REMOVAL ACTION REPORT
NIKISKI COMPLETIONS FACILITY
NIKISKI, ALASKA

ADEC FILE NUMBER 2323.38.055
ADEC UST FACILITY ID 3590; UST ID 001

OCTOBER 24, 2014

Prepared For:

Baker Hughes Oilfield Operations, Inc.
795 E 94th Ave
Anchorage, AK 99515

Prepared By:

Ahtna Engineering Services, LLC
110 West 38th Avenue, Suite 200A
Anchorage, Alaska 99503

(This Page Intentionally Left Blank)

APPROVAL PAGE

This report was prepared by Ahtna Engineering Services, LLC for removal activities conducted at the Baker Hughes Oilfield Operations, Inc. Nikiski Completions Facility located in Nikiski, Alaska. The preparation of this report, and all sampling activities described within, were conducted by Daniel Frank, a qualified person, as required by Alaska Administrative Code, Title 18, Chapters 75 and 78.

The following people have reviewed and approved this report.

Report prepared by:

Daniel Frank
Ahtna Engineering Services, LLC
Project Manager

Report reviewed by:

Ashley Olson
Ahtna Environmental, Inc.
Project Quality Control Officer

Analytical Data Reviewed by:

(This Page Intentionally Left Blank)

TABLE OF CONTENTS

APPROVAL PAGE I
ACRONYMS AND ABBREVIATIONS V
EXECUTIVE SUMMARY VII
1.0 INTRODUCTION 1
2.0 SITE BACKGROUND 3
2.1 Site Owner and Operator 3
2.2 Site Location 3
2.3 Site Operations and History 3
2.4 Previous Site Investigations 3
2.4.1 ADEC Site File No. 2323.38.019 3
2.4.2 Baker Hughes Groundwater Sampling – 2012/2013 4
2.4.3 2014 Initial Site Characterization 5
2.4.4 Pipe Locate and Integrity Investigation 6
2.4.5 August 2014 Groundwater Monitoring 6
2.5 Site Geology and Hydrology 7
2.6 Project Objectives 7
3.0 REGULATORY STANDARDS AND CLEANUP CRITERIA 9
3.1 Regulatory Standards 9
3.2 Contaminants of Concern 9
3.3 Cleanup Criteria 10
3.3.1 EPA Injection Wells 10
3.3.2 ADEC UST Removal 10
3.4 Disposal Characterization 10
3.5 Cleanup Concentrations 11
4.0 FIELD ACTIVITIES AND ANALYTICAL RESULTS 13
4.1 Analytical Methods 13
4.2 Phase I Field Activities 14
4.3 Phase II Field Activities 17
5.0 QUALITY ASSURANCE/QUALITY CONTROL 21
5.1 Sample Handling 22
5.2 Holding Time Compliance 22
5.3 Field QA/QC 23
5.4 Trip Blanks 23
5.5 Field Duplicates 23
5.6 Laboratory Control Samples & Laboratory Control Sample Duplicates 23
5.7 Method Reporting Limits 24
5.8 Laboratory Blanks 24
5.9 Matrix Spike/Matrix Spike Duplicate Results 24
5.10 System Monitoring Compounds 24
5.11 Analytical Methods 24
5.11.1 Precision and Accuracy 24
5.11.2 Completeness 25
5.11.3 Representativeness 25
5.11.4 Comparability 25

5.12 Data Summary 25
6.0 CONCEPTUAL SITE MODEL 27
6.1.1 Source 27
6.1.2 Impacted Media 27
6.1.3 Transport Mechanisms 27
6.1.4 Exposure Media 27
6.1.5 Human Health Exposure Routes and Receptors 27
7.0 CONCLUSIONS AND RECOMMENDATIONS 29
7.1 Conclusions 29
7.2 Recommendations 29
8.0 REFERENCES 31

TABLES

Table 1 Sample Collection Summary
Table 2 Removal Phase I Detections Summary
Table 3: Removal Phase II Detections Summary
Table 4: Removal Phase I Analytical Results Summary
Table 5: Removal Phase II Analytical Results Summary

FIGURES

Figure 1 Site Vicinity Map
Figure 2 Site Location Map
Figure 3 Site Detail
Figure 4 Removal Phase I Sample Locations & Results Summary
Figure 5 Removal Phase II Sample Locations & Results Summary

APPENDICES

Appendix A Field Notes
Appendix B Photographic Log
Appendix C ADEC UST Program Forms
Appendix D Laboratory Analytical Results; ADEC Data Review Checklists
Appendix E ADEC Conceptual Site Model Human Health Scoping Form and Graphic

ACRONYMS AND ABBREVIATIONS

% .....Percent
1,1,1-TCA 1,1,1-Trichloroethane
AAC .....Alaska Administrative Code
ADEC.....Alaska Department of Environmental Conservation
Ahtna.....Ahtna Engineering Services, LLC
Baker Hughes....Baker Hughes Oilfield Operations, Inc.
bgs .....Below ground surface
°C .....Degrees Celsius
CoC .....Chain of custody
Color-Tec .....AQR Color-Tec®
CSM .....Conceptual site model
CSP .....ADEC's Contaminated Sites Program
CY .....Cubic yards
DCA 1,2-dichloroethane
DEH .....ADEC's Division of Environmental Health
DQO.....Data quality objective
DRO .....Diesel-range organics
DWP.....ADEC's Drinking Water Program
EDB.....Ethylene dibromide
EDC.....Ethylene dichloride
Emerald .....Emerald Alaska, Inc.
EPA .....United States Environmental Protection Agency
ESC .....ESC Lab Science, Inc.
GRO .....Gasoline-range organics
HCI.....Hart Crowser, Inc.
HPLC .....High Performance Liquid Chromatography
Kraxberger .....Kraxberger Drilling, Inc.
LCS/LCSD.....Laboratory control sample/laboratory control sample duplicate
MCL.....Maximum containment level
mg/kg .....Milligrams per kilogram
mg/L.....Milligrams per liter
mL .....milliliter
MS/MSD.....Matrix spike/matrix spike duplicate
ND.....Not detected
OnSite .....OnSite Environmental, Inc.
PCBs .....Polychlorinated Biphenyls
PCE .....Tetrachloroethylene
PID .....Photo-ionization detector
PQL.....Practical quantitation limit
Prism .....Prism Design and Construction, LLC
QA..... Quality Assurance
QC .....Quality Control
RCRA.....Resource Conservation and Recovery Act

