located at 945 Elizabeth Street. Field screen samples were collected in the vicinity of the UST and were used to characterize soils. Subsurface soil samples were collected from the excavation sidewalls and base of the excavation to verify final site conditions.

The property is currently owned by the Fairbanks Beer Holdings Inc., with the business operating on the subject property as K&L Distributors.

1.2 Project Organization / Personnel

Inland Petroservice Inc., provided equipment and personnel to excavate, remove and decommission the UST. The mailing address for Inland Petroservice Inc. is 3690 Braddock Street, Fairbanks, AK 99701. The telephone number for Inland Petroservice Inc. is (907) 451-1905.

C&R Pipe accepted disposal of cut and cleaned UST for process as scrap metal. The mailing address for C&R Pipe is 401 E Van Horn Road, Fairbanks, Alaska 99701. The telephone number for C&R Pipe is (907) 456-8386.

Test America of 2000 W International Airport Road Suite A10, Anchorage, Alaska 99502-1119, performed laboratory analysis of soil (GRO, BTEX, DRO and RRO). Test America is approved by ADEC to provide testing of soil for hazardous substances and petroleum related contaminants. The telephone number for Test America is (907) 563-9200.

Test America of 11922 E 1st Avenue, Spokane, WA 99206, performed laboratory analysis for PAH in soil. Test America is approved by ADEC to provide testing of soil for hazardous substances and petroleum related contaminants. The telephone number for Test America Spokane is (509) 924-9290.

OIT Inc., (Moose Creek facility) accepted petroleum contaminated materials for treatment by thermal remediation. The mailing address for OIT is P.O. Box 55878 North Pole, Alaska 99705. The telephone number for OIT Inc. is (907) 488-4899.

The limited Site Characterization was completed in July 2013, by Mr. Lyle Gresehover Principle Investigator/Geologist for ARES. Mr. Gresehover is listed as a Qualified Person by the Alaska Department of Environmental Conservation (ADEC) under 18 AAC 78. Mr. Lyle Gresehover is the point of contact for this project and may be contacted at Alaska Resources & Environmental Services, LLC, P.O. Box 83050 Fairbanks, Alaska 99708. The telephone number for Mr. Gresehover is (907) 374-3226.

In summary Inland Petroservice, performed the following activities:

- Excavation and removal of the 1,500-gallon heating fuel oil UST located on-site to include removal and disposal of tank and all associated piping;
- Conducted excavation of petroleum contaminated materials;
- Transport of petroleum contaminated soils to OIT Inc. for thermal remediation; and
- Performed site restoration work.

In summary C&R Pipe, performed the following activities:

- Received and accepted as scrap metal, one (1) 1,500-gallon home heating fuel UST generated from 945 Elizabeth Street property;

In summary Test America (Anchorage), performed the following activities:

- Conducted laboratory analysis of soil and water samples. Soil samples were analyzed for GRO/BTEX using methods AK 101 / EPA 8021B, DRO by method AK 102 and RRO by method AK 103. Laboratory quality control and quality assurance was also completed;

In summary Test America (Spokane), performed the following activities:

- Conducted laboratory analysis of soil samples. Soil samples were analyzed for PAH using method EPA 8270D. Quality control and quality assurance was also completed;

In summary OIT Inc., performed the following activities:

- Accepted petroleum-contaminated soils and treated by thermal remediation;

In summary ARES performed the following activities:

- Performed Site Characterization at the subject property;
- Obtained field measurements to include site plan, PID field screening measurements, and sample locations. Documented site activities;
- Collection of soil field screen and soil analytical samples; and
- Preparation of Final Report.

These activities are intended to satisfy requirements listed in 18 AAC 75 for site characterization requirements.

1.3 Regulatory Framework

A regulatory framework for the site assessment activity has been developed with the consideration of the following regulations and guidance:

- 18 AAC 75 *Oil and Other Hazardous Substances Pollution Control*, as amended through April 8, 2012;
- 18 AAC 78 *Underground Storage Tanks* as amended through July 25, 2012;
- ADEC *UST Procedures Manual* as amended through November 7, 2002;
- Site characterization requirements are provided by ADEC in 18 AAC 75, Articles 3 and 9 Discharge Reporting, Cleanup, and Disposal of Oil and Other Hazardous Substances and General Provisions as amended through April, 2012;
- ADEC soil cleanup levels in accordance with 18 AAC 75.341 Table B1 and B2, Method Two, 'under 40" zone', most stringent level listed;
- *ADEC Draft Field Sampling Guidance* as amended through May 2010;
- API 1604 *American Petroleum Institute - Closure of Underground Petroleum Storage Tanks;*
- API 2015 *American Petroleum Institute – Requirements for Safe Entry & Cleaning of Petroleum Storage Tanks;*

2.0 SITE DESCRIPTION

2.1 Location

The property located at 945 Elizabeth Street (Figures 1,2) is situated in an area primarily used for commercial and light industrial purposes in the vicinity Fairbanks, Alaska. The lot consists of one commercial building on a 1.26 acre parcel. The 1,500-gallon UST used for the storage of heating fuel oil (# 2 diesel) was located adjacent and south of the warehouse (Figure 3). The legal description for the site is: Tax Lot 2, Block 1 Burgess Industrial Park.

The GPS coordinates for the site are N 64º 51.181', W -147º 46.035'. The elevation of the site is 447' above mean sea level. The subject property is located in the U.S. Geological Survey (USGS) Fairbanks D-2 SE quadrangle (Figures 1-2).

2.2 History

According to staff from K&L Distributors, the 1,500-gallon UST was closed at place and replaced with an aboveground storage tank (AST). The UST was in use prior to decommissioning.

K&L Distributors contracted Inland Petroservce to remove the UST with the work being completed by July 18, 2013. ARES collected soil field screen samples on July 19, 2013 to determine if contaminated soils were present. Soil field screen samples indicated that contaminated soils were present above ADEC cleanup levels. ARES submitted an ADEC Spill Notification form on July 24, 2013 (Appendix D).

2.3 Site Topography, Geology, and Hydrology

Topography

The United States Geological Survey (USGS) Fairbanks Quadrangle (D-2 SE) provides topographic map coverage of the site (Figure 1). Fairbanks is located in the northern part of the Tanana Basin, which is a relatively flat floodplain of the Tanana River. The subject property is situated approximately 0.54 miles north of the Chena River and 3.95 miles north of the Tanana River.

Regional Soils/Geology

Soils in the area are derived from the alluvial-plain deposits and generally consist of alternating layers and lenses of unconsolidated sandy gravels and gravely sands, overlain by silt. The well – drained Salchaket soils border the principle rivers in the area and are the most extensive soils of the alluvial plains. The site is underlain by Minto silt loam.

The Minto soils consist of moderately well drained soils that have developed into micaceous silty material with many areas underlain at a depth of 6 feet or more by irregular , discontinuous masses of ice. Discontinuous permafrost underlies the floodplain area and can extend to depths of 200 feet or more. The hills to the north of the site area are part of a metamorphic system that forms the Yukon – Tanana Upland. The basin uplands consist of a combination of fractured schist with isolated granitic plutons.. Areas of discontinuous permafrost underlie north-facing slopes. Eolian silts of the Fairbanks Loess and reworked silt deposits cover the flanks of bedrock uplands in the proximity of the Tanana River. These deposits vary in thickness and grade into alluvial-fan deposits and the Chena Alluvium.

Site Soils

Soils obtained during the subsurface investigation were observed to consist primarily of silt (0-7.5’ bgs).

Regional Hydrology

The Chena and Tanana rivers are the dominant influence on ground-water flow in the subject area. Two discharge peaks characterize the Chena River: spring snowmelt runoff and late summer precipitation. The stage of Chena River typically rises and falls in response to stage changes of the Tanana River. The depth to groundwater varies in response to these controlling factors. Based on interpretation of USGS data and historical data, regional groundwater flow

direction is generally to the west-northwest. However, the direction of flow can vary slightly depending on the stage of the Chena River and Tanana River. Depth to groundwater in the area is generally 12-14 feet bgs, though seasonal fluctuation can range between 10-16 feet bgs.

Site Hydrology

Groundwater was not encountered during excavation and removal of the UST.

3.0 SAMPLING

3.1 Weather Conditions

Fieldwork was conducted July 19, 2013. Weather conditions ranged from 56 º - 58º F, with overcast skies, showers and winds 0-5 mph.

3.2 UST Removal

Prior to UST removal, the UST was measured for level of free product and to verify the tank was empty before removal. The top of the tank was exposed and fuel lines were then removed. All soils were stockpiled adjacent to the excavation pit by Inland Petroservice pending collection of soil field screen samples.

3.3 Field Screen Sampling

Twenty eight (28) soil field screen samples were collected for the 1,500-gallon UST closure / site characterization located at 945 Elizabeth Street. ARES used a MiniRAE 2000 PID (Serial No. PGM7600-110-002244). The PID was used for headspace screening of samples according to ADEC field screening procedures. The PID was calibrated prior to each period of use to 0 parts per million (ppm) free air and 100 ppm isobutylene calibration gas, using a response factor of 10.

Field screen samples were collected and used as a guide to determine analytical sampling points and status of stockpiled soils. All excavated soils that had PID readings ≥ 20.0 ppm were considered contaminated and were stockpiled on-site pending transported to OIT Inc., for thermal remediation. Field screen sample showing readings < 20 ppm were considered clean and used as backfill.

Headspace screening was conducted as follows: Soil samples were transferred directly into a ziplock-type bag. Each bag was filled one-third to one half full, then warmed for 15 to 20 minutes. Temperatures of the soil in the bag were warmed to at least 16ºC (60ºF). Samples were agitated at the beginning and end of the warming period inside the bag to enhance volatilization. The bags were partially opened after the warming and the VOCs in the headspace above the soil were sampled by inserting the PID probe. The highest meter reading obtained was recorded. Field screen results are displayed in Table 1. Field screen sample locations are shown in Figure 4.

Table 1: Field Screen Measurements Summary
(Results displayed in ppm)

1235 19th Avenue						
Sample ID	**Depth (ft)**	**PID Value (ppm)**		**Sample ID**	**Depth (ft)**	**PID Value (ppm)**
1	0.5	0.2		15	7.5	11.3
2	5.5	8.1		16	7.5	44.4
3	0.5	1.0		17	1.5	32.5
4	5.0	7.4		18	1.5	50.1
5	5.5	8.2		19	1.5	3.8
6	5.5	4.0		20	1.5	2.7
7	5.5	0.9		21	1.5	6.8
8	5.5	0.9		22	1.5	6.0
9	5.5	0.6		23	1.5	25.3
10	6.0	0.5		24	1.5	6.3
11	5,5	0.3		25	1.5	22.8
12	5.5	0.1		26	1.5	7.9
13	5,5	0.2		27	1.5	4.5
14	7.5	6.4		28	1.5	16.9

3.4 Field Observation

ARES arrived on-site July 19, 2013. Weather conditions were overcast skies with light rain, winds 0-10 mph and 56° F.

Upon arrival, the UST had previously been removed and all soils stockpiled adjacent to the excavation. No staining of soils were observed in the area of excavation or stockpiled soils, however, a strong diesel odor was detected typical of a highly weathered diesel fuel. Soil field screen samples were collected from the sidewalls, base of excavation and stockpile to access site conditions and determine location of soil analytical sampling points. Soil field screen Samples # 1-16 were collected from the UST excavation. Soil field screen Samples # 17-28 were collected from stockpiled soil to determine disposal status.

Base on soil field screen sample results, contaminated soils were encountered at the base of the UST excavation at approximately 7.5' bgs and extended to an unknown depth. The top of the UST was approximately 3' bgs. The highest recorded PID field screen reading recorded for samples collected from the excavation pit was Sample # 16 (7.5' bgs) at 44.4 ppm. The highest recorded PID field screen reading recorded for samples collected from the stockpiled soil was Sample # 18 at 50.1 ppm.

The total area of excavation was approximately 208 square feet in size and the maximum depth of excavation was 7.5' bgs. Additional excavation could not occur adjacent to the building due to concern of structurally undermining the building foundation. The vertical and horizontal

(north and west) extent of soil contamination at the site is unknown. Groundwater was not encountered during excavation. The impacts to groundwater are unknown. An estimated 40-50 cubic yards (CY) of soils were stockpiled and determined to be above ADEC cleanup levels based on soil field screen samples.

A visual inspection of the 1,500-gallon UST was conducted and revealed corrosion on both the inner and outer wall surfaces. Small holes approximately 0.1 – 0.4 cm in size were observed near the base of the tank. The UST was a single walled tank with no secondary containment or cathodic protection.

Inland Petroservice transported and disposed approximately 40-50 CY of contaminated soils to OIT Inc., for treatment by thermal remediation. The UST was cut and cleaned and disposed at C&R Pipe for recycling.

3.5 Analytical Sampling

A total of nine soil samples (includes blind field duplicate sample for QA/QC purposes) were collected on July 19, 2013 from the excavation area to verify final site conditions and from the soil stockpile to determine status of soils for disposal purposes. Soil samples consisted of grab samples and all samples were analyzed for GRO/BTEX by method AK 101/EPA 8021B, DRO by method AK 102 and RRO by method AK 103. Two soil samples were also analyzed for PAH compounds by EPA method 8270D from the area having the highest DRO concentration. All soil samples were collected from areas showing highest final field screen readings and in accordance with *UST Procedures Manual* and *ADEC Draft Field Sampling Guidance.* Soil sample locations collected for laboratory analysis are shown in Figures 4. Soil analytical results are summarized in Tables 2,3.

Analytical samples were placed into certified clean glass jars provided by Test America. Samples were handled using disposable Nitrile gloves. To comply with the *UST Procedures Manual* for VOC samples, 25 milliliters of a methanol/surrogate was carefully added to the undisturbed soil in the partially filled pre-weighted sample jar so that the sample was completely submerged. Soil samples were collected in order of decreasing volatility. A 40-milliliter sample jar of soil was also collected from each sample location in order to determine total percent solids. Sample jars were properly labeled and placed into a pre-chilled cooler. The chilled temperature within the cooler was maintained at approximately 4ºC using frozen gel packages during transportation to the laboratory. A signed Chain-of-Custody (COC) form accompanied the samples to Test America. The COC is attached to Test America's Lab Report. Analytical results are included in Appendix C.

3.6 ADEC Target Cleanup Levels

Target soil cleanup levels for the petroleum-contaminated spill site were determined using 18 AAC 75.341 (Method Two) Soil Cleanup Levels (Table B1, B2), Under 40" zone. Groundwater cleanup levels are listed in 18 AAC 75.341 Table C.

3.7 Soil Analytical Results

The analytical results for samples collected from the UST excavation pit are summarized in Tables 3-5. Analytical sample locations are shown in Figure 4. Analytical results are included in Appendix C.

Table 2: Summary of Petroleum Analytical Results in Soil

Sample ID	Location	Depth in feet bgs	EPA Method 8021B				Alaska Method AK 101	Alaska Method AK 102	Alaska Method AK 103
			Benzene in mg/kg	Toluene in mg/kg	Ethyl-benzene in mg/kg	Total xylenes in mg/kg	GRO in mg/kg	DRO in mg/kg	RRO in mg/kg
KLD-01-0713	West sidewall	5.5	ND < 0.0155	ND < 0.0310	ND < 0.0310	ND < 0.0930	ND < 2.58	**614**	180
KLD-02-0713	North sidewall	6.0	ND < 0.0155	ND < 0.0309	ND < 0.0309	ND < 0.0928	ND < 2.57	**376**	ND < 53.5
KLD-03-0713	East sidewall	5.5	ND < 0.0155	ND < 0.0309	ND < 0.0309	ND < 0.0928	ND < 2.58	105	ND < 51.4
KLD-04-0713	South sidewall	6.0	ND < 0.0109	ND < 0.0218	ND < 0.0218	ND < 0.0655	ND < 1.82	ND < 20.9	ND < 52.3
KLD-05-0713	Base of excavation	7.5	ND < 0.0131	ND < 0.0262	ND < 0.0262	ND < 0.0785	ND < 2.18	**301**	204
KLD-06-0713	Base of excavation	7.5	ND < 0.0162	ND < 0.0323	ND < 0.0323	ND < 0.0969	ND < 2.69	**616**	461
KLD-07-0713 (Blind field duplicate to KLD-06-0713)	Base of excavation	7.5	ND < 0.0158	ND < 0.0317	ND < 0.0317	ND < 0.0951	ND < 2.64	**628**	281
KLD-08-0713	soil stockpile	1.5	ND < 0.0141	ND < 0.0281	ND < 0.0281	ND < 0.0844	ND < 2.34	**521**	ND < 52.7
KLD-09-0713	soil stockpile	1.5	ND < 0.0143	ND < 0.0286	ND < 0.0286	ND < 0.0859	ND < 2.38	**1170**	380
ADEC Cleanup Level [1]			0.025	6.5	6.9	63	300	250	11,000

[1] Title 18 of the Alaska Administrative Code, Chapter 75. Section 341. Table B1, B2 Method 2. Most stringent level listed for above 40" zone. Revised as of April 8, 2012.
Results above ADEC Regulatory Limit in **Bold**.