RPD.....Relative percent difference
RRO .....Residual-range organics
SB.....Soil Boring
SDG.....Sample delivery group
SGS .....SGS Environmental Services
SVOC.....Semi-volatile organic compounds
SW.....Solid Waste
SWL .....Static water level
TCE.....Trichloroethene
TCLP.....Toxicity Characteristic Leaching Procedure
Tri-State .....Tri-State Oil Tool Industries, Inc.
UST.....Underground storage tank
VOC .....Volatile organic compounds

EXECUTIVE SUMMARY

This Removal Action Report documents removal activities conducted by Ahtna Engineering Services, LLC (Ahtna) at the Baker Hughes Oilfield Operations, Inc. (Baker Hughes) Nikiski Completions Facility located in Nikiski, Alaska. Removal activities were conducted during two separate field events; one between August 5 and August 7, 2014, and one between August 19 and August 21, 2014.

The overall objective of the work was to remove facility infrastructure that could be a current or former source of documented trichloroethene (TCE) impact to groundwater. Removal activities were conducted in two separate but closely timed phases, with initial work focused on the removal of exterior underground piping, removal of an underground steel tank discovered by a pipe locate effort, and removal of interior building sumps. Excavation work during the initial phase resulted in the discovery of a series of concrete-cased injection wells, and the determination that the underground steel tank was an oil/water separator that had been installed as part of a leach field style injection system. The second phase of the work focused on removal of both injection well systems. The concrete-cased well injection system and the leach field style injection system are regulated by the United States Environmental Protection Agency (EPA) as Class V injection wells. Alaska Department of Environmental Conservation (ADEC) determined that the underground steel oil/water separator tank is regulated by ADEC under the ADEC's Underground Storage Tank (UST) program. Residual impact found is regulated by ADEC under the ADEC's Contaminate Sites program.

The two accessible concrete-cased and open-bottom four-foot diameter injection wells and all associated piping were successfully removed. A total of approximately 10 cubic yards of soil was removed from below the two concrete-cased injection wells and placed into a lined and covered stockpile. A third concrete-cased injection well, located west of the two removed injection wells, is located under the waste water room portion of the Completions Building foundation and was not removed. This third injection well was abandoned by pouring 1.5 cubic yards of concrete slurry though an overflow pipe that had previously connected this well to the other two previously removed injection wells.

As planned, the 1,800 gallon steel oil/water separator/UST and all associated piping between the Completions Building and the steel oil/water separator/UST were removed. Prism Design and Construction, LLC provided ADEC certified UST worker removal oversight of the steel oil/water separator/UST and accepted the tank for recycling. The tank contents, previously characterized by laboratory analysis, were removed and disposed of by Emerald Alaska, Inc. Approximately thirty feet of the drain piping exiting the steel oil/water separator/UST toward the north was exposed and removed. The drain pipe was laid atop drainage rock. The full extent of the drainage system located north of the steel oil/water separator/UST remains unknown.

In compliance with EPA Class V injection well removal or abandonment guidance, a total of three soil samples were collected. One soil sample was collected from below each of the two removed concrete-cased injection wells and one sample was collected 10 feet north of the north end of the steel oil/water separator/UST from below the removed drainage piping. Laboratory analytical results for sample collected at the western injection well point of injection indicated that no impact remains at this location. Laboratory analytical results for the sample collected below the eastern injection well indicated that diesel-range organics (DRO) and chromium

impacted soil remain in soil at this location. The perforated drainage piping located north of the oil/water separator/UST is considered an injection system. One sample was collected below the piping, 10-feet north of the north end of the former tank location, to document residual impact at this point of injection. Laboratory analytical results indicated DRO, tetrachloroethylene (PCE), barium, cadmium, chromium, and lead at concentrations greater than the ADEC Method Two soil cleanup levels remain in place at this location.

In compliance with ADEC's UST regulations, two soil samples were collected from below the removed oil/water separator/UST, and one soil sample was collected from below the removed piping between the Completions Building and the oil/water separator/UST. Additionally, field screening was conducted along the piping located between the Completions Building and the oil/water separator/UST to identify the location for sample collect. Because of the excavation depth and loose nature of the surrounding soil, additional field screening was not conducted within the removed oil/water separator/UST foot print area. Laboratory analytical indicated no impact evident below the removed piping. DRO and chromium impact was detected below the south end of the former oil/water separator/UST location at concentrations greater than the respective ADEC Method Two soil cleanup levels.

1.0 INTRODUCTION

This Removal Action Report presents the results of soil sampling activities associated with two removal actions conducted by Ahtna Engineering Services, LLC (Ahtna) in August 2014 at the Baker Hughes Oilfield Operations, Inc. (Baker Hughes) Nikiski Completions Facility. Removal activities were conducted in accordance with work plan addendums dated August 1, 2014, and August 15, 2014, as approved by the Alaska Department of Environmental Conservation (ADEC).