Table 3: Summary of PAH Analytical Results in Soil

Method	Compound	Sample ID KLD-06-0713	Sample ID KLD-07-0713 (Blind Duplicate to KLD-06-0713)	ADEC Cleanup Level [1]
Sample Depth (ft bgs)	-	7.5	7.5	-
EPA Method 8270D	Acenaphthene in mg/kg	ND	ND	180
	Acenaphthylene in mg/kg	ND	ND	180
	Anthracene in mg/kg	ND	ND	3000
	Benzo (a) anthracene in mg/kg	ND	ND	3.6
	Benzo (a) pyrene in mg/kg	ND	ND	2.1
	Benzo (b) fluoranthene in mg/kg	ND	ND	12
	Benzo (ghi) perylene in mg/kg	ND	ND	38700
	Benzo (k) fluoranthene in mg/kg	ND	ND	120
	Chrysene in mg/kg	ND	ND	360
	Dibenzo (a,h) anthracene in mg/kg	ND	ND	4.0
	Fluoranthene in mg/kg	ND	ND	1400
	Fluorene in mg/kg	ND	ND	220
	Indeno (1,2,3-cd) pyrene in mg/kg	ND	ND	41
	1-Methylnaphthalene	ND	ND	6.2
	2-Methylnaphthalene	ND	ND	6.1
	Naphthalene in mg/kg	ND	ND	20
	Phenanthrene in mg/kg	ND	ND	3000
	Pyrene in mg/kg	ND	ND	1000

[1] Title 18 of the Alaska Administrative Code, Chapter 75. Section 341. Table B1, B2 Method 2. Most stringent level listed for above 40" zone. Revised as of April 8, 2012.
ND – Not detected above reporting limit
Results above ADEC Regulatory Limit in **Bold**.

Based on soil analytical results the site was below ADEC cleanup levels for GRO, RRO, BTEX and PAH compounds.

Based on soil analytical results, DRO contaminated soils above ADEC cleanup levels remain in place on the north and west sidewalls and base of the excavation. DRO contaminated soils were detected on the west sidewall (5.5’ bgs) at 614 mg/kg, the north sidewall (6.0’ bgs) at 376 mg/kg and DRO in the base of the excavation ranging from 301 mg/kg – 628 mg/kg. Stockpiled soils were above ADEC cleanup levels and ranged from 521 mg/kg – 1,170 mg/kg. The ADEC cleanup level for DRO in soil is 250 mg/kg.

4.0 QUALITY ASSURANCE AND QUALITY CONTROL

4.1 Data Quality Review

Field quality control (QC) procedures for this project included the collection and analysis of a blind field duplicate sample and soil trip blank sample which accompanied the samples in the field. Blind field duplicate samples were analyzed for GRO, DRO, BTEX and PAH. The QC samples were analyzed to assess the quality of sample collection and handling, as well as the accuracy and precision of the laboratory's analytical procedures.

The ADEC Environmental Laboratory Data Quality Assurance Requirements (ADEC 2006) and United States Environmental Protection Agency (EPA) National Functional Guidelines for Organic Review (EPA 1999) were followed in this site investigation. The data were reviewed to determine the data quality and to evaluate potential impact on the usability of the data. The review was performed using Level II reports that were provided by Test America, Inc. laboratory of Anchorage, AK. The analytical laboratory repots, chain-of-custody records, and ADEC lab quality checklist is included in Appendix C.

The following quality control parameters were reviewed:

- Holding times
- Sample handling and receiving
- Surrogate percent recovery
- Field duplicate sample comparability
- Matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD)
- Laboratory control sample (LCS)/Laboratory control sample duplicate (LCSD) percent recoveries and RPD
- Method blanks
- Trip blanks
- Method Sensitivity – reporting limits and practical quantitation limits (PQL)

Due to high levels of target analyte in several of the analytical samples, some lab QC errors were identified including:

Semivolatiles
Qualifier Description
Z3 The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.
Qualifier
M4 The sample required a dilution due to matrix interference. Because of this dilution, the matrix spike concentrations in the sample were reduced to a level where the recovery calculation does not provide useful information. See Blank Spike (LCS).

M3 Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS).

Fuels

Qualifier Description

Q4 The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics.

Qualifier

Q11 Detected hydrocarbons in the diesel range do not have a distinct diesel pattern and may be due to heavily weathered diesel.

Q2 Typical pattern for diesel

RL7 Sample required dilution due to high concentrations of target analyte.

GC Volatiles

Qualifier Description

R4 Due to the low levels of analyte in the sample, the duplicate RPD calculation does not provide useful information.

Qualifier

M7 The MS and/or MSD were above the acceptance limits. See Blank Spike (LCS).

C8 Calibration Verification recovery was above the method control limit for this analyte.

C Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not impacted.

R1 The RPD between the primary and confirmatory analysis exceeded 40%. Per method 8000B, the higher value was reported.

Data usability is not expected to be affected.

The calculated RPDs are as follows:

Table 4: Relative Percent Difference Calculations

Sample ID	Compound	Equation	RPD
KLD-06-0713 & KLD-07-0713	DRO	(616 – 628)/[(616 + 628)/2] x 100 =	1.9 %
	RRO	(461 – 281)/[(461 + 281)/2] x 100 =	48.5%
	GRO	Not calculable due to non-detect results	N/A
	Benzene	Not calculable due to non-detect results	N/A
	Toluene	Not calculable due to non-detect results	N/A
	Ethyl-benzene	Not calculable due to non-detect results	N/A
	Total xylenes	Not calculable due to non-detect results	N/A
	PAH analytes	Not calculable due to non-detect results	N/A

RPD calculations over ADEC limits of 50% in soil and 30% in water are in **Bold**.

The ADEC recommended limit for RPD is 50% in soil. The calculated RPDs fell within the recommended limit for RPD calculations.

6.0 CONCLUSIONS AND RECOMMENDATIONS

This report summarizes the findings of the underground storage tank (UST) closure conducted by Alaska Resources and Environmental Services, LLC (ARES) for the subject property referenced as K&L Distributors. The property surveyed in this report is located at 945 Elizabeth Street, Fairbanks, Alaska. The property is currently owned by the Fairbanks Beer Holdings Inc.

The UST Closure / Site Characterization was conducted in July, 2013 at the request of Mr. Keith Rousseau, Owner of Inland Petroservice Inc., who was contracted to remove the UST at the site. The purpose of this project was to perform a limited site characterization and to investigate the subsurface conditions following the removal of a 1,500-gallon UST used for the storage of # 2 heating fuel oil for the property located at 945 Elizabeth Street.

Following the removal of the UST, the site was inspected and soil field screen samples collected. No staining of soils were observed in the area of excavation or stockpiled soils, however, a strong diesel odor was detected typical of a highly weathered diesel fuel. Soil field screen samples were collected from the sidewalls, base of excavation and stockpile to access site conditions and determine location of soil analytical sampling points. A total of twenty eight (28) soil field screen samples were collected during the 1,500-gallon UST closure / site characterization.

Base on soil field screen sample results, contaminated soils were encountered at the base of the UST excavation at approximately 7.5’ bgs and extended to an unknown depth. The top of the UST was approximately 3’ bgs. The highest recorded PID field screen reading recorded for samples collected from the excavation pit was Sample # 16 (7.5’ bgs) at 44.4 ppm. The highest recorded PID field screen reading recorded for samples collected from the stockpiled soil was Sample # 18 at 50.1 ppm.

The total area of excavation was approximately 208 square feet in size and the maximum depth of excavation was 7.5’ bgs. Additional excavation could not occur adjacent to the building due to concern of structurally undermining the building foundation. The vertical and horizontal (north and west) extent of soil contamination at the site is unknown. Groundwater was not encountered during excavation. The impacts to groundwater are unknown. An estimated 40-50 cubic yards (CY) of soils were stockpiled and determined to be above ADEC cleanup levels based on soil field screen samples. Disposal records indicate that 64.25 tons of contaminated soils were transported to OIT for treatment and disposal.

A total of nine soil samples (includes blind field duplicate sample for QA/QC purposes) were collected on July 19, 2013 from the excavation area to verify final site conditions and from the soil stockpile to determine status of soils for disposal purposes. Soil samples consisted of grab samples and all samples were analyzed for GRO/BTEX by method AK 101/EPA 8021B, DRO by method AK 102 and RRO by method AK 103. Two soil samples were also analyzed for PAH compounds by EPA method 8270D from the area having the highest DRO concentration.

Based on soil analytical results the site was below ADEC cleanup levels for GRO, RRO, BTEX and PAH compounds.

Based on soil analytical results, DRO contaminated soils above ADEC cleanup levels remain in place on the north and west sidewalls and at the base of the excavation (7.5' bgs). DRO contaminated soils were detected on the west sidewall (5.5' bgs) at 614 mg/kg, the north sidewall (6.0' bgs) at 376 mg/kg and DRO in the base of the excavation ranging from 301 mg/kg – 628 mg/kg. Stockpiled soils were above ADEC cleanup levels and ranged from 521 mg/kg – 1,170 mg/kg. The ADEC cleanup level for DRO in soil is 250 mg/kg.

ARES recommends the following actions:

1) Based on analytical results, soils are above ADEC cleanup levels for DRO. Contaminated soils identified in this site assessment as remaining in-place should not be excavated or disturbed without prior approval of landowner and ADEC. Soils in the vicinity of documented contamination should be properly characterized if disturbed in the future and segregated accordingly;
2) Prior to backfill and site restoration, ARES recommends adding high nitrogen based fertilizer in the excavation pit to enhance microbal growth and bioremediation at the site;
3) Due to structural limitations, remaining contaminated soils were left in place. To aid in reduction of DRO contamination at the site, ARES recommends that a passive aeration system be installed to increase oxygen level and provide a pathway for increased air flow to the subsurface. The proposed system would be constructed using perforated pipe placed at the length of the base of excavation and two vertical PVC pipes rising above ground level. A passive wind generated turbine would be installed to conduct air flow thru the system. The system would also provide a pathway for adding liquid nutrients (liquid fertilizer) to subsurface soils to enhance microbal growth and bioremediation at the site;
4) Impacts to groundwater are unknown at this time. Installation of groundwater monitoring wells would be required in accordance with 18 AAC 78.235 Release Investigation requirements to determine if groundwater has been impacted at the site; ADEC approval of Work Plan would be required.;
5) Institutional controls should be implemented at the site to include restricting installation of on-site water wells;
6) A copy of certificate of remediation should be included as an addendum to this report once received from OIT; and
7) A copy of this report should be submitted to property owner along with distribution to ADEC.

7.0 LIMITATIONS OF INVESTIGATION

This report presents the analytical results from a limited number of soil samples and should not be construed as a comprehensive study of subsurface conditions at the site. The samples were intended to evaluate the presence or absence of contaminants at the locations selected.

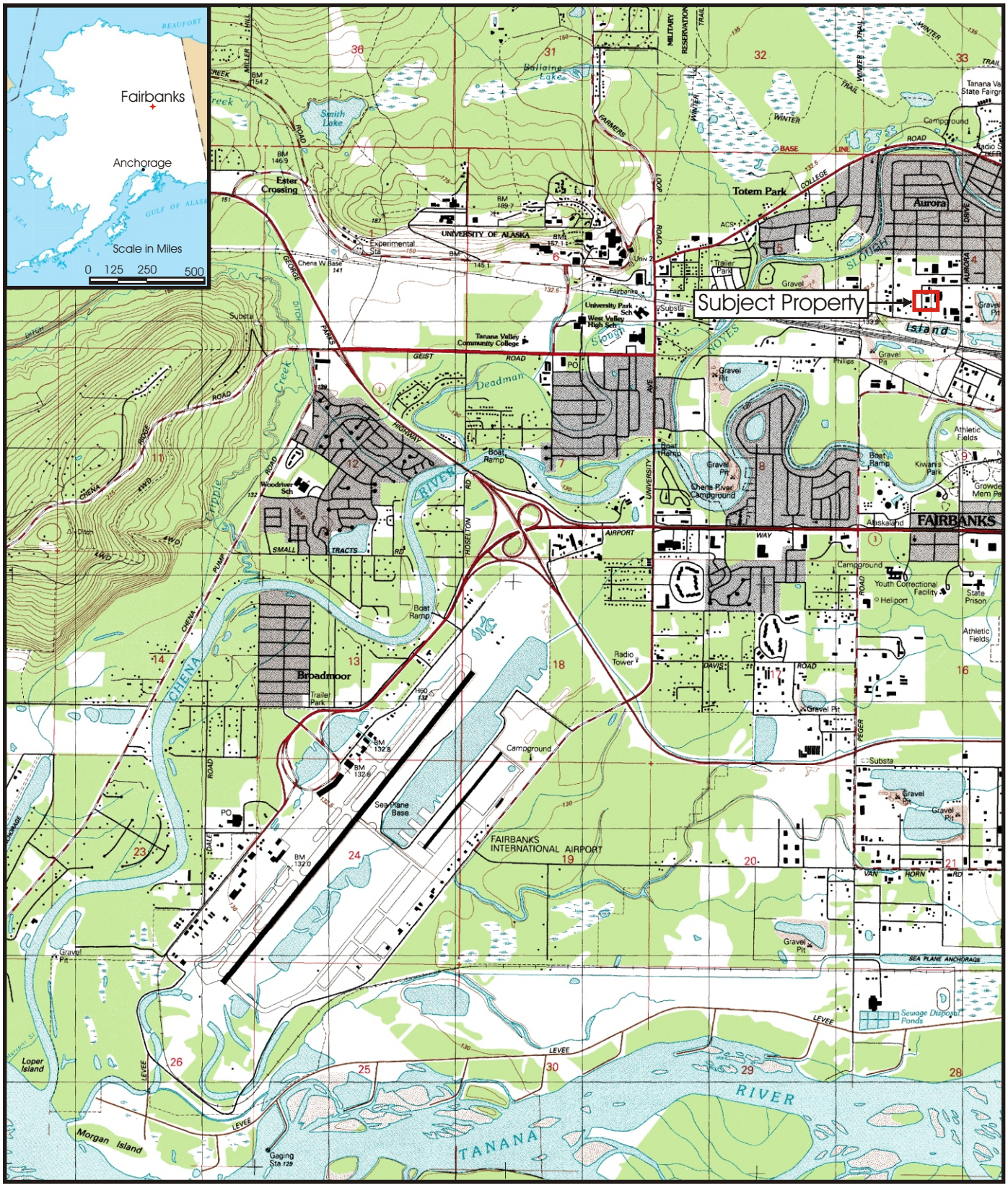
Detectable levels of petroleum hydrocarbons or other substances may be present at different locations. It was also not the intent of our sampling and testing to detect the presence of soil affected by contaminants other than those for which laboratory analysis were preformed. No conclusions can be drawn on the presence or absence of other contaminants. This is not a geotechnical study.

The data presented in this report should be considered representative of the time of our site observations and sample collection. Changes in site conditions can occur with time because of natural forces or human activity. ARES reserves the right to modify or alter conclusions and recommendations should additional data become available.

This report was prepared for the exclusive use of Inland Petroservice and its representatives. If it is made available to others, it should be for information on factual data only and not as a warranty of subsurface conditions.

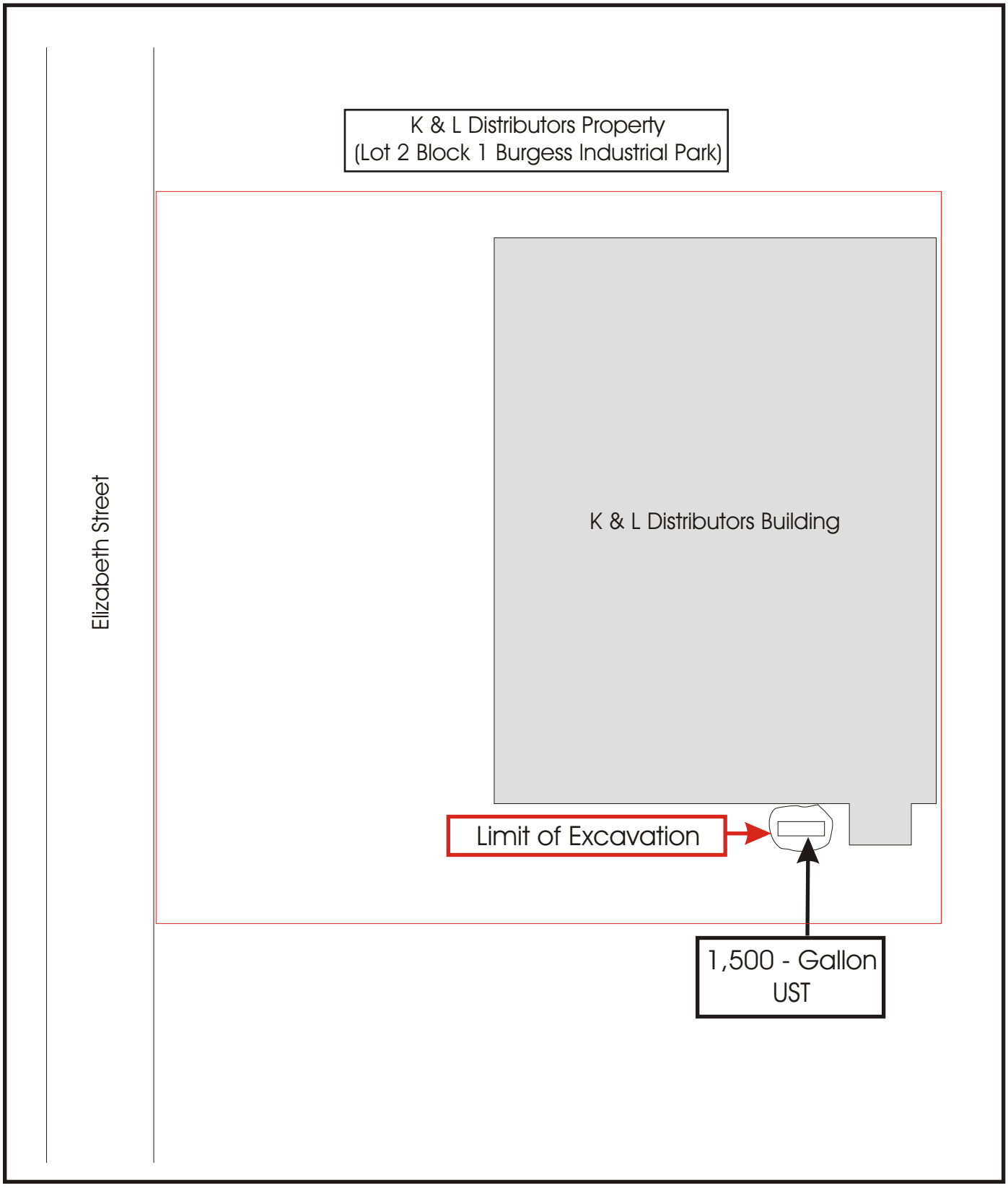
Appendix A:

Figures

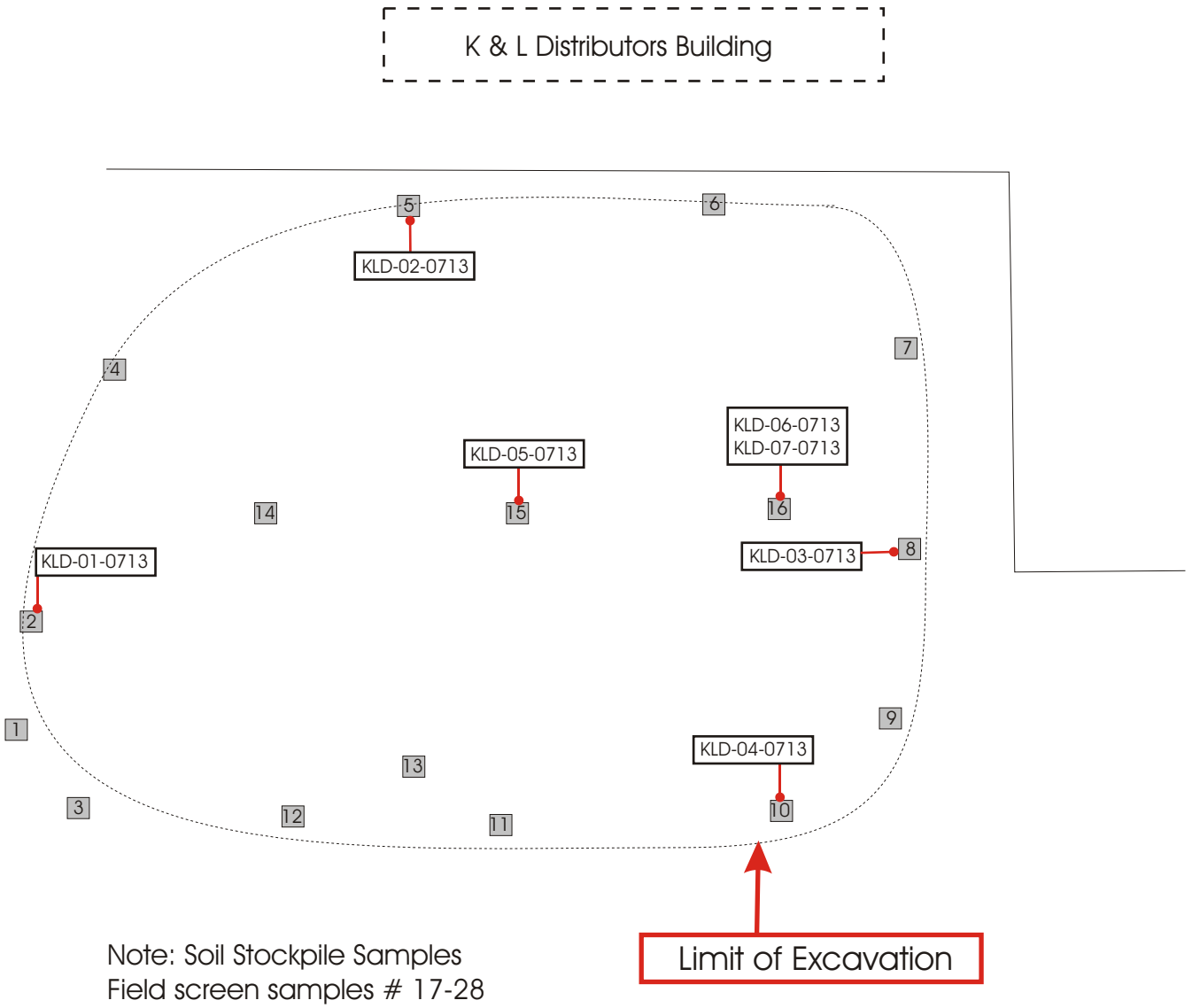


1992 Topographical Map Fairbanks, AK Quad D-2 SW	Date: 09/04/13 Drawn: JDG	Scale in Miles: 0 ¼ ½ ¾ 1	**Alaska Resources and Environmental Services, LLC** **284 Topside Fairbanks, AK 99701** **PH. (907) 374-3226** **FAX (907) 374-3219**	FIGURE 1
	Project: UST Closure / Site Characterization K & L Distributors, Fairbanks, AK	N W E S		

Aerial Photograph 2006 Fairbanks, AK	Date: 09/04/13 Drawn: JDG	Scale in Feet: 0 100 200 300 400	**Alaska Resources and Environmental Services, LLC** **284 Topside Fairbanks, AK 99701** **PH. (907) 374-3226** **FAX (907) 374-3219**	FIGURE 2
	Project: UST Closure / Site Characterization K & L Distributors, Fairbanks, AK	N W E S		



UST / Spill Location Fairbanks, AK	Date: 09/04/13 Drawn: JDG	Scale in Feet: 0 10 20 30 40 50	**Alaska Resources and Environmental Services, LLC** **284 Topside Fairbanks, AK 99701** **PH. (907) 374-3226** **FAX (907) 374-3219**	FIGURE 3
	Project: UST Closure / Site Characterization K & L Distributors, Fairbanks, AK	N W E S		



Note: Soil Stockpile Samples
Field screen samples # 17-28
KLD-08-0713
KLD-09-0713

Key

Analytical Soil Sample Location

Field Screen Soil Sample Location

K&L Distributors 945 Elizabeth Street Fairbanks, Alaska	Date: 09/4/13 Drawn: JDG	Scale in Feet: 0 2 4	**Alaska Resources and Environmental Services, LLC** **284 Topside Fairbanks, AK 99701** **PH. (907) 374-3226** **FAX (907) 374-3219**	FIGURE 4
	Project: UST Closure / Site Characterization K&L Distributors, Fairbanks, AK	N W E S		

Appendix B:

Photographs

Photograph 1:
Subject property after excavation - viewed northwest

Photograph 2:
Subject property after excavation - viewed east

Photograph 3:
Soil stockpile - viewed north

Photograph 4:
UST following removal

Photograph 5:
UST following removal

Photograph 6:
UST following removal

K&L Distributors UST Closure / Site Characterization **945 Elizabeth Street, Fairbanks, AK** Photographs 1-6	**Alaska Resources and Environmental Services, LLC** **284 Topside Fairbanks, AK 99701** **PH. (907) 374-3226** **FAX (907) 374-3219**	A R E S

Appendix C:

Analytical Results
&
ADEC Lab Quality Checklist

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Anchorage
2000 West International Airport Road Suite A10
Anchorage, AK 99502-1119
Tel: (907) 563-9200

TestAmerica Job ID: AWG0025
Client Project/Site: KLD-0713
Client Project Description: K&L Distributors UST

For:
Alaska Resources & Environmental Services
P.O. Box 83050
Fairbanks, AK 99708

Attn: Lyle Gresehover

Johanna Dreher

Authorized for release by:
8/6/2013 4:36:52 PM

Johanna L Dreher, Client Services Manager
johanna.dreher@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Qualifiers

Semivolatiles

Qualifier	Qualifier Description
Z3	The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.
M4	The sample required a dilution due to matrix interference. Because of this dilution, the matrix spike concentrations in the sample were reduced to a level where the recovery calculation does not provide useful information. See Blank Spike (LCS).
M3	Results exceeded the linear range in the MS/MSD and therefore are not available for reporting. The batch was accepted based on acceptable recovery in the Blank Spike (LCS).

Fuels

Qualifier	Qualifier Description
Q4	The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics.
Q11	Detected hydrocarbons in the diesel range do not have a distinct diesel pattern and may be due to heavily weathered diesel.
Q2	Typical pattern for diesel
RL7	Sample required dilution due to high concentrations of target analyte.

GC Volatiles

Qualifier	Qualifier Description
R4	Due to the low levels of analyte in the sample, the duplicate RPD calculation does not provide useful information.
M7	The MS and/or MSD were above the acceptance limits. See Blank Spike (LCS).
C8	Calibration Verification recovery was above the method control limit for this analyte.
C	Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not impacted.
R1	The RPD between the primary and confirmatory analysis exceeded 40%. Per method 8000B, the higher value was reported.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: Alaska Resources & Environmental Services
Project/Site: KLD-0713

TestAmerica Job ID: AWG0025

Job ID: AWG0025

Laboratory: TestAmerica Anchorage

Narrative

Receipt

Samples were received on 07/22/2013 at 13:50 PM; the samples arrived in good condition, properly preserved and, where required, on ice.

The temperature of the cooler at receipt was 2.4º C.

Subcontracted

8270 PAH SIM samples were subcontracted to TestAmerica Spokane from TestAmerica Anchorage.

Detection Summary

Client: Alaska Resources & Environmental Services
Project/Site: KLD-0713

TestAmerica Job ID: AWG0025

Client Sample ID: KLD-01-0713 — Lab Sample ID: AWG0025-01

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics	614	Q4	21.8		mg/kg dry	1.00	☼	AK102/103	Total
Residual Range Organics	180	Q4	54.4		mg/kg dry	1.00	☼	AK102/103	Total

Client Sample ID: KLD-02-0713 — Lab Sample ID: AWG0025-02

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics	376	Q11	21.4		mg/kg dry	1.00	☼	AK102/103	Total

Client Sample ID: KLD-03-0713 — Lab Sample ID: AWG0025-03

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics	105	Q2	20.6		mg/kg dry	1.00	☼	AK102/103	Total

Client Sample ID: KLD-04-0713 — Lab Sample ID: AWG0025-04

No Detections.

Client Sample ID: KLD-05-0713 — Lab Sample ID: AWG0025-05

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics	301	Q4	22.2		mg/kg dry	1.00	☼	AK102/103	Total
Residual Range Organics	204	Q4	55.5		mg/kg dry	1.00	☼	AK102/103	Total

Client Sample ID: KLD-06-0713 — Lab Sample ID: AWG0025-06

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics	616	RL7 Q4	111		mg/kg dry	5.00	☼	AK102/103	Total
Residual Range Organics	461	RL7 Q4	276		mg/kg dry	5.00	☼	AK102/103	Total

Client Sample ID: KLD-07-0713 — Lab Sample ID: AWG0025-07

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics	628	RL7 Q4	111		mg/kg dry	5.00	☼	AK102/103	Total
Residual Range Organics	281	RL7 Q4	277		mg/kg dry	5.00	☼	AK102/103	Total
Xylenes (total)	0.138	R1	0.0951		mg/kg dry	33.3	☼	AK101/EPA 8021B	Total

Client Sample ID: KLD-08-0713 — Lab Sample ID: AWG0025-08

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics	521	Q2	21.1		mg/kg dry	1.00	☼	AK102/103	Total
Xylenes (total)	0.110	R1	0.0844		mg/kg dry	33.3	☼	AK101/EPA 8021B	Total

Client Sample ID: KLD-09-0713 — Lab Sample ID: AWG0025-09

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics	1170	RL7 Q4	105		mg/kg dry	5.00	☼	AK102/103	Total
Residual Range Organics	380	RL7 Q4	262		mg/kg dry	5.00	☼	AK102/103	Total

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Alaska Resources & Environmental Services
Project/Site: KLD-0713

TestAmerica Job ID: AWG0025

Client Sample ID: Trip Blank **Lab Sample ID: AWG0025-10**

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: KLD-01-0713

Date Collected: 07/19/13 12:30
Date Received: 07/22/13 13:50

Lab Sample ID: AWG0025-01

Matrix: Soil
Percent Solids: 90.5

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	**614**	**Q4**	21.8		mg/kg dry	☼	07/23/13 13:02	07/24/13 23:07	1.00
Residual Range Organics	**180**	**Q4**	54.4		mg/kg dry	☼	07/23/13 13:02	07/24/13 23:07	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*107*		*50 - 150*	*07/23/13 13:02*	*07/24/13 23:07*	*1.00*
Triacontane	*106*		*50 - 150*	*07/23/13 13:02*	*07/24/13 23:07*	*1.00*

Method: AK101/EPA 8021B - Gasoline Range Organics (C6-C10) and BTEX per AK101

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	ND		2.58		mg/kg dry	☼	07/23/13 10:01	07/23/13 19:00	33.3
Benzene	ND		0.0155		mg/kg dry	☼	07/23/13 10:01	07/23/13 19:00	33.3
Toluene	ND		0.0310		mg/kg dry	☼	07/23/13 10:01	07/23/13 19:00	33.3
Ethylbenzene	ND	C	0.0310		mg/kg dry	☼	07/23/13 10:01	07/23/13 19:00	33.3
Xylenes (total)	ND	C	0.0930		mg/kg dry	☼	07/23/13 10:01	07/23/13 19:00	33.3

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-BFB (FID)	*145*		*50 - 150*	*07/23/13 10:01*	*07/23/13 19:00*	*33.3*
a,a,a-TFT (FID)	*102*		*50 - 150*	*07/23/13 10:01*	*07/23/13 19:00*	*33.3*
4-BFB (PID)	*142*	*C8*	*50 - 150*	*07/23/13 10:01*	*07/23/13 19:00*	*33.3*
a,a,a-TFT (PID)	*103*		*50 - 150*	*07/23/13 10:01*	*07/23/13 19:00*	*33.3*

Client Sample ID: KLD-02-0713

Date Collected: 07/19/13 12:45
Date Received: 07/22/13 13:50

Lab Sample ID: AWG0025-02

Matrix: Soil
Percent Solids: 92.5

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	**376**	**Q11**	21.4		mg/kg dry	☼	07/23/13 13:02	07/24/13 23:07	1.00
Residual Range Organics	ND		53.5		mg/kg dry	☼	07/23/13 13:02	07/24/13 23:07	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*118*		*50 - 150*	*07/23/13 13:02*	*07/24/13 23:07*	*1.00*
Triacontane	*120*		*50 - 150*	*07/23/13 13:02*	*07/24/13 23:07*	*1.00*

Method: AK101/EPA 8021B - Gasoline Range Organics (C6-C10) and BTEX per AK101

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	ND		2.57		mg/kg dry	☼	07/23/13 10:01	07/23/13 19:28	33.3
Benzene	ND		0.0155		mg/kg dry	☼	07/23/13 10:01	07/23/13 19:28	33.3
Toluene	ND		0.0309		mg/kg dry	☼	07/23/13 10:01	07/23/13 19:28	33.3
Ethylbenzene	ND	C	0.0309		mg/kg dry	☼	07/23/13 10:01	07/23/13 19:28	33.3
Xylenes (total)	ND	C	0.0928		mg/kg dry	☼	07/23/13 10:01	07/23/13 19:28	33.3

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-BFB (FID)	*135*		*50 - 150*	*07/23/13 10:01*	*07/23/13 19:28*	*33.3*
a,a,a-TFT (FID)	*89.4*		*50 - 150*	*07/23/13 10:01*	*07/23/13 19:28*	*33.3*
4-BFB (PID)	*135*	*C8*	*50 - 150*	*07/23/13 10:01*	*07/23/13 19:28*	*33.3*
a,a,a-TFT (PID)	*90.0*		*50 - 150*	*07/23/13 10:01*	*07/23/13 19:28*	*33.3*

Client: Alaska Resources & Environmental Services
Project/Site: KLD-0713

TestAmerica Job ID: AWG0025

Client Sample ID: KLD-03-0713

Lab Sample ID: AWG0025-03

Date Collected: 07/19/13 12:50
Matrix: Soil
Date Received: 07/22/13 13:50
Percent Solids: 96.6

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	**105**	**Q2**	20.6		mg/kg dry	☼	07/23/13 13:02	07/24/13 23:40	1.00
Residual Range Organics	ND		51.4		mg/kg dry	☼	07/23/13 13:02	07/24/13 23:40	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*111*		*50 - 150*	*07/23/13 13:02*	*07/24/13 23:40*	*1.00*
Triacontane	*104*		*50 - 150*	*07/23/13 13:02*	*07/24/13 23:40*	*1.00*

Method: AK101/EPA 8021B - Gasoline Range Organics (C6-C10) and BTEX per AK101

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	ND		2.58		mg/kg dry	☼	07/23/13 10:01	07/23/13 19:55	33.3
Benzene	ND		0.0155		mg/kg dry	☼	07/23/13 10:01	07/23/13 19:55	33.3
Toluene	ND		0.0309		mg/kg dry	☼	07/23/13 10:01	07/23/13 19:55	33.3
Ethylbenzene	ND	C	0.0309		mg/kg dry	☼	07/23/13 10:01	07/23/13 19:55	33.3
Xylenes (total)	ND	C	0.0928		mg/kg dry	☼	07/23/13 10:01	07/23/13 19:55	33.3

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-BFB (FID)	*118*		*50 - 150*	*07/23/13 10:01*	*07/23/13 19:55*	*33.3*
a,a,a-TFT (FID)	*95.3*		*50 - 150*	*07/23/13 10:01*	*07/23/13 19:55*	*33.3*
4-BFB (PID)	*118*	*C8*	*50 - 150*	*07/23/13 10:01*	*07/23/13 19:55*	*33.3*
a,a,a-TFT (PID)	*96.0*		*50 - 150*	*07/23/13 10:01*	*07/23/13 19:55*	*33.3*

Client Sample ID: KLD-04-0713

Lab Sample ID: AWG0025-04

Date Collected: 07/19/13 12:55
Matrix: Soil
Date Received: 07/22/13 13:50
Percent Solids: 95.4

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	ND		20.9		mg/kg dry	☼	07/23/13 13:02	07/24/13 23:40	1.00
Residual Range Organics	ND		52.3		mg/kg dry	☼	07/23/13 13:02	07/24/13 23:40	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*99.4*		*50 - 150*	*07/23/13 13:02*	*07/24/13 23:40*	*1.00*
Triacontane	*102*		*50 - 150*	*07/23/13 13:02*	*07/24/13 23:40*	*1.00*