Work was performed in general conformance with Title 18, Chapter 75 of the Alaska Administrative Code (18 AAC 75) entitled *Oil and Other Hazardous Substances Pollution Control* (ADEC 2012), Alaska's Underground Storage Tank Regulations (18 AAC 78), ADEC's *Draft Field Sampling Guidance* (ADEC 2010a), ADEC's *Underground Storage Tanks Procedures Manual* (ADEC 2002), and United States Environmental Protection Agency (EPA) guidance: *Guidance for Underground Injection Control Class V Well Closure.*

Site characterization work conducted in May 2014, which included the advancement of six soil borings to 45 feet below ground surface (bgs) and the completion of three soil borings as permanent groundwater monitoring wells, indicated the presence of a possible source of trichloroethene (TCE) at the site (Ahtna 2014a). The objective of the removal action presented in this report was to eliminate abandoned subterranean infrastructure as a source of potential chlorinated hydrocarbon impact to groundwater at the site.

Subterranean infrastructure at the site included two Class V injection well systems located on the north side of the Completions Building. The shallower injection well system was comprised of three 4-foot diameter concrete-cased wells and associated piping. The top of the shallowest well was located approximately three feet bgs and had an overflow pipe descending to the second injection well, with a well top located approximately four and a half feet bgs and to the west. An overflow pipe exited the second injection well system, toward the west, indicating a third injection well system existed below the waste water room portion of the Completions building.

The second injection well system was comprised of piping leading to an underground steel oil/water separator followed by an unknown length of effluent perforated drain piping extending to the north. The oil/water separator top was located approximately six feet bgs, and measured 12 feet long with a 5-foot diameters (total volume of approximately 1,800 gallons).

Both injection well systems were found to be abandoned and not connected to the paint shop/washbay sump. Piping laid exterior to the Completions Building was found to connect the paint shop/washbay sump to the sump in the waste water room (waste water room sump). The waste water room sump liquids were routinely pumped into a 1,000-gallon poly tank and eventually disposed by Emerald Alaska, Inc. (Emerald).

The overall objective for this project was to remove infrastructure that could be a source of chlorinated hydrocarbon impact to groundwater at the site. Specific activities conducted to achieve the project objectives included:

- Removal of a 1,800-gallon steel underground oil/water separator tank regulated by ADEC as an underground storage tank (UST).
- Removal of piping leading to the steel tank from the Completions Building.
- Evaluation of perforated drain piping leading out of the steel tank towards the north.
- Removal of two concrete-cased injections wells and in-place abandonment of a third injection well.
- Removal of the Completions Building waste water room sump.
- Removal of piping located outside of the Completions Building connecting the interior paint shop/washbay sump to the waste water room sump.
- Abandon, by grouting-in, all interior floor drains.
- Evaluate any connection between the injection systems, tool shop portion of the Completion Building floor drains and sumps with the office portion septic system.
- Cap the excavation area above the former concrete injection wells with asphalt.

This report details removal work and analytical results from soil samples collected after each removal phase to document site conditions. Removal work was conducted during two separate field events, one between August 5 and August 7, 2014 (Phase I), and one between August 19 and August 21, 2014 (Phase II).

Mr. Daniel Frank, an ADEC-qualified person/qualified environmental professional as defined in 18 AAC 75. 990 (100), and 18 AAC 78.995 (118), conducted the sample collection activities for Ahtna. Ms. Emily Freitas evaluated the analytical data. The removal of the steel oil/water separator tank regulated by ADEC as an UST was overseen by Mr. Randy Hunter, UST Worker License No. 612, with Prism Design and Construction, LLC (Prism).

This document outlines the technical and analytical approaches employed during fieldwork and characterizes actual contaminants detected. This document includes site background information (Section 2); a summary of applicable regulatory standards and cleanup criteria (Section 3), a description of field investigation activities analytical results (Section 4); a discussion of analytical data quality (Section 5); a conceptual site model (CSM; Section 6); conclusions and recommendations (Section 7); and references (Section 8).

2.0 SITE BACKGROUND

2.1 Site Owner and Operator

Site Owner/Operator:

Baker Hughes Oilfield Operations, Inc.
795 East 94th Avenue
Anchorage, Alaska 99515
Telephone: (907) 267-3429

Site Location:

Baker Tool Nikiski Completions Facility
51950 Dolores Drive
Nikiski, Alaska 99611
Telephone: (907) 776-8131

2.2 Site Location

The Baker Hughes Nikiski Completions Facility is located at 51950 Dolores Drive, a.k.a. Sand Dollar Drive; formerly Old Nikishika Beach Road, Nikiski, Alaska (Figure 1 and 2). The 5-acre Baker Hughes Nikiski Completions Facility is located within United States Public Land Survey Section 1, Township 7 North (N), Range 12 West (W), Seward Meridian; 60°43'57.75"N latitude and 151°18'2.36"W longitude.

2.3 Site Operations and History

Baker Hughes acquired the tool shop site from Tri-State Oil Tool Industries, Inc. (Tri-State) in October 1987. Tri-State acquired the property in 1971 from Oil Well Services Company, Inc. The site is a tool shop used to perform maintenance work on oil and gas down-hole well completion tools. The shop area is comprised of several lathes, tool storage racks, and a paint shop with wash bay.

2.4 Previous Site Investigations

2.4.1 ADEC Site File No. 2323.38.019

The Baker Hughes Nikiski Completions Facility is located approximately 800 feet northeast of a known chlorinated hydrocarbon source area related to a former drycleaner.

ADEC performed site characterization activities at the suspected former drycleaner site in 1989, and assigned ADEC Contaminated Site File No. 2323.38.019 to the site. Vadose zone soils at the suspected former drycleaner are impacted by chlorinated hydrocarbons at concentrations exceeding State of Alaska soil cleanup levels. The suspected former drycleaner site is also a known source of both of 1,1,1-trichloroethane (1,1,1-TCA) and PCE impact to groundwater at concentrations exceeding State of Alaska groundwater cleanup levels.

The investigation activities directed by ADEC in 1989, at the suspected former drycleaner, included the installation of sixteen soil borings to various depths ranging from 15 feet bgs to 90 feet bgs (see Figure 3 for ADEC boring and well locations; locations are estimated as no survey data exists for the locations). Four of the soil borings were completed as monitoring wells. All soil boring were field-screened at 5-foot depth intervals using a field-based gas chromatograph. Select soil samples were submitted for off-site halogenated hydrocarbon analysis by USEPA Method 8010 (Hart Crowser, Inc. [HCI] 1989).

Three soil borings were installed at the Baker Hughes Nikiski Completions Facility by ADEC in 1989: TH-3, P-7, and P-8 (Figure 3). Borings TH-3 and P-7 were located in an area where waste (scrap metal) generated during operations by Tri-State was allegedly buried. Boring P-8 was located in the approximate alleged vicinity of a Tri-State leach field. Laboratory analytical results for subsurface soil samples collected on Baker Hughes property at TH-3, P-7, and P-8 were all reported as non-detect (HCI 1989). Soil screening and sampling extended to 15 feet bgs.

Drinking water samples were collected at the Baker Hughes Nikiski Completions Facility as part of the 1989 investigation. Historically, drinking water at the Baker Hughes Nikiski Completions Facility was provided by connection to the McGahan water system. In 1988, PCE and 1,1,1-TCA were detected in water at various taps connected to the McGahan water system. At the Baker Hughes Completions site (identified in 1988 as Tri-State Oil Tools), tap water contained PCE and 1,1,1-TCA at concentrations of 0.0247 milligrams per liter (mg/L) and 0.00982 mg/L, respectively (HCI 1989). The 1989 detections of PCE and 1,1,1-TCA in water samples collected from tap connections to the McGahan water system is consistent with the dissolved-phase plume in groundwater observed at other groundwater monitoring wells and drinking water wells associated with the former dry cleaner site investigations conducted by ADEC.

Although impact to groundwater by the suspected former drycleaner site has not been fully delineated nor remediated, ADEC recently closed the site and decommissioned two of the three existing groundwater monitoring wells associated with ADEC File No. 2323.38.019.

2.4.2 Baker Hughes Groundwater Sampling – 2012/2013

In 2012, TCE was detected in a groundwater sample collected from the BHI Well installed at the Nikiski Completions Facility sometime after 1989. The well is located on the south side of the Completions Building. Water samples were collected by ADEC's Contaminated Sites Program (CSP) in support of an ADEC Division of Environmental Health (DEH), Drinking Water Program (DWP) request. A second set of groundwater samples were collected by ADEC CSP to confirm the TCE detection, with the analytical results indicating TCE present at a concentration greater than State of Alaska groundwater cleanup levels (18 AAC 75, Table C), and EPA maximum contaminant levels (MCLs). Similarly, 1,1,1-TCA was detected during both sampling events, however at concentrations less than the established cleanup levels. PCE was not detected in any water sample (Weston 2013).

Three subsequent sampling events, conducted in 2013 by Baker Hughes, indicated the continued presence of TCE in groundwater, but at concentrations less than the ADEC Table C groundwater cleanup level.

Because of the presence of 1,1,1-TCA and TCE in the water samples collected by ADEC in 2012, the ADEC DEH DWP required Baker Hughes to post a public health advisory at all drinking water faucets in the Nikiski Completions Facility. This well is currently not used and the facility received water by connection to the McGahan water system.

Based on the detections of 1,1,1-TCA and TCE in groundwater at the site, ADEC CSP requested Baker Hughes to investigate for the potential source of impact.

2.4.3 2014 Initial Site Characterization

Site characterization activities were conducted between May 12 and May 16, 2014. The objective of characterization activities was to determine whether TCE detected in water samples from the groundwater well located at the Nikiski Completions Facility resulted from site activities. The site characterization focused on two potential sources of TCE impact: the septic leach field; and, building drains and corresponding sumps. Groundwater at the site is approximately 40 feet bgs. Site characterization activities included the advancing of six soil borings to groundwater and the completion of three soil borings as permanent groundwater monitoring wells (locations are presented on Figure 3). Additionally, sump water was sampled for laboratory analysis and a hydrostatic test was conducted on both sumps (waste room sump and paint shop/washbay sump).

Soil samples were field-screened for halogenated hydrocarbons, in 5-foot intervals, from the surface to 45 bgs at each of the six soil borings using AQR Color-Tec® (Color-Tec) field-screening kits with Gastec® No. 133LL PCE detector tubes. In addition to field-screening, soil samples were collected for off-site laboratory analysis at each soil boring from 0 to 5 feet bgs, 15 to 20 feet bgs, and at the groundwater interface, located at approximately 40 to 45 feet bgs.

Groundwater samples were collected from each of the three newly installed permanent groundwater monitoring wells. All groundwater and soil samples collected for off-site laboratory testing were submitted for TCE, PCE, and 1,1,1-TCA analysis.

All soil field-screening results were reported as non-detect. The project laboratory reported detectable concentrations of TCE in all soil samples collected from the capillary fringe/groundwater interface (35 to 45 feet bgs) in each boring, and at very low concentrations in shallower soil (15 to 20 feet bgs) at two locations (SB-04 and SB-05). At three of the six boring locations (SB-03, SB-04, and SB-05), the samples collected within the capillary fringe contained TCE at a concentration slightly greater than the ADEC soil cleanup value of 0.020 milligrams per kilogram (mg/kg). No detections of TCE, PCE, or 1,1,1-TCA were reported for shallower soil samples, and PCE and 1,1,1-TCA were not detected in any of the soil samples, regardless of sample depth.

The low concentrations of TCE reported in samples at or near the water table may be indicative of contaminant sorption of residual TCE to soil in the capillary fringe. The concentrations of TCE in shallower soil at 10 to 15 reported at lower concentrations than those found in the capillary fringe feet bgs are possibly due to the vapor from groundwater condensing in shallower soil.