Method: AK101/EPA 8021B - Gasoline Range Organics (C6-C10) and BTEX per AK101

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	ND		1.82		mg/kg dry	☼	07/23/13 10:01	07/23/13 20:22	33.3
Benzene	ND		0.0109		mg/kg dry	☼	07/23/13 10:01	07/23/13 20:22	33.3
Toluene	ND		0.0218		mg/kg dry	☼	07/23/13 10:01	07/23/13 20:22	33.3
Ethylbenzene	ND	C	0.0218		mg/kg dry	☼	07/23/13 10:01	07/23/13 20:22	33.3
Xylenes (total)	ND	C	0.0655		mg/kg dry	☼	07/23/13 10:01	07/23/13 20:22	33.3

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-BFB (FID)	*124*		*50 - 150*	*07/23/13 10:01*	*07/23/13 20:22*	*33.3*
a,a,a-TFT (FID)	*92.4*		*50 - 150*	*07/23/13 10:01*	*07/23/13 20:22*	*33.3*
4-BFB (PID)	*122*	*C8*	*50 - 150*	*07/23/13 10:01*	*07/23/13 20:22*	*33.3*
a,a,a-TFT (PID)	*93.1*		*50 - 150*	*07/23/13 10:01*	*07/23/13 20:22*	*33.3*

Client Sample ID: KLD-05-0713

Date Collected: 07/19/13 13:00
Date Received: 07/22/13 13:50

Lab Sample ID: AWG0025-05

Matrix: Soil
Percent Solids: 89.2

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	301	Q4	22.2		mg/kg dry	☼	07/23/13 13:02	07/25/13 14:35	1.00
Residual Range Organics	204	Q4	55.5		mg/kg dry	☼	07/23/13 13:02	07/25/13 14:35	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*120*		*50 - 150*	*07/23/13 13:02*	*07/25/13 14:35*	*1.00*
Triacontane	*118*		*50 - 150*	*07/23/13 13:02*	*07/25/13 14:35*	*1.00*

Method: AK101/EPA 8021B - Gasoline Range Organics (C6-C10) and BTEX per AK101

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	ND		2.18		mg/kg dry	☼	07/23/13 10:01	07/23/13 20:49	33.3
Benzene	ND		0.0131		mg/kg dry	☼	07/23/13 10:01	07/23/13 20:49	33.3
Toluene	ND		0.0262		mg/kg dry	☼	07/23/13 10:01	07/23/13 20:49	33.3
Ethylbenzene	ND	C	0.0262		mg/kg dry	☼	07/23/13 10:01	07/23/13 20:49	33.3
Xylenes (total)	ND	C	0.0785		mg/kg dry	☼	07/23/13 10:01	07/23/13 20:49	33.3

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-BFB (FID)	*147*		*50 - 150*	*07/23/13 10:01*	*07/23/13 20:49*	*33.3*
a,a,a-TFT (FID)	*92.1*		*50 - 150*	*07/23/13 10:01*	*07/23/13 20:49*	*33.3*
4-BFB (PID)	*149*	*C8*	*50 - 150*	*07/23/13 10:01*	*07/23/13 20:49*	*33.3*
a,a,a-TFT (PID)	*93.1*		*50 - 150*	*07/23/13 10:01*	*07/23/13 20:49*	*33.3*

Client Sample ID: KLD-06-0713

Date Collected: 07/19/13 13:05
Date Received: 07/22/13 13:50

Lab Sample ID: AWG0025-06

Matrix: Soil
Percent Solids: 90.3

Method: EPA 8270D - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.143		mg/kg dry	☼	07/25/13 08:50	07/31/13 19:27	5.00
2-Methylnaphthalene	ND		0.143		mg/kg dry	☼	07/25/13 08:50	07/31/13 19:27	5.00
1-Methylnaphthalene	ND		0.143		mg/kg dry	☼	07/25/13 08:50	07/31/13 19:27	5.00
Acenaphthylene	ND		0.143		mg/kg dry	☼	07/25/13 08:50	07/31/13 19:27	5.00
Acenaphthene	ND		0.143		mg/kg dry	☼	07/25/13 08:50	07/31/13 19:27	5.00
Fluorene	ND		0.143		mg/kg dry	☼	07/25/13 08:50	07/31/13 19:27	5.00
Phenanthrene	ND		0.143		mg/kg dry	☼	07/25/13 08:50	07/31/13 19:27	5.00
Anthracene	ND		0.143		mg/kg dry	☼	07/25/13 08:50	07/31/13 19:27	5.00
Fluoranthene	ND		0.143		mg/kg dry	☼	07/25/13 08:50	07/31/13 19:27	5.00
Pyrene	ND		0.143		mg/kg dry	☼	07/25/13 08:50	07/31/13 19:27	5.00
Benzo (a) anthracene	ND		0.143		mg/kg dry	☼	07/25/13 08:50	07/31/13 19:27	5.00
Chrysene	ND		0.143		mg/kg dry	☼	07/25/13 08:50	07/31/13 19:27	5.00
Benzo (b) fluoranthene	ND		0.143		mg/kg dry	☼	07/25/13 08:50	07/31/13 19:27	5.00
Benzo (k) fluoranthene	ND		0.143		mg/kg dry	☼	07/25/13 08:50	07/31/13 19:27	5.00
Benzo (a) pyrene	ND		0.143		mg/kg dry	☼	07/25/13 08:50	07/31/13 19:27	5.00
Indeno (1,2,3-cd) pyrene	ND		0.143		mg/kg dry	☼	07/25/13 08:50	07/31/13 19:27	5.00
Dibenzo (a,h) anthracene	ND		0.0858		mg/kg dry	☼	07/25/13 08:50	07/31/13 19:27	5.00
Benzo (ghi) perylene	ND		0.143		mg/kg dry	☼	07/25/13 08:50	07/31/13 19:27	5.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*55.0*		*53.2 - 137*	*07/25/13 08:50*	*07/31/13 19:27*	*5.00*
2-FBP	*80.0*		*63.6 - 123*	*07/25/13 08:50*	*07/31/13 19:27*	*5.00*
p-Terphenyl-d14	*90.0*		*65.6 - 167*	*07/25/13 08:50*	*07/31/13 19:27*	*5.00*

Client Sample ID: KLD-06-0713
Lab Sample ID: AWG0025-06

Date Collected: 07/19/13 13:05
Matrix: Soil
Date Received: 07/22/13 13:50
Percent Solids: 90

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	616	RL7 Q4	111		mg/kg dry	☼	07/23/13 13:02	07/25/13 00:13	5.00
Residual Range Organics	461	RL7 Q4	276		mg/kg dry	☼	07/23/13 13:02	07/25/13 00:13	5.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*122*		*50 - 150*	*07/23/13 13:02*	*07/25/13 00:13*	*5.00*
Triacontane	*139*		*50 - 150*	*07/23/13 13:02*	*07/25/13 00:13*	*5.00*

Method: AK101/EPA 8021B - Gasoline Range Organics (C6-C10) and BTEX per AK101

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	ND		2.69		mg/kg dry	☼	07/23/13 10:01	07/23/13 23:12	33.3
Benzene	ND		0.0162		mg/kg dry	☼	07/23/13 10:01	07/23/13 23:12	33.3
Toluene	ND		0.0323		mg/kg dry	☼	07/23/13 10:01	07/23/13 23:12	33.3
Ethylbenzene	ND	C	0.0323		mg/kg dry	☼	07/23/13 10:01	07/23/13 23:12	33.3
Xylenes (total)	ND	C	0.0969		mg/kg dry	☼	07/23/13 10:01	07/23/13 23:12	33.3

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-BFB (FID)	*126*		*50 - 150*	*07/23/13 10:01*	*07/23/13 23:12*	*33.3*
a,a,a-TFT (FID)	*92.7*		*50 - 150*	*07/23/13 10:01*	*07/23/13 23:12*	*33.3*
4-BFB (PID)	*133*	*C8*	*50 - 150*	*07/23/13 10:01*	*07/23/13 23:12*	*33.3*
a,a,a-TFT (PID)	*93.2*		*50 - 150*	*07/23/13 10:01*	*07/23/13 23:12*	*33.3*

Client Sample ID: KLD-07-0713
Lab Sample ID: AWG0025-07

Date Collected: 07/19/13 13:10
Matrix: Soil
Date Received: 07/22/13 13:50
Percent Solids: 90.2

Method: EPA 8270D - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.109		mg/kg dry	☼	07/25/13 08:50	08/01/13 21:41	4.00
2-Methylnaphthalene	ND		0.109		mg/kg dry	☼	07/25/13 08:50	08/01/13 21:41	4.00
1-Methylnaphthalene	ND		0.109		mg/kg dry	☼	07/25/13 08:50	08/01/13 21:41	4.00
Acenaphthylene	ND		0.109		mg/kg dry	☼	07/25/13 08:50	08/01/13 21:41	4.00
Acenaphthene	ND		0.109		mg/kg dry	☼	07/25/13 08:50	08/01/13 21:41	4.00
Fluorene	ND		0.109		mg/kg dry	☼	07/25/13 08:50	08/01/13 21:41	4.00
Phenanthrene	ND		0.109		mg/kg dry	☼	07/25/13 08:50	08/01/13 21:41	4.00
Anthracene	ND		0.109		mg/kg dry	☼	07/25/13 08:50	08/01/13 21:41	4.00
Fluoranthene	ND		0.109		mg/kg dry	☼	07/25/13 08:50	08/01/13 21:41	4.00
Pyrene	ND		0.109		mg/kg dry	☼	07/25/13 08:50	08/01/13 21:41	4.00
Benzo (a) anthracene	ND		0.109		mg/kg dry	☼	07/25/13 08:50	08/01/13 21:41	4.00
Chrysene	ND		0.109		mg/kg dry	☼	07/25/13 08:50	08/01/13 21:41	4.00
Benzo (b) fluoranthene	ND		0.109		mg/kg dry	☼	07/25/13 08:50	08/01/13 21:41	4.00
Benzo (k) fluoranthene	ND		0.109		mg/kg dry	☼	07/25/13 08:50	08/01/13 21:41	4.00
Benzo (a) pyrene	ND		0.109		mg/kg dry	☼	07/25/13 08:50	08/01/13 21:41	4.00
Indeno (1,2,3-cd) pyrene	ND		0.109		mg/kg dry	☼	07/25/13 08:50	08/01/13 21:41	4.00
Dibenzo (a,h) anthracene	ND		0.0657		mg/kg dry	☼	07/25/13 08:50	08/01/13 21:41	4.00
Benzo (ghi) perylene	ND		0.109		mg/kg dry	☼	07/25/13 08:50	08/01/13 21:41	4.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*56.0*		*53.2 - 137*	*07/25/13 08:50*	*08/01/13 21:41*	*4.00*
2-FBP	*74.0*		*63.6 - 123*	*07/25/13 08:50*	*08/01/13 21:41*	*4.00*
p-Terphenyl-d14	*84.0*		*65.6 - 167*	*07/25/13 08:50*	*08/01/13 21:41*	*4.00*

Client Sample ID: KLD-07-0713

Lab Sample ID: AWG0025-07

Date Collected: 07/19/13 13:10
Matrix: Soil
Date Received: 07/22/13 13:50
Percent Solids: 90.1

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	**628**	**RL7 Q4**	111		mg/kg dry	☼	07/23/13 13:02	07/25/13 14:02	5.00
Residual Range Organics	**281**	**RL7 Q4**	277		mg/kg dry	☼	07/23/13 13:02	07/25/13 14:02	5.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*106*		*50 - 150*	*07/23/13 13:02*	*07/25/13 14:02*	*5.00*
Triacontane	*108*		*50 - 150*	*07/23/13 13:02*	*07/25/13 14:02*	*5.00*

Method: AK101/EPA 8021B - Gasoline Range Organics (C6-C10) and BTEX per AK101

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	ND		2.64		mg/kg dry	☼	07/24/13 09:31	07/25/13 01:41	33.3
Benzene	ND		0.0158		mg/kg dry	☼	07/24/13 09:31	07/25/13 01:41	33.3
Toluene	ND		0.0317		mg/kg dry	☼	07/24/13 09:31	07/25/13 01:41	33.3
Ethylbenzene	ND		0.0317		mg/kg dry	☼	07/24/13 09:31	07/25/13 01:41	33.3
Xylenes (total)	**0.138**	**R1**	0.0951		mg/kg dry	☼	07/24/13 09:31	07/25/13 01:41	33.3

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-BFB (FID)	*144*		*50 - 150*	*07/24/13 09:31*	*07/25/13 01:41*	*33.3*
a,a,a-TFT (FID)	*104*		*50 - 150*	*07/24/13 09:31*	*07/25/13 01:41*	*33.3*
4-BFB (PID)	*144*		*50 - 150*	*07/24/13 09:31*	*07/25/13 01:41*	*33.3*
a,a,a-TFT (PID)	*104*		*50 - 150*	*07/24/13 09:31*	*07/25/13 01:41*	*33.3*

Client Sample ID: KLD-08-0713

Lab Sample ID: AWG0025-08

Date Collected: 07/19/13 14:20
Matrix: Soil
Date Received: 07/22/13 13:50
Percent Solids: 93.4

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	**521**	**Q2**	21.1		mg/kg dry	☼	07/23/13 13:02	07/25/13 14:02	1.00
Residual Range Organics	ND		52.7		mg/kg dry	☼	07/23/13 13:02	07/25/13 14:02	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*106*		*50 - 150*	*07/23/13 13:02*	*07/25/13 14:02*	*1.00*
Triacontane	*108*		*50 - 150*	*07/23/13 13:02*	*07/25/13 14:02*	*1.00*

Method: AK101/EPA 8021B - Gasoline Range Organics (C6-C10) and BTEX per AK101

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	ND		2.34		mg/kg dry	☼	07/24/13 09:31	07/25/13 02:08	33.3
Benzene	ND		0.0141		mg/kg dry	☼	07/24/13 09:31	07/25/13 02:08	33.3
Toluene	ND		0.0281		mg/kg dry	☼	07/24/13 09:31	07/25/13 02:08	33.3
Ethylbenzene	ND		0.0281		mg/kg dry	☼	07/24/13 09:31	07/25/13 02:08	33.3
Xylenes (total)	**0.110**	**R1**	0.0844		mg/kg dry	☼	07/24/13 09:31	07/25/13 02:08	33.3

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-BFB (FID)	*135*		*50 - 150*	*07/24/13 09:31*	*07/25/13 02:08*	*33.3*
a,a,a-TFT (FID)	*104*		*50 - 150*	*07/24/13 09:31*	*07/25/13 02:08*	*33.3*
4-BFB (PID)	*134*		*50 - 150*	*07/24/13 09:31*	*07/25/13 02:08*	*33.3*
a,a,a-TFT (PID)	*104*		*50 - 150*	*07/24/13 09:31*	*07/25/13 02:08*	*33.3*

Client: Alaska Resources & Environmental Services
Project/Site: KLD-0713

TestAmerica Job ID: AWG0025

Client Sample ID: KLD-09-0713

Lab Sample ID: AWG0025-09

Date Collected: 07/19/13 14:25
Matrix: Soil
Date Received: 07/22/13 13:50
Percent Solids: 94

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	1170	RL7 Q4	105		mg/kg dry	☼	07/23/13 13:02	07/25/13 14:35	5.00
Residual Range Organics	380	RL7 Q4	262		mg/kg dry	☼	07/23/13 13:02	07/25/13 14:35	5.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*106*		*50 - 150*	*07/23/13 13:02*	*07/25/13 14:35*	*5.00*
Triacontane	*107*		*50 - 150*	*07/23/13 13:02*	*07/25/13 14:35*	*5.00*

Method: AK101/EPA 8021B - Gasoline Range Organics (C6-C10) and BTEX per AK101

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	ND		2.38		mg/kg dry	☼	07/24/13 09:31	07/25/13 02:35	33.3
Benzene	ND		0.0143		mg/kg dry	☼	07/24/13 09:31	07/25/13 02:35	33.3
Toluene	ND		0.0286		mg/kg dry	☼	07/24/13 09:31	07/25/13 02:35	33.3
Ethylbenzene	ND		0.0286		mg/kg dry	☼	07/24/13 09:31	07/25/13 02:35	33.3
Xylenes (total)	ND		0.0859		mg/kg dry	☼	07/24/13 09:31	07/25/13 02:35	33.3

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-BFB (FID)	*133*		*50 - 150*	*07/24/13 09:31*	*07/25/13 02:35*	*33.3*
a,a,a-TFT (FID)	*102*		*50 - 150*	*07/24/13 09:31*	*07/25/13 02:35*	*33.3*
4-BFB (PID)	*141*		*50 - 150*	*07/24/13 09:31*	*07/25/13 02:35*	*33.3*
a,a,a-TFT (PID)	*102*		*50 - 150*	*07/24/13 09:31*	*07/25/13 02:35*	*33.3*

Client Sample ID: Trip Blank

Lab Sample ID: AWG0025-10

Date Collected: 07/19/13 12:00
Matrix: Soil
Date Received: 07/22/13 13:50
Percent Solids: 100

Method: AK101/EPA 8021B - Gasoline Range Organics (C6-C10) and BTEX per AK101

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	ND		3.33		mg/kg dry	☼	07/24/13 09:31	07/24/13 18:38	33.3
Benzene	ND		0.0200		mg/kg dry	☼	07/24/13 09:31	07/24/13 18:38	33.3
Toluene	ND		0.0400		mg/kg dry	☼	07/24/13 09:31	07/24/13 18:38	33.3
Ethylbenzene	ND		0.0400		mg/kg dry	☼	07/24/13 09:31	07/24/13 18:38	33.3
Xylenes (total)	ND		0.120		mg/kg dry	☼	07/24/13 09:31	07/24/13 18:38	33.3

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-BFB (FID)	*113*		*50 - 150*	*07/24/13 09:31*	*07/24/13 18:38*	*33.3*
a,a,a-TFT (FID)	*83.1*		*50 - 150*	*07/24/13 09:31*	*07/24/13 18:38*	*33.3*
4-BFB (PID)	*112*		*50 - 150*	*07/24/13 09:31*	*07/24/13 18:38*	*33.3*
a,a,a-TFT (PID)	*82.7*		*50 - 150*	*07/24/13 09:31*	*07/24/13 18:38*	*33.3*

Surrogate Summary

Client: Alaska Resources & Environmental Services
Project/Site: KLD-0713

TestAmerica Job ID: AWG0025

Method: EPA 8270D - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Matrix: Soil **Prep Type: Total**

		Percent Surrogate Recovery (Acceptance Limits)								
		NBZ	2-FBP	Terphenyl-d						
Lab Sample ID	Client Sample ID	(53.2-137)	(63.6-123)	(65.6-167)						
13G0142-BLK1	Method Blank	101	104	127						
13G0142-BS1	Lab Control Sample	84.4	97.2	119						
13G0142-BSD1	Lab Control Sample Dup	92.2	95.2	119						
13G0142-MS1	Matrix Spike	70.0	130 Z3	85.0						
13G0142-MSD1	Matrix Spike Duplicate	50.0 Z3	120	75.0						
AWG0025-06	KLD-06-0713	55.0	80.0	90.0						
AWG0025-07	KLD-07-0713	56.0	74.0	84.0						

Surrogate Legend

NBZ = Nitrobenzene-d5

2-FBP = 2-FBP

p-Terphenyl-d14 = p-Terphenyl-d14

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

Matrix: Soil **Prep Type: Total**

		Percent Surrogate Recovery (Acceptance Limits)								
		1COD	TC							
Lab Sample ID	Client Sample ID	(50-150)	(50-150)							
13G0046-BLK1	Method Blank	105	104							
13G0046-DUP1	Duplicate	107	92.6							
13G0046-MS1	Matrix Spike	97.5	92.6							
13G0046-MSD1	Matrix Spike Duplicate	94.2	95.4							
AWG0025-01	KLD-01-0713	107	106							
AWG0025-02	KLD-02-0713	118	120							
AWG0025-03	KLD-03-0713	111	104							
AWG0025-04	KLD-04-0713	99.4	102							
AWG0025-05	KLD-05-0713	120	118							
AWG0025-06	KLD-06-0713	122	139							
AWG0025-07	KLD-07-0713	106	108							
AWG0025-08	KLD-08-0713	106	108							
AWG0025-09	KLD-09-0713	106	107							

Surrogate Legend

1COD = 1-Chlorooctadecane

TC = Triacontane

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

Matrix: Soil **Prep Type: Total**

		Percent Surrogate Recovery (Acceptance Limits)								
		1COD	TC							
Lab Sample ID	Client Sample ID	(60-120)	(60-120)							
13G0046-BS1	Lab Control Sample	115	103							
13G0046-BSD1	Lab Control Sample Dup	116	100							

Surrogate Legend

1COD = 1-Chlorooctadecane

TC = Triacontane

Method: AK101/EPA 8021B - Gasoline Range Organics (C6-C10) and BTEX per AK101

Matrix: Soil **Prep Type: Total**

		Percent Surrogate Recovery (Acceptance Limits)							
		4-BFB (FID)	a,a-TFT (FI	4-BFB (PID)	a,a-TFT (PI	4-BFB (PID)	4-BFB (PID)	a,a-TFT (PI	a,a-TFT (PI
Lab Sample ID	Client Sample ID	(50-150)	(50-150)	(50-150)	(50-150)	(47.8-145)	(50-150)	(50-150)	(64.8-135)
13G0041-BLK1	Method Blank	102	95.6	102	95.9		102	95.9	
13G0041-DUP1	Duplicate	114	105	114	106		114	106	
13G0041-MS1	Matrix Spike			109	99.0		109	99.0	
13G0041-MSD1	Matrix Spike Duplicate			136 C8	116		136 C8	116	
13G0051-BLK1	Method Blank	94.5	105	94.8	105		94.8	105	
13G0051-DUP1	Duplicate	107	103	107	104		107	104	
13G0051-MS1	Matrix Spike			107	99.7		107	99.7	
13G0051-MSD1	Matrix Spike Duplicate			106	96.4		106	96.4	
AWG0025-01	KLD-01-0713	145	102	142 C8	103		142 C8	103	
AWG0025-02	KLD-02-0713	135	89.4	135 C8	90.0		135 C8	90.0	
AWG0025-03	KLD-03-0713	118	95.3	118 C8	96.0		118 C8	96.0	
AWG0025-04	KLD-04-0713	124	92.4	122 C8	93.1		122 C8	93.1	
AWG0025-05	KLD-05-0713	147	92.1	149 C8	93.1		149 C8	93.1	
AWG0025-06	KLD-06-0713	126	92.7	133 C8	93.2		133 C8	93.2	
AWG0025-07	KLD-07-0713	144	104	144	104		144	104	
AWG0025-08	KLD-08-0713	135	104	134	104		134	104	
AWG0025-09	KLD-09-0713	133	102	141	102		141	102	
AWG0025-10	Trip Blank	113	83.1	112	82.7		112	82.7	

Surrogate Legend

4-BFB (FID) = 4-BFB (FID)

a,a,a-TFT (FID) = a,a,a-TFT (FID)

4-BFB (PID) = 4-BFB (PID)

a,a,a-TFT (PID) = a,a,a-TFT (PID)

Method: AK101/EPA 8021B - Gasoline Range Organics (C6-C10) and BTEX per AK101

Matrix: Soil **Prep Type: Total**

		Percent Surrogate Recovery (Acceptance Limits)							
		4-BFB (PID)	a,a-TFT (PI						
Lab Sample ID	Client Sample ID	(47.8-145)	(64.8-135)						
13G0041-BS1	Lab Control Sample	92.3	88.4						
13G0041-BSD1	Lab Control Sample Dup	106	92.1						
13G0051-BS1	Lab Control Sample	123	101						
13G0051-BSD1	Lab Control Sample Dup	125	103						

Surrogate Legend

4-BFB (PID) = 4-BFB (PID)

a,a,a-TFT (PID) = a,a,a-TFT (PID)

Method: AK101/EPA 8021B - Gasoline Range Organics (C6-C10) and BTEX per AK101

Matrix: Soil **Prep Type: Total**

		Percent Surrogate Recovery (Acceptance Limits)							
		4-BFB (FID)	a,a-TFT (FI						
Lab Sample ID	Client Sample ID	(60-120)	(60-120)						
13G0041-BS2	Lab Control Sample	90.3	114						
13G0041-BSD2	Lab Control Sample Dup	85.7	111						

Surrogate Summary

Client: Alaska Resources & Environmental Services
Project/Site: KLD-0713

TestAmerica Job ID: AWG0025

Method: AK101/EPA 8021B - Gasoline Range Organics (C6-C10) and BTEX per AK101 (Continued)

Matrix: Soil **Prep Type: Total**

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	4-BFB (FID) (60-120)	a,a-TFT (FI (60-120)								
13G0051-BS2	Lab Control Sample	113	119								
13G0051-BSD2	Lab Control Sample Dup	120	118								

Surrogate Legend

4-BFB (FID) = 4-BFB (FID)

a,a,a-TFT (FID) = a,a,a-TFT (FID)

Method: EPA 8270D - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring

Lab Sample ID: 13G0142-BLK1
Matrix: Soil
Analysis Batch: 13G0142

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 13G0142_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.0100		mg/kg wet		07/25/13 08:50	07/26/13 15:08	1.00
2-Methylnaphthalene	ND		0.0100		mg/kg wet		07/25/13 08:50	07/26/13 15:08	1.00
1-Methylnaphthalene	ND		0.0100		mg/kg wet		07/25/13 08:50	07/26/13 15:08	1.00
Acenaphthylene	ND		0.0100		mg/kg wet		07/25/13 08:50	07/26/13 15:08	1.00
Acenaphthene	ND		0.0100		mg/kg wet		07/25/13 08:50	07/26/13 15:08	1.00
Fluorene	ND		0.0100		mg/kg wet		07/25/13 08:50	07/26/13 15:08	1.00
Phenanthrene	ND		0.0100		mg/kg wet		07/25/13 08:50	07/26/13 15:08	1.00
Anthracene	ND		0.0100		mg/kg wet		07/25/13 08:50	07/26/13 15:08	1.00
Fluoranthene	ND		0.0100		mg/kg wet		07/25/13 08:50	07/26/13 15:08	1.00
Pyrene	ND		0.0100		mg/kg wet		07/25/13 08:50	07/26/13 15:08	1.00
Benzo (a) anthracene	ND		0.0100		mg/kg wet		07/25/13 08:50	07/26/13 15:08	1.00
Chrysene	ND		0.0100		mg/kg wet		07/25/13 08:50	07/26/13 15:08	1.00
Benzo (b) fluoranthene	ND		0.0100		mg/kg wet		07/25/13 08:50	07/26/13 15:08	1.00
Benzo (k) fluoranthene	ND		0.0100		mg/kg wet		07/25/13 08:50	07/26/13 15:08	1.00
Benzo (a) pyrene	ND		0.0100		mg/kg wet		07/25/13 08:50	07/26/13 15:08	1.00
Indeno (1,2,3-cd) pyrene	ND		0.0100		mg/kg wet		07/25/13 08:50	07/26/13 15:08	1.00
Dibenzo (a,h) anthracene	ND		0.00600		mg/kg wet		07/25/13 08:50	07/26/13 15:08	1.00
Benzo (ghi) perylene	ND		0.0100		mg/kg wet		07/25/13 08:50	07/26/13 15:08	1.00

Surrogate	*Blank %Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*101*		*53.2 - 137*	*07/25/13 08:50*	*07/26/13 15:08*	*1.00*
2-FBP	*104*		*63.6 - 123*	*07/25/13 08:50*	*07/26/13 15:08*	*1.00*
p-Terphenyl-d14	*127*		*65.6 - 167*	*07/25/13 08:50*	*07/26/13 15:08*	*1.00*

Lab Sample ID: 13G0142-BS1
Matrix: Soil
Analysis Batch: 13G0142

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 13G0142_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Naphthalene			0.133	0.139		mg/kg wet		104	62.7 - 120		
Fluorene			0.133	0.159		mg/kg wet		119	67.9 - 124		
Chrysene			0.133	0.153		mg/kg wet		115	68.2 - 132		
Indeno (1,2,3-cd) pyrene			0.133	0.159		mg/kg wet		120	52.6 - 149		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5	*84.4*		*53.2 - 137*
2-FBP	*97.2*		*63.6 - 123*
p-Terphenyl-d14	*119*		*65.6 - 167*

Lab Sample ID: 13G0142-BSD1
Matrix: Soil
Analysis Batch: 13G0142

Client Sample ID: Lab Control Sample Dup
Prep Type: Total
Prep Batch: 13G0142_P

Analyte			Spike Added	LCS Dup Result	LCS Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene			0.133	0.138		mg/kg wet		104	62.7 - 120	0.962	35
Fluorene			0.133	0.147		mg/kg wet		110	67.9 - 124	7.86	35
Chrysene			0.133	0.155		mg/kg wet		116	68.2 - 132	1.30	35

Method: EPA 8270D - Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring (Continued)

Lab Sample ID: 13G0142-BSD1 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Soil — **Prep Type: Total**
Analysis Batch: 13G0142 — **Prep Batch: 13G0142_P**

Analyte			Spike Added	LCS Dup Result	LCS Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Indeno (1,2,3-cd) pyrene			0.133	0.157		mg/kg wet		118	52.6 - 149	1.69	35

Surrogate	*LCS Dup %Recovery*	*LCS Dup Qualifier*	*Limits*
Nitrobenzene-d5	*92.2*		*53.2 - 137*
2-FBP	*95.2*		*63.6 - 123*
p-Terphenyl-d14	*119*		*65.6 - 167*

Lab Sample ID: 13G0142-MS1 — **Client Sample ID: Matrix Spike**
Matrix: Soil — **Prep Type: Total**
Analysis Batch: 13G0142 — **Prep Batch: 13G0142_P**

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	ND		0.144	0.198	M4	mg/kg dry	☼	138	30 - 120
Fluorene	ND		0.144	ND	M4	mg/kg dry	☼		30 - 140
Chrysene	0.115		0.144	0.378	M4	mg/kg dry	☼	183	30 - 133
Indeno (1,2,3-cd) pyrene	0.0501		0.144	0.324	M4	mg/kg dry	☼	190	30 - 140

Surrogate	*Matrix Spike %Recovery*	*Matrix Spike Qualifier*	*Limits*
Nitrobenzene-d5	*70.0*		*53.2 - 137*
2-FBP	*130*	*Z3*	*63.6 - 123*
p-Terphenyl-d14	*85.0*		*65.6 - 167*

Lab Sample ID: 13G0142-MSD1 — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Soil — **Prep Type: Total**
Analysis Batch: 13G0142 — **Prep Batch: 13G0142_P**

Analyte	Sample Result	Sample Qualifier	Spike Added	ıtrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Naphthalene	ND		0.142	0.177	M3	mg/kg dry	☼	125	30 - 120	11.2	35
Fluorene	ND		0.142	0.195	M3	mg/kg dry	☼	138	30 - 140		35
Chrysene	0.115		0.142	0.407	M3	mg/kg dry	☼	207	30 - 133	7.44	35
Indeno (1,2,3-cd) pyrene	0.0501		0.142	0.283	M3	mg/kg dry	☼	165	30 - 140	13.4	35

Surrogate	*Matrix Spike Dup %Recovery*	*Matrix Spike Dup Qualifier*	*Limits*
Nitrobenzene-d5	*50.0*	*Z3*	*53.2 - 137*
2-FBP	*120*		*63.6 - 123*
p-Terphenyl-d14	*75.0*		*65.6 - 167*

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO

Lab Sample ID: 13G0046-BLK1 — **Client Sample ID: Method Blank**
Matrix: Soil — **Prep Type: Total**
Analysis Batch: W000381 — **Prep Batch: 13G0046_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	ND		20.0		mg/kg wet		07/23/13 13:02	07/25/13 11:19	1.00

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO (Continued)

Lab Sample ID: 13G0046-BLK1
Matrix: Soil
Analysis Batch: W000381

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 13G0046_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Residual Range Organics	ND		50.0		mg/kg wet		07/23/13 13:02	07/25/13 11:19	1.00

Surrogate	*Blank %Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*105*		*50 - 150*	*07/23/13 13:02*	*07/25/13 11:19*	*1.00*
Triacontane	*104*		*50 - 150*	*07/23/13 13:02*	*07/25/13 11:19*	*1.00*

Lab Sample ID: 13G0046-BS1
Matrix: Soil
Analysis Batch: W000381

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 13G0046_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics			126	112		mg/kg wet		88.7	75 - 125		
Residual Range Organics			128	120		mg/kg wet		94.0	60 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctadecane	*115*		*60 - 120*
Triacontane	*103*		*60 - 120*

Lab Sample ID: 13G0046-BSD1
Matrix: Soil
Analysis Batch: W000381

Client Sample ID: Lab Control Sample Dup
Prep Type: Total
Prep Batch: 13G0046_P

Analyte			Spike Added	LCS Dup Result	LCS Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics			126	117		mg/kg wet		92.9	75 - 125	4.61	20
Residual Range Organics			128	119		mg/kg wet		93.4	60 - 120	0.577	20

Surrogate	*LCS Dup %Recovery*	*LCS Dup Qualifier*	*Limits*
1-Chlorooctadecane	*116*		*60 - 120*
Triacontane	*100*		*60 - 120*

Lab Sample ID: 13G0046-MS1
Matrix: Soil
Analysis Batch: W000380

Client Sample ID: Matrix Spike
Prep Type: Total
Prep Batch: 13G0046_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics	ND		137	140		mg/kg dry	☼	102	75 - 125		
Residual Range Organics	5.45		138	118		mg/kg dry	☼	81.3	60 - 120		

Surrogate	*Matrix Spike %Recovery*	*Matrix Spike Qualifier*	*Limits*
1-Chlorooctadecane	*97.5*		*50 - 150*
Triacontane	*92.6*		*50 - 150*

Method: AK102/103 - Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO (Continued)

Lab Sample ID: 13G0046-MSD1
Matrix: Soil
Analysis Batch: W000380

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total
Prep Batch: 13G0046_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics	ND		138	127		mg/kg dry	☼	92.0	75 - 125	10.1	25
Residual Range Organics	5.45		139	121		mg/kg dry	☼	82.9	60 - 120	2.56	25

Surrogate	*Matrix Spike Dup %Recovery*	*Matrix Spike Dup Qualifier*	*Limits*
1-Chlorooctadecane	*94.2*		*50 - 150*
Triacontane	*95.4*		*50 - 150*

Lab Sample ID: 13G0046-DUP1
Matrix: Soil
Analysis Batch: W000380

Client Sample ID: Duplicate
Prep Type: Total
Prep Batch: 13G0046_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Diesel Range Organics	ND		4.39		mg/kg dry	☼		20
Residual Range Organics	5.45		5.90		mg/kg dry	☼	8.00	50

Surrogate	*Duplicate %Recovery*	*Duplicate Qualifier*	*Limits*
1-Chlorooctadecane	*107*		*50 - 150*
Triacontane	*92.6*		*50 - 150*

Method: AK101/EPA 8021B - Gasoline Range Organics (C6-C10) and BTEX per AK101

Lab Sample ID: 13G0041-BLK1
Matrix: Soil
Analysis Batch: W000374

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 13G0041_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	ND		3.33		mg/kg wet		07/23/13 10:01	07/23/13 12:11	33.3
Benzene	ND		0.0200		mg/kg wet		07/23/13 10:01	07/23/13 12:11	33.3
Toluene	ND		0.0400		mg/kg wet		07/23/13 10:01	07/23/13 12:11	33.3
Ethylbenzene	ND		0.0400		mg/kg wet		07/23/13 10:01	07/23/13 12:11	33.3
Xylenes (total)	ND		0.120		mg/kg wet		07/23/13 10:01	07/23/13 12:11	33.3