Analytical results for groundwater samples indicated detectable concentrations of 1,1,1-TCA and TCE present at all three groundwater monitoring wells, with TCE reported at a concentration slightly greater than the ADEC groundwater cleanup level for TCE of 0.005 mg/L. Groundwater elevations indicated two potential gradients. One gradient calculated using groundwater wells located within the property boundary indicated flow direction toward the northwest. A second gradient, when adding the ADEC well located southwest of the site to the calculation, indicated flow to the southwest. Insufficient evidence exists to determine if groundwater gradient is affected by McGahan Utilities groundwater withdrawals.

The analysis of the sump water for volatile organic compounds (VOCs) did not indicate the presence of TCE, PCE, or 1,1,1-TCA. The hydrostatic test indicated the sump piping is not isolated; however it is unknown where the piping terminates. A second hydrostatic test conducted after the removal of all influent and effluent piping indicated the sumps are isolated and not a source of impact.

Site characterization results were considered indicative of a release and impact to vadose zone soils, with the source of TCE of impact to groundwater at the site unknown (Ahtna 2014a).

2.4.4 Pipe Locate and Integrity Investigation

Baker Hughes performed a pipe investigation on July 23, 2014 with the goal of determining the location and integrity of floor drain piping, sump piping, and septic system piping. The investigation findings determined the following:

- Floor drain piping in the tool shop portion of the building is not connected to the septic system; the floor drains enter piping that terminates at the paint shop washbay sump.
- A cleanout located exterior to and on the north side of the Completions Building was found to lead to an underground steel tank of unknown size.

Based on these findings, Baker Hughes initiated work to remove the steel tank, grout-in the shop floor drains, and remove the waste water room sump. The paint shop/washbay sump was also scheduled for removal and replacement.

2.4.5 August 2014 Groundwater Monitoring

Groundwater monitoring was conducted on August 5, 2014. Monitoring activities included the collection of groundwater samples at each of the site groundwater monitoring wells installed in May 2014 (BHI-MW-01 through BHI-MW-03) and measuring the groundwater elevation at each of the three site wells, the abandoned BHI drinking water well, and ADEC's MW-01 groundwater monitoring well located southwest of the site. Groundwater samples were collected using dedicated stainless steel Solinst® Model 407 bladder pumps with Teflon® bladders installed during the May 2014 site characterization work. Groundwater samples were analyzed for the full list of VOCs by EPA Solid Waste (SW) method 8260.

The calculated groundwater gradient was to the northeast in August 2014. Groundwater was found to be about a half foot lower in August than in May. Groundwater at ADEC MW-1 was found to be about two tenths of a foot higher than the groundwater elevation at the site.

TCE and 1,1,1-TCA were detected in samples collected from all three groundwater monitoring wells. TCE was reported at a concentration (0.034 milligrams pmg/L) greater than the ADEC Table C groundwater cleanup level at BHI-MW-01. TCE was also detected at BHI-MW-02 and BHI-MW-03, but at concentrations less than the ADEC Table C groundwater cleanup level.

Although detected in all three locations, 1,1,1-TCA was not detected at a concentration greater than the associated ADEC Table C groundwater cleanup. PCE was not detected in any of the groundwater samples.

Of the 68 volatile compounds analyzed for at each location, cis-1,2-dichloroethene and 1,1,2-trichloroethane were the only additional compounds detected, and only at BHI-MW-01. Cis-1,2-dichloroethene, a daughter product of both TCE and PCE, was detected at a concentration of 0.0011 mg/L and 1,1,2-trichloroethane was detected at a concentration of 0.00045 mg/L (Ahtna 2014b). The reported concentrations for cis-1,2-dichloroethene and 1,1,2-trichloroethane are less than associated cleanup level concentrations.

2.5 Site Geology and Hydrology

A well log for the Baker Hughes Nikiski Completions Facility groundwater well (BHI Well) is not available, nor is information regarding the installation date or construction details. The well was gauged by Kraxberger Drilling, Inc. (Kraxberger) in October 2012. Kraxberger reported the total depth of the well as 62 feet bgs, with a static water level (SWL) of 40 feet bgs. The well has a two-foot riser, making the total casing length 64 feet. The well is located on the south side of the Nikiski Completions Facility building. The well screen interval details are unknown.

Soil logs from the borings install in May 2014 characterized the soil at the site as generally consisting of well-graded sandy gravel to gravelly sand with intermittent layers of poorly graded sand. Soil type appeared nearly uniform between borings and at all depths. One to two foot thick elastic silt layers were observed between 6 and 13 feet bgs at borings SB-04 and SB-06.

Previous drilling activities in the area indicated a confining layer of interbedded sand and silty clay, thin-bedded to laminated, exists at approximately 90 feet bgs.

2.6 Project Objectives

The overall objective for this project was to remove infrastructure that could be a source of chlorinated hydrocarbon impact to groundwater at the site in compliance with ADEC and applicable EPA regulations and guidance documents. Items initially identified for removal prior to the Phase I removal effort included:

- Paint shop/washbay sump;
- Waste room sump;
- Exterior piping; and,
- Underground steel tank found during the Pipe Locate and Integrity Investigation and located north of the Completions Building paint shop/washbay area.

Upon completion of the initial Phase I removal work, conducted between August 5 and August 7, 2014, additional tasks were identified for performance in a second removal phase (Phase II):

- In-place abandonment or removal of two 4-foot diameter concrete-cased injection wells.
- In-place abandonment of a third 4-foot diameter concrete-cased injection well located below the waste water room of the Completions Building.
- Exploratory excavation extending up to 30 feet north from the north end of the steel tank along perforated drain piping.

Removal of the Completions Building paint shop/washbay area sump was, and remains, planned to be conducted as a separate removal event.