Surrogate	*Blank %Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-BFB (FID)	*102*		*50 - 150*	*07/23/13 10:01*	*07/23/13 12:11*	*33.3*
a,a,a-TFT (FID)	*95.6*		*50 - 150*	*07/23/13 10:01*	*07/23/13 12:11*	*33.3*
4-BFB (PID)	*102*		*50 - 150*	*07/23/13 10:01*	*07/23/13 12:11*	*33.3*
a,a,a-TFT (PID)	*95.9*		*50 - 150*	*07/23/13 10:01*	*07/23/13 12:11*	*33.3*

Lab Sample ID: 13G0041-BS1
Matrix: Soil
Analysis Batch: W000374

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 13G0041_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.800	0.846		mg/kg wet		106	57 - 139
Toluene	0.800	0.828		mg/kg wet		103	48.7 - 152
Ethylbenzene	0.800	0.862		mg/kg wet		108	55.7 - 143

Method: AK101/EPA 8021B - Gasoline Range Organics (C6-C10) and BTEX per AK101 (Continued)

Lab Sample ID: 13G0041-BS1
Matrix: Soil
Analysis Batch: W000374

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 13G0041_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Xylenes (total)			2.40	2.60		mg/kg wet		108	53.8 - 142		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-BFB (PID)	*92.3*		*47.8 - 145*
a,a,a-TFT (PID)	*88.4*		*64.8 - 135*

Lab Sample ID: 13G0041-BS2
Matrix: Soil
Analysis Batch: W000374

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 13G0041_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics			20.0	13.8		mg/kg wet		68.8	60 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-BFB (FID)	*90.3*		*60 - 120*
a,a,a-TFT (FID)	*114*		*60 - 120*

Lab Sample ID: 13G0041-BSD1
Matrix: Soil
Analysis Batch: W000374

Client Sample ID: Lab Control Sample Dup
Prep Type: Total
Prep Batch: 13G0041_P

Analyte			Spike Added	LCS Dup Result	LCS Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			0.800	0.883		mg/kg wet		110	57 - 139	4.27	20
Toluene			0.800	0.868		mg/kg wet		109	48.7 - 152	4.77	20
Ethylbenzene			0.800	0.906		mg/kg wet		113	55.7 - 143	4.99	20
Xylenes (total)			2.40	2.73		mg/kg wet		114	53.8 - 142	5.09	20

Surrogate	*LCS Dup %Recovery*	*LCS Dup Qualifier*	*Limits*
4-BFB (PID)	*106*		*47.8 - 145*
a,a,a-TFT (PID)	*92.1*		*64.8 - 135*

Lab Sample ID: 13G0041-BSD2
Matrix: Soil
Analysis Batch: W000374

Client Sample ID: Lab Control Sample Dup
Prep Type: Total
Prep Batch: 13G0041_P

Analyte			Spike Added	LCS Dup Result	LCS Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics			20.0	13.8		mg/kg wet		69.1	60 - 120	0.466	20

Surrogate	*LCS Dup %Recovery*	*LCS Dup Qualifier*	*Limits*
4-BFB (FID)	*85.7*		*60 - 120*
a,a,a-TFT (FID)	*111*		*60 - 120*

Method: AK101/EPA 8021B - Gasoline Range Organics (C6-C10) and BTEX per AK101 (Continued)

Lab Sample ID: 13G0041-MS1
Matrix: Soil
Analysis Batch: W000374

Client Sample ID: Matrix Spike
Prep Type: Total
Prep Batch: 13G0041_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.00329		0.267	0.410	M7	mg/kg dry	☼	152	60 - 140
Toluene	0.0126		0.267	0.410	M7	mg/kg dry	☼	149	60 - 140
Ethylbenzene	0.00169		0.267	0.412	M7	mg/kg dry	☼	153	60 - 140
Xylenes (total)	0.00783		0.802	1.24	M7	mg/kg dry	☼	154	60 - 140

Surrogate	*Matrix Spike %Recovery*	*Matrix Spike Qualifier*	*Limits*
4-BFB (PID)	*109*		*50 - 150*
a,a,a-TFT (PID)	*99.0*		*50 - 150*

Lab Sample ID: 13G0041-MSD1
Matrix: Soil
Analysis Batch: W000374

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total
Prep Batch: 13G0041_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.00329		0.267	0.405	M7	mg/kg dry	☼	150	60 - 140	1.21	25
Toluene	0.0126		0.267	0.406	M7	mg/kg dry	☼	147	60 - 140	0.868	25
Ethylbenzene	0.00169		0.267	0.407	M7 C8	mg/kg dry	☼	152	60 - 140	1.11	25
Xylenes (total)	0.00783		0.802	1.22	M7 C8	mg/kg dry	☼	152	60 - 140	1.52	25

Surrogate	*Matrix Spike Dup %Recovery*	*Matrix Spike Dup Qualifier*	*Limits*
4-BFB (PID)	*136*	*C8*	*50 - 150*
a,a,a-TFT (PID)	*116*		*50 - 150*

Lab Sample ID: 13G0041-DUP1
Matrix: Soil
Analysis Batch: W000374

Client Sample ID: Duplicate
Prep Type: Total
Prep Batch: 13G0041_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Gasoline Range Organics	ND		ND		mg/kg dry	☼		20
Benzene	0.00329		0.00293		mg/kg dry	☼	11.5	20
Toluene	0.0126		0.0119		mg/kg dry	☼	5.85	20
Ethylbenzene	0.00169		0.00136	R4	mg/kg dry	☼	21.6	20
Xylenes (total)	0.00783		0.00641		mg/kg dry	☼	19.9	20

Surrogate	*Duplicate %Recovery*	*Duplicate Qualifier*	*Limits*
4-BFB (FID)	*114*		*50 - 150*
a,a,a-TFT (FID)	*105*		*50 - 150*
4-BFB (PID)	*114*		*50 - 150*
a,a,a-TFT (PID)	*106*		*50 - 150*

Lab Sample ID: 13G0051-BLK1
Matrix: Soil
Analysis Batch: W000377

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 13G0051_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	ND		3.33		mg/kg wet		07/24/13 09:31	07/24/13 12:14	33.3
Benzene	ND		0.0200		mg/kg wet		07/24/13 09:31	07/24/13 12:14	33.3

Method: AK101/EPA 8021B - Gasoline Range Organics (C6-C10) and BTEX per AK101 (Continued)

Lab Sample ID: 13G0051-BLK1
Matrix: Soil
Analysis Batch: W000377

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 13G0051_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	ND		0.0400		mg/kg wet		07/24/13 09:31	07/24/13 12:14	33.3
Ethylbenzene	ND		0.0400		mg/kg wet		07/24/13 09:31	07/24/13 12:14	33.3
Xylenes (total)	ND		0.120		mg/kg wet		07/24/13 09:31	07/24/13 12:14	33.3

Surrogate	*Blank %Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-BFB (FID)	*94.5*		*50 - 150*	*07/24/13 09:31*	*07/24/13 12:14*	*33.3*
a,a,a-TFT (FID)	*105*		*50 - 150*	*07/24/13 09:31*	*07/24/13 12:14*	*33.3*
4-BFB (PID)	*94.8*		*50 - 150*	*07/24/13 09:31*	*07/24/13 12:14*	*33.3*
a,a,a-TFT (PID)	*105*		*50 - 150*	*07/24/13 09:31*	*07/24/13 12:14*	*33.3*

Lab Sample ID: 13G0051-BS1
Matrix: Soil
Analysis Batch: W000377

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 13G0051_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			0.800	0.959		mg/kg wet		120	57 - 139		
Toluene			0.800	0.933		mg/kg wet		117	48.7 - 152		
Ethylbenzene			0.800	0.961		mg/kg wet		120	55.7 - 143		
Xylenes (total)			2.40	2.89		mg/kg wet		120	53.8 - 142		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-BFB (PID)	*123*		*47.8 - 145*
a,a,a-TFT (PID)	*101*		*64.8 - 135*

Lab Sample ID: 13G0051-BS2
Matrix: Soil
Analysis Batch: W000377

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 13G0051_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics			20.0	14.7		mg/kg wet		73.6	60 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-BFB (FID)	*113*		*60 - 120*
a,a,a-TFT (FID)	*119*		*60 - 120*

Lab Sample ID: 13G0051-BSD1
Matrix: Soil
Analysis Batch: W000377

Client Sample ID: Lab Control Sample Dup
Prep Type: Total
Prep Batch: 13G0051_P

Analyte			Spike Added	LCS Dup Result	LCS Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			0.800	0.968		mg/kg wet		121	57 - 139	0.926	20
Toluene			0.800	0.963		mg/kg wet		120	48.7 - 152	3.10	20
Ethylbenzene			0.800	1.01		mg/kg wet		126	55.7 - 143	4.56	20
Xylenes (total)			2.40	3.03		mg/kg wet		126	53.8 - 142	4.79	20

Surrogate	*LCS Dup %Recovery*	*LCS Dup Qualifier*	*Limits*
4-BFB (PID)	*125*		*47.8 - 145*

Method: AK101/EPA 8021B - Gasoline Range Organics (C6-C10) and BTEX per AK101 (Continued)

Lab Sample ID: 13G0051-BSD1
Matrix: Soil
Analysis Batch: W000377

Client Sample ID: Lab Control Sample Dup
Prep Type: Total
Prep Batch: 13G0051_P

Surrogate	*LCS Dup %Recovery*	*LCS Dup Qualifier*	*Limits*
a,a,a-TFT (PID)	*103*		*64.8 - 135*

Lab Sample ID: 13G0051-BSD2
Matrix: Soil
Analysis Batch: W000377

Client Sample ID: Lab Control Sample Dup
Prep Type: Total
Prep Batch: 13G0051_P

Analyte			Spike Added	LCS Dup Result	LCS Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics			20.0	14.7		mg/kg wet		73.5	60 - 120	0.127	20

Surrogate	*LCS Dup %Recovery*	*LCS Dup Qualifier*	*Limits*
4-BFB (FID)	*120*		*60 - 120*
a,a,a-TFT (FID)	*118*		*60 - 120*

Lab Sample ID: 13G0051-MS1
Matrix: Soil
Analysis Batch: W000377

Client Sample ID: Matrix Spike
Prep Type: Total
Prep Batch: 13G0051_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	ND		0.303	0.575	M7	mg/kg dry	☼	190	60 - 140
Toluene	0.00238		0.303	0.568	M7	mg/kg dry	☼	187	60 - 140
Ethylbenzene	ND		0.303	0.584	M7	mg/kg dry	☼	193	60 - 140
Xylenes (total)	ND		0.908	1.75	M7	mg/kg dry	☼	193	60 - 140

Surrogate	*Matrix Spike %Recovery*	*Matrix Spike Qualifier*	*Limits*
4-BFB (PID)	*107*		*50 - 150*
a,a,a-TFT (PID)	*99.7*		*50 - 150*

Lab Sample ID: 13G0051-MSD1
Matrix: Soil
Analysis Batch: W000377

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total
Prep Batch: 13G0051_P

Analyte	Sample Result	Sample Qualifier	Spike Added	ıtrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND		0.303	0.579	M7	mg/kg dry	☼	191	60 - 140	0.632	25
Toluene	0.00238		0.303	0.571	M7	mg/kg dry	☼	188	60 - 140	0.582	25
Ethylbenzene	ND		0.303	0.594	M7	mg/kg dry	☼	196	60 - 140	1.80	25
Xylenes (total)	ND		0.908	1.78	M7	mg/kg dry	☼	196	60 - 140	1.83	25

Surrogate	*Matrix Spike Dup %Recovery*	*Matrix Spike Dup Qualifier*	*Limits*
4-BFB (PID)	*106*		*50 - 150*
a,a,a-TFT (PID)	*96.4*		*50 - 150*

Lab Sample ID: 13G0051-DUP1
Matrix: Soil
Analysis Batch: W000377

Client Sample ID: Duplicate
Prep Type: Total
Prep Batch: 13G0051_P

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Gasoline Range Organics	ND		ND		mg/kg dry	☼		20

Method: AK101/EPA 8021B - Gasoline Range Organics (C6-C10) and BTEX per AK101 (Continued)

Lab Sample ID: 13G0051-DUP1
Matrix: Soil
Analysis Batch: W000377

Client Sample ID: Duplicate
Prep Type: Total
Prep Batch: 13G0051_P

Analyte	Sample Result	Sample Qualifier		Duplicate Result	Duplicate Qualifier	Unit	D			RPD	RPD Limit
Benzene	ND			ND		mg/kg dry	☼				20
Toluene	0.00238			0.00169	R4	mg/kg dry	☼			33.9	20
Ethylbenzene	ND			ND		mg/kg dry	☼				20
Xylenes (total)	ND			ND		mg/kg dry	☼				20

Surrogate	*Duplicate %Recovery*	*Duplicate Qualifier*	*Limits*
4-BFB (FID)	*107*		*50 - 150*
a,a,a-TFT (FID)	*103*		*50 - 150*
4-BFB (PID)	*107*		*50 - 150*
a,a,a-TFT (PID)	*104*		*50 - 150*

Semivolatiles

Analysis Batch: 13G0142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
13G0142-BLK1	Method Blank	Total	Soil	EPA 8270D	13G0142_P
13G0142-BS1	Lab Control Sample	Total	Soil	EPA 8270D	13G0142_P
13G0142-BSD1	Lab Control Sample Dup	Total	Soil	EPA 8270D	13G0142_P
13G0142-MS1	Matrix Spike	Total	Soil	EPA 8270D	13G0142_P
13G0142-MSD1	Matrix Spike Duplicate	Total	Soil	EPA 8270D	13G0142_P
AWG0025-06	KLD-06-0713	Total	Soil	EPA 8270D	13G0142_P
AWG0025-07	KLD-07-0713	Total	Soil	EPA 8270D	13G0142_P

Prep Batch: 13G0142_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
13G0142-BLK1	Method Blank	Total	Soil	EPA 3550B	
13G0142-BS1	Lab Control Sample	Total	Soil	EPA 3550B	
13G0142-BSD1	Lab Control Sample Dup	Total	Soil	EPA 3550B	
13G0142-MS1	Matrix Spike	Total	Soil	EPA 3550B	
13G0142-MSD1	Matrix Spike Duplicate	Total	Soil	EPA 3550B	
AWG0025-06	KLD-06-0713	Total	Soil	EPA 3550B	
AWG0025-07	KLD-07-0713	Total	Soil	EPA 3550B	

Fuels

Analysis Batch: 13G0047

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
13G0047-DUP1	Duplicate	Total	Soil	TA-SOP	13G0047_P
AWG0025-01	KLD-01-0713	Total	Soil	TA-SOP	13G0047_P
AWG0025-02	KLD-02-0713	Total	Soil	TA-SOP	13G0047_P
AWG0025-03	KLD-03-0713	Total	Soil	TA-SOP	13G0047_P
AWG0025-04	KLD-04-0713	Total	Soil	TA-SOP	13G0047_P
AWG0025-05	KLD-05-0713	Total	Soil	TA-SOP	13G0047_P
AWG0025-06	KLD-06-0713	Total	Soil	TA-SOP	13G0047_P
AWG0025-07	KLD-07-0713	Total	Soil	TA-SOP	13G0047_P
AWG0025-08	KLD-08-0713	Total	Soil	TA-SOP	13G0047_P
AWG0025-09	KLD-09-0713	Total	Soil	TA-SOP	13G0047_P
AWG0025-10	Trip Blank	Total	Soil	TA-SOP	13G0047_P

Analysis Batch: W000378

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
AWG0025-01	KLD-01-0713	Total	Soil	AK102/103	13G0046_P
AWG0025-03	KLD-03-0713	Total	Soil	AK102/103	13G0046_P

Analysis Batch: W000379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
AWG0025-02	KLD-02-0713	Total	Soil	AK102/103	13G0046_P
AWG0025-04	KLD-04-0713	Total	Soil	AK102/103	13G0046_P
AWG0025-06	KLD-06-0713	Total	Soil	AK102/103	13G0046_P

Analysis Batch: W000380

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
13G0046-DUP1	Duplicate	Total	Soil	AK102/103	13G0046_P
13G0046-MS1	Matrix Spike	Total	Soil	AK102/103	13G0046_P
13G0046-MSD1	Matrix Spike Duplicate	Total	Soil	AK102/103	13G0046_P

Fuels (Continued)

Analysis Batch: W000380 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
AWG0025-07	KLD-07-0713	Total	Soil	AK102/103	13G0046_P
AWG0025-09	KLD-09-0713	Total	Soil	AK102/103	13G0046_P

Analysis Batch: W000381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
13G0046-BLK1	Method Blank	Total	Soil	AK102/103	13G0046_P
13G0046-BS1	Lab Control Sample	Total	Soil	AK102/103	13G0046_P
13G0046-BSD1	Lab Control Sample Dup	Total	Soil	AK102/103	13G0046_P
AWG0025-05	KLD-05-0713	Total	Soil	AK102/103	13G0046_P
AWG0025-08	KLD-08-0713	Total	Soil	AK102/103	13G0046_P

Prep Batch: 13G0046_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
13G0046-BLK1	Method Blank	Total	Soil	EPA 3545	
13G0046-BS1	Lab Control Sample	Total	Soil	EPA 3545	
13G0046-BSD1	Lab Control Sample Dup	Total	Soil	EPA 3545	
13G0046-DUP1	Duplicate	Total	Soil	EPA 3545	
13G0046-MS1	Matrix Spike	Total	Soil	EPA 3545	
13G0046-MSD1	Matrix Spike Duplicate	Total	Soil	EPA 3545	
AWG0025-01	KLD-01-0713	Total	Soil	EPA 3545	
AWG0025-02	KLD-02-0713	Total	Soil	EPA 3545	
AWG0025-03	KLD-03-0713	Total	Soil	EPA 3545	
AWG0025-04	KLD-04-0713	Total	Soil	EPA 3545	
AWG0025-05	KLD-05-0713	Total	Soil	EPA 3545	
AWG0025-06	KLD-06-0713	Total	Soil	EPA 3545	
AWG0025-07	KLD-07-0713	Total	Soil	EPA 3545	
AWG0025-08	KLD-08-0713	Total	Soil	EPA 3545	
AWG0025-09	KLD-09-0713	Total	Soil	EPA 3545	

Prep Batch: 13G0047_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
13G0047-DUP1	Duplicate	Total	Soil	*** DEFAULT PREP ***	
AWG0025-01	KLD-01-0713	Total	Soil	*** DEFAULT PREP ***	
AWG0025-02	KLD-02-0713	Total	Soil	*** DEFAULT PREP ***	
AWG0025-03	KLD-03-0713	Total	Soil	*** DEFAULT PREP ***	
AWG0025-04	KLD-04-0713	Total	Soil	*** DEFAULT PREP ***	
AWG0025-05	KLD-05-0713	Total	Soil	*** DEFAULT PREP ***	
AWG0025-06	KLD-06-0713	Total	Soil	*** DEFAULT PREP ***	
AWG0025-07	KLD-07-0713	Total	Soil	*** DEFAULT PREP ***	
AWG0025-08	KLD-08-0713	Total	Soil	*** DEFAULT PREP ***	
AWG0025-09	KLD-09-0713	Total	Soil	*** DEFAULT PREP ***	
AWG0025-10	Trip Blank	Total	Soil	*** DEFAULT PREP ***	

Client: Alaska Resources & Environmental Services
Project/Site: KLD-0713

TestAmerica Job ID: AWG0025

GC Volatiles

Analysis Batch: W000374

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
13G0041-BLK1	Method Blank	Total	Soil	AK101/EPA 8021B	13G0041_P
13G0041-BS1	Lab Control Sample	Total	Soil	AK101/EPA 8021B	13G0041_P
13G0041-BS2	Lab Control Sample	Total	Soil	AK101/EPA 8021B	13G0041_P
13G0041-BSD1	Lab Control Sample Dup	Total	Soil	AK101/EPA 8021B	13G0041_P
13G0041-BSD2	Lab Control Sample Dup	Total	Soil	AK101/EPA 8021B	13G0041_P
13G0041-DUP1	Duplicate	Total	Soil	AK101/EPA 8021B	13G0041_P
13G0041-MS1	Matrix Spike	Total	Soil	AK101/EPA 8021B	13G0041_P
13G0041-MSD1	Matrix Spike Duplicate	Total	Soil	AK101/EPA 8021B	13G0041_P
AWG0025-01	KLD-01-0713	Total	Soil	AK101/EPA 8021B	13G0041_P
AWG0025-02	KLD-02-0713	Total	Soil	AK101/EPA 8021B	13G0041_P
AWG0025-03	KLD-03-0713	Total	Soil	AK101/EPA 8021B	13G0041_P
AWG0025-04	KLD-04-0713	Total	Soil	AK101/EPA 8021B	13G0041_P
AWG0025-05	KLD-05-0713	Total	Soil	AK101/EPA 8021B	13G0041_P
AWG0025-06	KLD-06-0713	Total	Soil	AK101/EPA 8021B	13G0041_P

Analysis Batch: W000377

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
13G0051-BLK1	Method Blank	Total	Soil	AK101/EPA 8021B	13G0051_P
13G0051-BS1	Lab Control Sample	Total	Soil	AK101/EPA 8021B	13G0051_P
13G0051-BS2	Lab Control Sample	Total	Soil	AK101/EPA 8021B	13G0051_P
13G0051-BSD1	Lab Control Sample Dup	Total	Soil	AK101/EPA 8021B	13G0051_P
13G0051-BSD2	Lab Control Sample Dup	Total	Soil	AK101/EPA 8021B	13G0051_P
13G0051-DUP1	Duplicate	Total	Soil	AK101/EPA 8021B	13G0051_P
13G0051-MS1	Matrix Spike	Total	Soil	AK101/EPA 8021B	13G0051_P
13G0051-MSD1	Matrix Spike Duplicate	Total	Soil	AK101/EPA 8021B	13G0051_P
AWG0025-07	KLD-07-0713	Total	Soil	AK101/EPA 8021B	13G0051_P
AWG0025-08	KLD-08-0713	Total	Soil	AK101/EPA 8021B	13G0051_P
AWG0025-09	KLD-09-0713	Total	Soil	AK101/EPA 8021B	13G0051_P
AWG0025-10	Trip Blank	Total	Soil	AK101/EPA 8021B	13G0051_P

GC Volatiles (Continued)

Prep Batch: 13G0041_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
13G0041-BLK1	Method Blank	Total	Soil	AK101 Field Prep	
13G0041-BS1	Lab Control Sample	Total	Soil	AK101 Field Prep	
13G0041-BS2	Lab Control Sample	Total	Soil	AK101 Field Prep	
13G0041-BSD1	Lab Control Sample Dup	Total	Soil	AK101 Field Prep	
13G0041-BSD2	Lab Control Sample Dup	Total	Soil	AK101 Field Prep	
13G0041-DUP1	Duplicate	Total	Soil	AK101 Field Prep	
13G0041-MS1	Matrix Spike	Total	Soil	AK101 Field Prep	
13G0041-MSD1	Matrix Spike Duplicate	Total	Soil	AK101 Field Prep	
AWG0025-01	KLD-01-0713	Total	Soil	AK101 Field Prep	
AWG0025-02	KLD-02-0713	Total	Soil	AK101 Field Prep	
AWG0025-03	KLD-03-0713	Total	Soil	AK101 Field Prep	
AWG0025-04	KLD-04-0713	Total	Soil	AK101 Field Prep	
AWG0025-05	KLD-05-0713	Total	Soil	AK101 Field Prep	
AWG0025-06	KLD-06-0713	Total	Soil	AK101 Field Prep	

Prep Batch: 13G0051_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
13G0051-BLK1	Method Blank	Total	Soil	AK101 Field Prep	
13G0051-BS1	Lab Control Sample	Total	Soil	AK101 Field Prep	
13G0051-BS2	Lab Control Sample	Total	Soil	AK101 Field Prep	
13G0051-BSD1	Lab Control Sample Dup	Total	Soil	AK101 Field Prep	
13G0051-BSD2	Lab Control Sample Dup	Total	Soil	AK101 Field Prep	
13G0051-DUP1	Duplicate	Total	Soil	AK101 Field Prep	
13G0051-MS1	Matrix Spike	Total	Soil	AK101 Field Prep	
13G0051-MSD1	Matrix Spike Duplicate	Total	Soil	AK101 Field Prep	
AWG0025-07	KLD-07-0713	Total	Soil	AK101 Field Prep	
AWG0025-08	KLD-08-0713	Total	Soil	AK101 Field Prep	
AWG0025-09	KLD-09-0713	Total	Soil	AK101 Field Prep	
AWG0025-10	Trip Blank	Total	Soil	AK101 Field Prep	

QC Association Summary

Client: Alaska Resources & Environmental Services
Project/Site: KLD-0713

TestAmerica Job ID: AWG0025

Wet Chem

Analysis Batch: 13G0157

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
13G0157-DUP1	Duplicate	Total	Soil	TA SOP	13G0157_P
AWG0025-06	KLD-06-0713	Total	Soil	TA SOP	13G0157_P
AWG0025-07	KLD-07-0713	Total	Soil	TA SOP	13G0157_P

Prep Batch: 13G0157_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
13G0157-DUP1	Duplicate	Total	Soil	Wet Chem	
AWG0025-06	KLD-06-0713	Total	Soil	Wet Chem	
AWG0025-07	KLD-07-0713	Total	Soil	Wet Chem	

Client Sample ID: KLD-01-0713

Lab Sample ID: AWG0025-01

Date Collected: 07/19/13 12:30

Matrix: Soil

Date Received: 07/22/13 13:50

Percent Solids: 90.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	EPA 3545		0.985	13G0046_P	07/23/13 13:02	KDC	TAL ANC
Total	Analysis	AK102/103		1.00	W000378	07/24/13 23:07	KDC	TAL ANC
Total	Prep	*** DEFAULT PREP ***		1.00	13G0047_P	07/23/13 16:20	KDC	TAL ANC
Total	Analysis	TA-SOP		1.00	13G0047	07/24/13 08:05	KDC	TAL ANC
Total	Prep	AK101 Field Prep		0.606	13G0041_P	07/23/13 10:01	AD	TAL ANC
Total	Analysis	AK101/EPA 8021B		33.3	W000374	07/23/13 19:00	ASD	TAL ANC

Client Sample ID: KLD-02-0713

Lab Sample ID: AWG0025-02

Date Collected: 07/19/13 12:45

Matrix: Soil

Date Received: 07/22/13 13:50

Percent Solids: 92.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	EPA 3545		0.990	13G0046_P	07/23/13 13:02	KDC	TAL ANC
Total	Analysis	AK102/103		1.00	W000379	07/24/13 23:07	KDC	TAL ANC
Total	Prep	*** DEFAULT PREP ***		1.00	13G0047_P	07/23/13 16:20	KDC	TAL ANC
Total	Analysis	TA-SOP		1.00	13G0047	07/24/13 08:05	KDC	TAL ANC
Total	Prep	AK101 Field Prep		0.640	13G0041_P	07/23/13 10:01	AD	TAL ANC
Total	Analysis	AK101/EPA 8021B		33.3	W000374	07/23/13 19:28	ASD	TAL ANC

Client Sample ID: KLD-03-0713

Lab Sample ID: AWG0025-03

Date Collected: 07/19/13 12:50

Matrix: Soil

Date Received: 07/22/13 13:50

Percent Solids: 96.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	EPA 3545		0.993	13G0046_P	07/23/13 13:02	KDC	TAL ANC
Total	Analysis	AK102/103		1.00	W000378	07/24/13 23:40	KDC	TAL ANC
Total	Prep	*** DEFAULT PREP ***		1.00	13G0047_P	07/23/13 16:20	KDC	TAL ANC
Total	Analysis	TA-SOP		1.00	13G0047	07/24/13 08:05	KDC	TAL ANC
Total	Prep	AK101 Field Prep		0.712	13G0041_P	07/23/13 10:01	AD	TAL ANC
Total	Analysis	AK101/EPA 8021B		33.3	W000374	07/23/13 19:55	ASD	TAL ANC

Client Sample ID: KLD-04-0713

Lab Sample ID: AWG0025-04

Date Collected: 07/19/13 12:55

Matrix: Soil

Date Received: 07/22/13 13:50

Percent Solids: 95.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	EPA 3545		0.997	13G0046_P	07/23/13 13:02	KDC	TAL ANC
Total	Analysis	AK102/103		1.00	W000379	07/24/13 23:40	KDC	TAL ANC
Total	Prep	*** DEFAULT PREP ***		1.00	13G0047_P	07/23/13 16:20	KDC	TAL ANC
Total	Analysis	TA-SOP		1.00	13G0047	07/24/13 08:05	KDC	TAL ANC
Total	Prep	AK101 Field Prep		0.475	13G0041_P	07/23/13 10:01	AD	TAL ANC
Total	Analysis	AK101/EPA 8021B		33.3	W000374	07/23/13 20:22	ASD	TAL ANC

Client Sample ID: KLD-05-0713

Lab Sample ID: AWG0025-05

Date Collected: 07/19/13 13:00

Matrix: Soil

Date Received: 07/22/13 13:50

Percent Solids: 89.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	EPA 3545		0.990	13G0046_P	07/23/13 13:02	KDC	TAL ANC
Total	Analysis	AK102/103		1.00	W000381	07/25/13 14:35	KDC	TAL ANC
Total	Prep	*** DEFAULT PREP ***		1.00	13G0047_P	07/23/13 16:20	KDC	TAL ANC
Total	Analysis	TA-SOP		1.00	13G0047	07/24/13 08:05	KDC	TAL ANC
Total	Prep	AK101 Field Prep		0.475	13G0041_P	07/23/13 10:01	AD	TAL ANC
Total	Analysis	AK101/EPA 8021B		33.3	W000374	07/23/13 20:49	ASD	TAL ANC

Client Sample ID: KLD-06-0713

Lab Sample ID: AWG0025-06

Date Collected: 07/19/13 13:05

Matrix: Soil

Date Received: 07/22/13 13:50

Percent Solids: 90.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	EPA 3550B		2.58	13G0142_P	07/25/13 08:50	SMS	TAL SPK
Total	Analysis	EPA 8270D		5.00	13G0142	07/31/13 19:27	MRS	TAL SPK
Total	Prep	EPA 3545		0.995	13G0046_P	07/23/13 13:02	KDC	TAL ANC
Total	Analysis	AK102/103		5.00	W000379	07/25/13 00:13	KDC	TAL ANC
Total	Prep	*** DEFAULT PREP ***		1.00	13G0047_P	07/23/13 16:20	KDC	TAL ANC
Total	Analysis	TA-SOP		1.00	13G0047	07/24/13 08:05	KDC	TAL ANC
Total	Prep	AK101 Field Prep		0.627	13G0041_P	07/23/13 10:01	AD	TAL ANC
Total	Analysis	AK101/EPA 8021B		33.3	W000374	07/23/13 23:12	ASD	TAL ANC
Total	Prep	Wet Chem		1.00	13G0157_P	07/29/13 08:40	SMS	TAL SPK
Total	Analysis	TA SOP		1.00	13G0157	07/29/13 08:44	SMS	TAL SPK

Client Sample ID: KLD-07-0713

Lab Sample ID: AWG0025-07

Date Collected: 07/19/13 13:10

Matrix: Soil

Date Received: 07/22/13 13:50

Percent Solids: 90.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	EPA 3550B		2.47	13G0142_P	07/25/13 08:50	SMS	TAL SPK
Total	Analysis	EPA 8270D		4.00	13G0142	08/01/13 21:41	MRS	TAL SPK
Total	Prep	EPA 3545		0.998	13G0046_P	07/23/13 13:02	KDC	TAL ANC
Total	Analysis	AK102/103		5.00	W000380	07/25/13 14:02	KDC	TAL ANC
Total	Prep	*** DEFAULT PREP ***		1.00	13G0047_P	07/23/13 16:20	KDC	TAL ANC
Total	Analysis	TA-SOP		1.00	13G0047	07/24/13 08:05	KDC	TAL ANC
Total	Prep	AK101 Field Prep		0.616	13G0051_P	07/24/13 09:31	AD	TAL ANC
Total	Analysis	AK101/EPA 8021B		33.3	W000377	07/25/13 01:41	ASD	TAL ANC
Total	Prep	Wet Chem		1.00	13G0157_P	07/29/13 08:40	SMS	TAL SPK
Total	Analysis	TA SOP		1.00	13G0157	07/29/13 08:44	SMS	TAL SPK

Lab Chronicle

Client: Alaska Resources & Environmental Services
Project/Site: KLD-0713

TestAmerica Job ID: AWG0025

Client Sample ID: KLD-08-0713

Lab Sample ID: AWG0025-08

Date Collected: 07/19/13 14:20
Matrix: Soil
Date Received: 07/22/13 13:50
Percent Solids: 93.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	EPA 3545		0.984	13G0046_P	07/23/13 13:02	KDC	TAL ANC
Total	Analysis	AK102/103		1.00	W000381	07/25/13 14:02	KDC	TAL ANC
Total	Prep	*** DEFAULT PREP ***		1.00	13G0047_P	07/23/13 16:20	KDC	TAL ANC
Total	Analysis	TA-SOP		1.00	13G0047	07/24/13 08:05	KDC	TAL ANC
Total	Prep	AK101 Field Prep		0.591	13G0051_P	07/24/13 09:31	AD	TAL ANC
Total	Analysis	AK101/EPA 8021B		33.3	W000377	07/25/13 02:08	ASD	TAL ANC

Client Sample ID: KLD-09-0713

Lab Sample ID: AWG0025-09

Date Collected: 07/19/13 14:25
Matrix: Soil
Date Received: 07/22/13 13:50
Percent Solids: 94

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	EPA 3545		0.985	13G0046_P	07/23/13 13:02	KDC	TAL ANC
Total	Analysis	AK102/103		5.00	W000380	07/25/13 14:35	KDC	TAL ANC
Total	Prep	*** DEFAULT PREP ***		1.00	13G0047_P	07/23/13 16:20	KDC	TAL ANC
Total	Analysis	TA-SOP		1.00	13G0047	07/24/13 08:05	KDC	TAL ANC
Total	Prep	AK101 Field Prep		0.613	13G0051_P	07/24/13 09:31	AD	TAL ANC
Total	Analysis	AK101/EPA 8021B		33.3	W000377	07/25/13 02:35	ASD	TAL ANC

Client Sample ID: Trip Blank

Lab Sample ID: AWG0025-10

Date Collected: 07/19/13 12:00
Matrix: Soil
Date Received: 07/22/13 13:50
Percent Solids: 100

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	*** DEFAULT PREP ***		1.00	13G0047_P	07/23/13 16:20	KDC	TAL ANC
Total	Analysis	TA-SOP		1.00	13G0047	07/24/13 08:05	KDC	TAL ANC
Total	Prep	AK101 Field Prep		1.00	13G0051_P	07/24/13 09:31	AD	TAL ANC
Total	Analysis	AK101/EPA 8021B		33.3	W000377	07/24/13 18:38	ASD	TAL ANC

Laboratory References:

TAL ANC = TestAmerica Anchorage, 2000 West International Airport Road Suite A10, Anchorage, AK 99502-1119, TEL (907) 563-9200