3.0 REGULATORY STANDARDS AND CLEANUP CRITERIA

3.1 Regulatory Standards

Project work was conducted in compliance with State of Alaska regulations pertaining to contaminated sites and USTs as well as EPA guidance for the closure of Class V injection wells.

The underground infrastructure removed included two, previously undocumented, injection well systems. Injection wells are regulated in Alaska by the EPA.

Previously identified chlorinated hydrocarbon impact to groundwater is regulated by ADEC's contaminated sites regulations found in 18 AAC 75, Article 3 entitled *Oil and Hazardous Substance Pollution Control Regulations, Discharge Reporting, Cleanup, and Disposal of Oil and Other Hazardous Substances* (ADEC 2012).

ADEC further determined that the State of Alaska's UST regulations found in 18 AAC 78, entitled *Underground Storage Tank* (ADEC 2013) applied to the steel oil/water separator portion of the leach field injection well system because of the presence of petroleum hydrocarbons in a sample collected from soil within the tank.

3.2 Contaminants of Concern

For removal work associated with both injections well systems, the EPA *Guidance for Underground Injection Control Class V Well Closures*, recommended sample collection and analysis for:

- VOCs;
- Semi-volatile organic compounds (SVOCs); and,
- Eight Resource Conservation and Recovery Act (RCRA) metals. (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver)

Based on Appendix F of the ADEC *Draft Field Sampling Guidance* (ADEC 2010a), and Table 2B of the *Underground Storage Tanks Procedures Manual* (ADEC 2002), contaminants of potential concern for a UST of unknown contents includes:

- Gasoline-range organics (GRO);
- Diesel-range organics (DRO);
- Residual-range organics (RRO);
- VOCs;
- SVOCs;
- RCRA eight metals plus nickel and vanadium;

- Polychlorinated biphenyls (PCBs);
- Ethylene dibromide (EDB); and,
- 1,2-dichloroethane (DCA; a.k.a. ethylene dichloride [EDC]).

3.3 Cleanup Criteria

3.3.1 EPA Injection Wells

EPA Class V injection well decommissioning by removal requires the removal of all contaminated liquids, sludge, and soil be removed from in and around the Class V injection well until visibly clean soil is reached, or structural integrity of the excavation or buildings or other significant structures near the excavation, may be compromised. Analytical evidence of remaining impact is gathered by the collection of samples at the point of injection (injection point). For in-place abandonment of injection wells, EPA defers to ADEC's well abandonment procedures. ADEC well abandonment requires the annulus of the well be filled with a material that is less permeable than the surrounding soil.

Prior to conducting the removal work, EPA was provided with completed *Class V Well Pre-Closure Notification* forms; one for the concrete-cased injection well system and one for the leach field with steel oil/water tank (UST) system.

3.3.2 ADEC UST Removal

ADEC UST removal work requires removal oversight by an ADEC certified UST worker. Additionally, confirmation sampling rates along pipe runs and the excavation are proscribed in ADEC's 2002 *Underground Storage Tanks Procedures Manual*, and restated with minor variance in ADEC's May 2010 *Draft Field Sampling Guidance.* At a minimum, ADEC requires collection of two samples from below a removed UST, and one sample along a pipe run, with the sample location determined based on field screening. Field screening along a piping run is conducted at least every 10 linear feet and at all piping joints, elbows, or connectors. If any contamination or staining is encountered, the soil is segregated and stockpiled, then the excavation is closed with clean soil.

Prior to the UST removal, ADEC was provided with a completed ADEC *Intent to Close* form. Baker Hughes was in turn provided with an ADEC completed *Authority to Proceed* form by ADEC. A completed ADEC *Notice of Post Closure* form was provided to ADEC within 30 days of removing the tank. This report fulfills the 60-day requirement for delivery of a *Site Assessment and Release Investigation Report*. The required ADEC *Site Assessment and Release Investigation Summary* form is provided in Appendix C.

3.4 Disposal Characterization

Excavated soils with indications of impact were segregated and sampled for contaminants of concern. Soil within the steel oil/water separator tank was also sampled prior to removal and off-site disposal. Concrete from the removed sump and the removed injection well casings was also

sampled. For disposal determination, samples were digested following the toxicity characteristic leaching procedure (TCLP) and the resulting extract was analyzed for contaminants of concern.

3.5 Cleanup Concentrations

Analytical results presented in this report were compared to relevant State of Alaska cleanup criteria. Cleanup standards are defined in 18 AAC 75.30(c)(2), entitled *Oil and Hazardous Substance Pollution Control Regulations, Discharge Reporting, Cleanup, and Disposal of Oil and Other Hazardous Substances*. Groundwater results for samples collected in May and August 2014 were compared to 18 AAC 75.345, Table C Groundwater Cleanup Levels. Soil sample analytical results were compared to ADEC Method Two soil cleanup levels found in 18 AAC 75.341, Table B1.

(This Page Intentionally Left Blank)

4.0 FIELD ACTIVITIES AND ANALYTICAL RESULTS

Field activities were conducted at the Baker Hughes Nikiski Completions Facility during two separate field events: Phase I of the removal effort was conducted between August 5 and August 7, 2014, and Phase II was conducted between August 19 and August 21, 2014.

All field and sampling procedures were performed in accordance with the approved draft work plan dated April 25, 2014 (Ahtna 2014c), and work plan addendums dated August 1, 2014 (Ahtna 2014d), and August 15, 2014 (Ahtna 2014e).

No deviations from the work plans were noted.

Field notes and field generated forms are included as Appendix A. A Photographic Log is included as Appendix B. Laboratory Analytical Results and ADEC Data Review Checklists are included as Appendix D. \

A summary of samples collected and analyses performed is presented in Table 1. Phase I excavation confirmation sample analytical results for contaminates of concern detected above ADEC's Method Two soil cleanup levels are presented in Table 2. Phase II excavation confirmation sample analytical results for analytes detected above ADEC's Method Two soil cleanup levels are presented in Table 3. Table 4 presents a summary waste characterization sample analytical results for both phases. Tables 5 and Table 6 present a summary of all analytical data for Phase I and Phase II characterization samples, respectively.