TAL SPK = TestAmerica Spokane, 11922 East 1st. Avenue, Spokane, WA 99206, TEL (509)924-9200

Certification Summary

Client: Alaska Resources & Environmental Services
Project/Site: KLD-0713

TestAmerica Job ID: AWG0025

Laboratory: TestAmerica Anchorage

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	AK00975	06-30-14
Alaska (UST)	State Program	10	UST-067	06-16-14

Laboratory: TestAmerica Spokane

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-071	10-31-13
Washington	State Program	10	C569	01-06-14

Method Summary

Client: Alaska Resources & Environmental Services
Project/Site: KLD-0713

TestAmerica Job ID: AWG0025

Method	Method Description	Protocol	Laboratory
EPA 8270D	Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring		TAL SPK
AK102/103	Diesel Range Organics (C10-C25) and Residual Range Organics (C25-C36) per AK102/RRO		TAL ANC
TA-SOP	Physical Parameters by APHA/ASTM/EPA Methods		TAL ANC
AK101/EPA 8021B	Gasoline Range Organics (C6-C10) and BTEX per AK101		TAL ANC
TA SOP	Conventional Chemistry Parameters by APHA/EPA Methods		TAL SPK

Protocol References:

Laboratory References:

TAL ANC = TestAmerica Anchorage, 2000 West International Airport Road Suite A10, Anchorage, AK 99502-1119, TEL (907) 563-9200

TAL SPK = TestAmerica Spokane, 11922 East 1st. Avenue, Spokane, WA 99206, TEL (509)924-9200

Sample Summary

Client: Alaska Resources & Environmental Services
Project/Site: KLD-0713

TestAmerica Job ID: AWG0025

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
AWG0025-01	KLD-01-0713	Soil	07/19/13 12:30	07/22/13 13:50
AWG0025-02	KLD-02-0713	Soil	07/19/13 12:45	07/22/13 13:50
AWG0025-03	KLD-03-0713	Soil	07/19/13 12:50	07/22/13 13:50
AWG0025-04	KLD-04-0713	Soil	07/19/13 12:55	07/22/13 13:50
AWG0025-05	KLD-05-0713	Soil	07/19/13 13:00	07/22/13 13:50
AWG0025-06	KLD-06-0713	Soil	07/19/13 13:05	07/22/13 13:50
AWG0025-07	KLD-07-0713	Soil	07/19/13 13:10	07/22/13 13:50
AWG0025-08	KLD-08-0713	Soil	07/19/13 14:20	07/22/13 13:50
AWG0025-09	KLD-09-0713	Soil	07/19/13 14:25	07/22/13 13:50
AWG0025-10	Trip Blank	Soil	07/19/13 12:00	07/22/13 13:50

ALASKA RESOURCES AND ENVIRONMENTAL SERVICES

ARES
P.O. Box 83050
Fairbanks, Alaska 99708
Phone: 907.374.3226
Fax: 907.374.2319

AWG0029

Chain of Custody Report

Client: Alaska Resources and Environmental Services

Report To: Lyle Gresehover
Address: ARES, P.O. Box 83050
Email: lyle@ak-res.com
Phone: (907) 374-3226 Fax: (907)374-3219

Project Name: K&L Distributors UST
Project Number: KLD-0713
Sampled By: Dustin Stahl

Invoice To: ARES, P.O. Box 83050, Fairbanks, Alaska 99708

P.O. Number:

Laboratory Name: Test America Inc.
Address: 2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119

Turnaround Request In Business Days

Organic & Inorganic Analyses: 10 | 7 | 5 | 4 | 3 | 2 | 1 | <1

Petroleum Hydrocarbon Analyses: 5 | 4 | 3 | 2 | 1 | <1

Specify Other:

Report Tier Levels: Tier II reporting requested (results + QC)

Preservative: METH | METH | N/A | N/A

Requested Analyses

	Sample Identification	Sampling Date/ Time		AK 101 GRO	EPA 8260B BTEX	AK 102 DRO	AK 103 RRO	EPA 8270D PAH							Matrix (W,S,O)	# of Cont.	Location / Comments	Lab ID
1	KLD-01-0713	07/19/2013	1230	X	X	X	X								S	2		01
2	KLD-02-0713	07/19/2013	1245	X	X	X	X								S	2		02
3	KLD-03-0713	07/19/2013	1250	X	X	X	X								S	2		03
4	KLD-04-0713	07/19/2013	1255	X	X	X	X								S	2		04
5	KLD-05-0713	07/19/2013	1300	X	X	X	X								S	2		05
6	KLD-06-0713	07/19/2013	1305	X	X	X	X	X							S	3		06
7	KLD-07-0713	07/19/2013	1310	X	X	X	X	X							S	3		07
8	KLD-08-0713	07/19/2013	1420	X	X	X	X								S	2		08
9	KLD-09-0713	07/19/2013	1425	X	X	X	X								S	2		09
10	Trip Blank	07/19/2013	1200	X	X										O	1		10

Released By: Dustin Stahl Firm: ARES Date: 07/22/2013 Time: 0900

Received By: Firm: Date: Time:

Released By: Firm: Date: Time:

Received By: Madiha Ahmed Firm: TA-AK Date: 07/22/13 Time: 13:50

Additional Remarks:

Temp: 2.4°C

Page 1 of 1

COC REV 02/2008

Test America Cooler Receipt Form

(Army Corps. Compliant)

WORK ORDER # AW60024 CLIENT: ARES PROJECT: K and L Distributors UST

Date/Time Cooler Arrived 7/22/13 13:50 Cooler signed for by: Madiha Ahmed (Print name)

Preliminary Examination Phase:

Date cooler opened: ☒ same as date received *or* ____/____/____

Cooler opened by (print) Madiha Ahmed (sign) madiha

1. Delivered by ☐ ALASKA AIRLINES ☐ Fed-Ex ☐ UPS ☐ NAC ☐ LYNDEN ☒ CLIENT ☐ Other:

Shipment Tracking # if applicable _____ (include copy of shipping papers in file)

2. Number of Custody Seals 2 Signed by see back Date ____/____/____

Were custody seals unbroken and intact on arrival?	☒ Yes	☐ No
3. Were custody papers sealed in a plastic bag?	☒ Yes	☐ No
4. Were custody papers filled out properly (ink, signed, etc.)?	☒ Yes	☐ No
5. Did you sign the custody papers in the appropriate place?	☒ Yes	☐ No

6. Was ice used? ☒ Yes ☐ No Type of ice: ☐ blue ice ☒ gel ice ☐ real ice ☐ dry ice Condition of Ice: hard

Temperature 2.4 °C (corrected) Thermometer # Rec #5

7. Packing in Cooler: ☒ bubble wrap ☐ styrofoam ☒ cardboard ☐ Other: _____

8. Did samples arrive in plastic bags?	☐ Yes	☒ No	
9. Did all bottles arrive unbroken, and with labels in good condition?	☒ Yes	☐ No	
10. Are all bottle labels complete (ID, date, time, etc.)	☒ Yes	☐ No	
11. Do bottle labels and Chain of Custody agree?	☒ Yes	☐ No	
12. Are the containers and preservatives correct for the tests indicated?	☒ Yes	☐ No	
13. Conoco Phillips, Alyeska, BP H2O samples only, pH <2?	☐ Yes	☐ No	☒ N/A
14. Is there adequate volume for the tests requested?	☒ Yes	☐ No	
14. Is there dry weight volume provided?	☒ Yes	☐ No	
15. Were VOA vials free of bubbles? ☒ N/A	☐ Yes	☐ No	

If "NO" which containers contained "head space" or bubbles? _____

16. Are methanol soils immersed in methanol?	☒ Yes	☐ No	☐ N/A

Log-in Phase:

Date of sample log-in 7/22/13

Samples logged in by (print) Andrew Pilch (sign) Andrew Pilch

1. Was project identifiable from custody papers?	☒ Yes	☐ No
2. Do Turn Around Times and Due Dates agree?	☒ Yes	☐ No
3. Was the Project Manager notified of status?	☒ Yes	☐ No
4. Was the Lab notified of status?	☒ Yes	☐ No
5. Was the COC scanned and copied?	☒ Yes	☐ No

AK-FORM-SPL-005 5 October 2011

AL

-233-8425

Date: 7/22/13

Signature:

CUSTODY SE

ENVIRONMENTAL SAMPLING SUPPLY

9601 San Leandro St. Oakland, CA 800

AWG0025

Date: 7/22/13

Signature:

CUSTODY SEAL

ENVIRONMENTAL SAMPLING SUPPLY

9601 San Leandro St. Oakland, CA 800-233-8425

Laboratory Data Review Checklist

Completed by: Lyle Gresehover

Title: Project Manager Date: 9/4/2013

CS Report Name: K&L Distributors UST Closure / Site Characterization Report Date: 8/6/2013

Consultant Firm: Alaska Resources and Environmental Services

Laboratory Name: Test America Anchorage Laboratory Report Number: AWG0025

ADEC File Number: ADEC RecKey Number:

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

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
      Yes No NA (Please explain.) Comments:

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

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

3. Laboratory Sample Receipt Documentation
   a. Sample/cooler temperature documented and within range at receipt (4° ± 2° C)?
      Yes No NA (Please explain.) Comments:

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

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

No adverse conditions were noted.

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?
Yes No NA (Please explain.) Comments:

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

N/A

4. Case Narrative
a. Present and understandable?
Yes No NA (Please explain.) Comments:

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

No errors identified in case narrative. Samples w/QC qualifiers listed in definition section.

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

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

No effect to data usability.

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

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

c. All soils reported on a dry weight basis?

Yes No NA (Please explain.) Comments:

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

Yes No NA (Please explain.) Comments:

e. Data quality or usability affected?

Comments:

N/A

6. QC Samples

a. Method Blank

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

Yes No NA (Please explain.) Comments:

ii. All method blank results less than PQL?

Yes No NA (Please explain.) Comments:

iii. If above PQL, what samples are affected?

Comments:

N/A

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

Yes No NA (Please explain.) Comments:

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

Comments:

N/A

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

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

Yes No NA (Please explain.) Comments:

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

Yes No NA (Please explain.) Comments:

No metals or inorganic samples were collected or analyzed for this sampling event.

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

Yes No NA (Please explain.) Comments:

Matrix Spike surrogate recovery exceeded allowable limit due to dilution and matrix interference

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

Yes No NA (Please explain.) Comments:

The RPD between the primary and confirmatory analysis exceed 40%

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

Comments:

KLD-07-0713 & KLD-07-0713

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

Yes No NA (Please explain.) Comments:

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

Comments:

Data usability not affected

c. Surrogates – Organics Only

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

Yes No NA (Please explain.) Comments:

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

Yes No NA (Please explain.) Comments:

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

Yes No NA (Please explain.) Comments:

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

Comments:

N/A

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

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

Yes No NA (Please explain.) Comments:

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

Yes No NA (Please explain.) Comments:

No unique identifying marks were available on the cooler. Custody seal was intact upon receipt.

iii. All results less than PQL?

Yes No NA (Please explain.) Comments:

iv. If above PQL, what samples are affected?

Comments:

N/A

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

Comments:

N/A

e. Field Duplicate

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

Yes No NA (Please explain.) Comments:

ii. Submitted blind to lab?

Yes No NA (Please explain.) Comments:

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

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

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

Yes No NA (Please explain.) Comments:

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

Comments:

N/A

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

Yes No NA (Please explain.) Comments:

No equipment blank was required for this sampling event.

i. All results less than PQL?

Yes No NA (Please explain.) Comments:

ii. If above PQL, what samples are affected?

Comments:

N/A

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

Comments:

N/A

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

a. Defined and appropriate?

Yes No NA (Please explain.) Comments:

Appendix D:

ADEC Spill Report Form

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

OIL & HAZARDOUS SUBSTANCES SPILL NOTIFICATION FORM

ADEC USE ONLY

ADEC SPILL #:	ADEC FILE #:	ADEC LC:

PERSON REPORTING:	PHONE NUMBER:	REPORTED HOW? (ADEC USE ONLY)
Lyle Gresehover	(907) 374-3226	☒ Phone ☐ Fax ☐ Troopers
DATE/TIME OF SPILL:	**DATE/TIME DISCOVERED:**	**DATE/TIME REPORTED:**
Unknown	7/19/2-13	7/24/2013

INCIDENT LOCATION/ADDRESS:	DATUM: ☐ NAD27 ☐ NAD83 ☐ WGS84 ☐ Other _____	PRODUCT SPILLED:
K&L Distributors 945 Elizabeth Street Fairbanks, Alaska 99709	LAT. LONG.	Diesel

QUANTITY SPILLED:	QUANTITY CONTAINED:	QUANTITY RECOVERED:	QUANTITY DISPOSED:
Unknown ☐ gallons ☐ pounds	None ☐ gallons ☐ pounds	Unknown ☐ gallons ☐ pounds	Apx 50 cy ☐ gallons ☐ pounds

	POTENTIAL RESPONSIBLE PARTY:	OTHER PRP, IF ANY:	VESSEL NAME:
Name/Business:	K&L Distributors		
Mailing Address:	945 Elizabeth Street		VESSEL NUMBER:
	Fairbanks, Ak 99709		
Contact Name:			> 400 GROSS TON VESSEL:
Contact Number:	(907) 452-5271		☐ Yes ☐ No

SOURCE OF SPILL:
Leaky former 1,000-gallon heating oil UST

CAUSE OF SPILL: ☒ Under Investigation

UST corrosion

CAUSE CLASSIFICATION:
- ☐ Accident
- ☐ Human Factors
- ☒ Structural/Mechanical
- ☐ Other

CLEANUP ACTIONS:
UST was taken out of service some time in the past and abandonded in place. When the 1,000-gallon UST was removed, petroleum contaminated soils were encountered. at apx 7.5 ft bgs. UST had obvious corrosion with visible holes in sidewalls of tank. Apx 50 cy of contaminated soils were removed and stockpiled on-site pending disposal.

DISPOSAL METHODS AND LOCATION:
Soils will be disposed at OIT pending ADEC approval

AFFECTED AREA SIZE:	SURFACE TYPE: *(gravel, asphalt, name of river etc.)*	RESOURCES AFFECTED/THREATENED: *(Water sources, wildlife, wells, etc.)*
Apx 130 sf	gravel	Potentially groundwater

COMMENTS:

ADEC USE ONLY

SPILL NAME:	NAME OF DEC STAFF RESPONDING:	C-PLAN MGR NOTIFIED?
		☐ Yes ☐ No

DEC RESPONSE:	CASELOAD CODE:	CLEANUP CLOSURE ACTION:
☐ Phone follow-up ☐ Field visit ☐ Took Report	☐ First and Final ☐ Open/No LC ☐ LC Assigned	☐ NFA ☐ Monitoring ☐ Transferred to CS or STP

COMMENTS:

Status of Case: ☐ **Open** ☐ **Closed** **DATE CASE CLOSED:**

REPORT PREPARED BY:	DATE:

Appendix E:

Waste Disposal Documentation

CERTIFICATE OF WEIGHT

Contracting Capabilities for Organic Incineration Technologies

OIT, Inc.
P.O. Box 55878
North Pole, Alaska 99705
(907) 488-4899 Fax: (907) 488-4823

10192

Shipper Inland Petroservices Contract 13-030IP
Carrier [redacted] " " Commodity Cont. Soil
W/B No. _____ Truck No. 1-12
Orgin K & L Destination OIT
Driver ON ☐ OFF ☐

K/L
DIST

57220

30580

Driver's Signature: [signature]

Public Scale Certified and Inspected by Alaska Department of Commerce, Division of Weights & Measures

CERTIFICATE OF WEIGHT

Contracting Capabilities for Organic Incineration Technologies

OIT, Inc.
P.O. Box 55878
North Pole, Alaska 99705
(907) 488-4899 Fax: (907) 488-4823

10194

Shipper Inland Petroservices Contract 13-030IP
Carrier " " Commodity Cont. Soil
W/B No. _____ Truck No. 1-12
Orgin K & L Destination OIT
Driver ON ☐ OFF ☐

67220

30420

Driver's Signature: _____

Public Scale Certified and Inspected by Alaska Department of Commerce, Division of Weights & Measures

CERTIFICATE OF WEIGHT

Contracting Capabilities for Organic Incineration Technologies

OIT, Inc.
P.O. Box 55878
North Pole, Alaska 99705
(907) 488-4899 Fax: (907) 488-4823

10190

Shipper _____ Contract 13-030IP

Carrier _____ Commodity Cont. Soil

W/B No. _____ Truck No. 1-12

Orgin _____ Destination OIT

Driver ON ☐ OFF ☐

54240

30660

Driver's Signature: _____

Public Scale Certified and Inspected by Alaska Department of Commerce, Division of Weights & Measures

Clean

CERTIFICATE OF WEIGHT

Contracting Capabilities for Organic Incineration Technologies

OIT, Inc.
P.O. Box 55878
North Pole, Alaska 99705
(907) 488-4899 Fax: (907) 488-4823

10195

Shipper OIT
Carrier Inland Petro Services
W/B No.
Orgin OIT
Driver ON ☐ OFF ☐

Contract
Commodity Clean Soil
Truck No. 1-12
Destination K dL

51900

30420

Driver's Signature:

Public Scale Certified and Inspected by Alaska Department of Commerce, Division of Weights & Measures

Clean

CERTIFICATE OF WEIGHT

Contracting Capabilities for Organic Incineration Technologies

OIT, Inc.
P.O. Box 55878
North Pole, Alaska 99705
(907) 488-4899 Fax: (907) 488-4823

10193

Shipper ~~Inland Petroleum~~ OIT Contract _____

Carrier Inland Petroleum Commodity Clean Soil

W/B No. _____ Truck No. 1-12

Orgin OIT Destination K & L

Driver ON ☐ OFF ☐

K+L DIST

50620

30620

Driver's Signature: _____

Public Scale Certified and Inspected by Alaska Department of Commerce, Division of Weights & Measures