Soil samples for volatile analysis were submitted to the ADEC-approved project laboratory, OnSite Environmental, Inc. (OnSite) located in Redmond, Washington. Semi-volatile and non-volatile analysis as well as TCLP analyses for soil samples was conducted by ESC Lab Science, Inc. in Mt. Juliet, Tennessee. Concrete samples were analyzed by SGS Environmental Services (SGS) in Anchorage, Alaska.

All samples were transferred in accordance with standard chain of custody (CoC) procedures outlined in the work plan. Duplicate samples were collected at a frequency of 10 percent (%) per method and matrix for Quality Assurance/Quality Control (QA/QC) purposes. All samples were preserved and stored at a temperature of 4 degrees Celsius (°C) ± 2°C prior to shipment to each laboratory.

4.1 Analytical Methods

Soil samples were submitted for some or all of the following analysis by the following methods:

- VOCs by EPA SW Method 8260;
- SVOCs by EPA Method SW8270;
- Metals by EPA 6010/7470
- GRO by Alaska Method 101 (AK101);

- DRO by AK102;
- RRO by AK103;
- PCBs by EPA SW8082; and.
- DCA and EDB by EPA SW8260

Phase I samples were additionally submitted for:

- Corrosivity/pH by EPA SW9045D.

Waste characterization samples were digested by EPA SW1311 and the extract analyzed for contaminants of concern including VOCs, SVOCs, and RCRA metals.

4.2 Phase I Field Activities

The excavation and removal work, conducted between August 5 and August 7, 2014, included the removal of piping located between the paint shop sump and the waste room sump, removal of the waste water room sump, and excavation of the steel oil/water separator/UST. During excavation, two concrete injection wells were uncovered and a third was located below the waste water portion of the Completions Building. Both of the uncovered injection wells were constructed of open-bottom 4-foot diameter concrete casing with regular perforations and a concrete cap. The shallower injection well top was located approximately three feet bgs and had an overflow pipe descending to a second injection well located approximately 4.5 bgs and to the west. An overflow pipe exited the second injection well towards the west, indicating a third injection well existed below the waste water room.

As planned, a steel tank (the oil/water separator/UST) located approximately 50 feet north of the Completions Building was uncovered and the contents assessed. Piping leading to this tank from the building is not connected to the building, but likely was in the past. Piping leading from the tank to the north is perforated, indicating the purpose was injection. The top of the tank was located approximately six feet bgs, and measured 12 feet long and five feet in diameter (total volume of approximately 1,800 gallons).

Ahtna excavated and segregated soil around the piping and injection wells as either overburden or potentially impacted based on visual and olfactory senses as well as location above or below piping. Two stockpiles were located on a liner, one stockpile (approximately 20 cubic yards [CY]) was considered suspect impacted and one (40 CY) was considered as suspect clean. Five samples were collected from each stockpile and field screened using a calibrated photoionization detector (PID). One sample was collected from each soil stockpile from the field screening sample location with the highest response (samples 14-BHI-SP-01-SO and 14-BHI-SP-01-SO). Soil excavated to uncover the steel oil/water separator/UST was evaluated for impact based on visual and olfactory senses. No soil excavated in relation to the uncovering of the top of the steel oil/water separator/UST and the piping leading to it from near the Completions Building had any indication of impact.

Ahtna collected characterization samples from below the exit point of the paint shop sump out of the building (sample 14-BHI-EX-01-SO), on the exterior of each of the concrete well casings (samples 14-BHI-EX-02-SO, 14-BHI-EX-03-SO, and 14-BHI-EX-04-SO) and at the effluent end (north end) of the steel tank injection system (14-BHI-EX-06-SO). Duplicate sample 14-BHI-EX-05-SO was collected with project sample 14-BHI-EX-04-SO.

For disposal characterization, a sample was also collected from the contents of the steel tank (14-BHI-TA-01-SL). The contents of the tank were mostly soil. The contents of all removed piping was placed into a 55-gallon steel drum and sample 14-BHI-DR-01-SL was collected.

Ahtna also removed the waste water room sump located in the Completions Building using jackhammers and collected one soil sample from below the former sump location (sample 14-BHI-WS-01-SO). Sample 14-BHI-CON-01 was collected for determining the disposal method for the sump concrete.

The paint shop sump influent and effluent piping was grouted at the sump and a hydrostatic test was conducted to evaluate the sump for leaks. The sump passed the hydrostatic test with no water loss over a 48-hour period. All floor drains within the shop portion of the Completions Building were also grouted in.

Sample locations are presented on Figure 4. The following summarizes analytical results for each sample collected during Phase I.

<u>Excavation Confirmation Samples</u>

- **14-BHI-EX-01-SO** — Collected from below the paint sump pipe immediately below where the pipe exits the building. Not analyzed for other than VOCs, GRO, DRO, RRO. VOCs, GRO, DRO, RRO were reported as non-detect or below ADEC cleanup levels.

- **14-BHI-EX-02-SO** — Collected on the east side of the east (or shallowest) injection well and approximately three feet below the well top. Soil was found to be non-corrosive. Detections for barium, cadmium, chromium, lead, and mercury were all below cleanup levels. Arsenic was detected at a concentration of 4.6 milligrams per kilogram (mg/kg), above the ADEC cleanup level of 3.9 mg/kg. One SVOC, bis(2-ethylhexyl)phthalate, was detected but below the associated ADEC cleanup level. TCE and PCE were detected, but below ADEC cleanup levels. DRO was detected above the ADEC cleanup level of 250 mg/kg at 740 mg/kg.

- **14-BHI-EX-03-SO** — Collected between the east and west injection wells and approximately three feet below the excavation floor surface. Soil was found to be non-corrosive; detections for arsenic, barium, chromium, lead, and mercury were all below cleanup levels except arsenic (4.1 mg/kg). One SVOC, bis(2-ethylhexyl)phthalate, was detected but below ADEC's cleanup level. TCE was detected, but below ADEC's cleanup level. Other VOCs, GRO, DRO, and RRO were reported as non-detect or at concentrations below the associated ADEC cleanup levels.

- **14-BHI-EX-04-SO** — Collected on the west side of the west dry well, between the dry well and the waste water building, approximately three feet below the top of the dry well. Soil was found to be non-corrosive. Detections of arsenic, barium, chromium, lead, and mercury were reported but at concentrations below cleanup levels. No VOCs or SVOCs were detected. GRO, DRO, RRO were reported as non-detect or at concentrations below ADEC cleanup levels.

- **14-BHI-EX-05-SO** — Duplicate of sample 14-BHI-EX-04-SO. Soil was found to be non-corrosive. Detections of arsenic, barium, chromium, lead, and mercury were reported at concentrations below cleanup levels. No VOCs or SVOCs were detected. GRO, DRO, RRO concentrations were reported as non-detect or below cleanup levels.

- **14-BHI-EX-06-SO** — Collected below the exit port of the steel oil/water separator tank; north end. Soil was found to be non-corrosive. Detections for barium, cadmium, chromium, lead, and mercury were reported at concentrations below cleanup levels; arsenic was detected slightly greater than the cleanup level at4.4 mg/kg. One SVOC, bis(2-ethylhexyl)phthalate, was detected but below the ADEC cleanup level. PCE was detected, but below the ADEC cleanup level. Other VOCs, GRO, DRO, RRO concentrations were reported as non-detect or below cleanup levels.

<u>Soil Stockpile Samples</u>

- **14-BHI-SP-01-SO** — Collected from stockpiled soil considered suspect impacted due to odor or PID. Soil was found to be non-corrosive. Detections of arsenic, barium, cadmium, chromium, lead, and mercury reported but at concentrations below ADEC cleanup levels. One SVOC, bis(2-ethylhexyl)phthalate, was detected but below the ADEC cleanup level. No VOCs were detected. GRO, DRO, and RRO reported as non-detect or below cleanup levels. Analysis of TCLP extract indicated:
    - TCLP VOCs – all below detection limits.
    - TCLP SVOCs – all below detection limits.
    - TCLP RCRA Metals – all below detection limits.

- **14-BHI-SP-02-SO** — Collected from stockpiled soil considered clean overburden. Soil was found to be non-corrosive. Detections of arsenic, barium, cadmium, chromium, lead, and mercury reported but at concentrations below cleanup levels. One SVOC, (Bis(2-ethylhexyl)phthalate), was detected but below the ADEC cleanup level. No VOC were detected. GRO, DRO, and RRO were reported as non-detect or below cleanup levels. Analysis of TCLP extract indicated:
    - TCLP VOCs – all below detection limits.
    - TCLP SVOCs – all below detection limits**.**
    - TCLP RCRA Metals – all below detection limits except barium: 1.9 mg/L.

<u>Waste Water Room Sub-Sump Sample</u>

- **14-BHI-WS-01-SO** — Collected sample from below the waste water room sump after demolition. Soil was found to be non-corrosive. Detections of barium, cadmium, chromium, lead, and mercury were all reported below cleanup levels; arsenic was

detected slightly greater than the cleanup level at 5.1 mg/kg;. One SVOC, (Bis(2-ethylhexyl)phthalate), was detected but below the ADEC cleanup level. No VOCs were detections. GRO, DRO, and RRO were reported as non-detect or below cleanup levels.

Tank Contents Sample

- **14-BHI-TA-01-SL** — Collected from inside the steel oil/water separator/UST. Soil was found to be non-corrosive. Detections for arsenic, barium, chromium, lead, and mercury were all reported at concentrations below ADEC cleanup levels. GRO was reported below the ADEC cleanup level of 300 mg/kg. DRO was reported above the 250 mg/kg ADEC cleanup level at 6,800 mg/kg, but RRO was detected below the ADEC cleanup level at 7,300 mg/kg. Nine SVOCs detected, one above cleanup levels: bis(2-ethylhexyl)phthalate was detected at 200 mg/kg (ADEC cleanup level is 13 mg/kg). A total of 16 VOCs detected with two reported at concentrations above cleanup levels: benzene was detected at 0.042 mg/kg; ADEC cleanup level is 0.025 mg/kg; TCE was detected at 0.054 mg/kg; ADEC cleanup level is 0.02 mg/kg. Analysis of TCLP extract indicated:
    - TCLP VOCs – all below detection limits
    - TCLP SVOCs – all below detection limits
    - TCLP for RCRA metals: Barium at 3.7 mg/L and lead at 1.9 mg/L.

4.3 Phase II Field Activities

The excavation and removal work, conducted between August 19 and August 21, 2014, included the removal of all piping located between the Completions Building and the steel oil/water separator tank/UST, removal of the contents of the steel oil/water separator tank/UST, removal of the steel oil/water separator tank/UST, removal of two of the concrete-cased injection wells, abandonment of a third injection well, and backfilling and site restoration. Excavation work conducted during Phase II dug through the soil sample locations established in Phase I.

Removal activities were initiated by conducting field screening using a PID below the piping leading to the steel oil/water separator tank/UST at 10-foot intervals per ADEC UST regulations. The pipe segment joints fell at 10-foot intervals as well, and field screening samples were collected at approximately 18-inches below each of the four joints. Field screening results ranged from a relative response of 4.0 parts per million (ppm) at the joint located 10 feet south of the steel oil/water separator tank/UST to 0.8 ppm at the pipe joint located 30 feet south of the steel oil/water separator tank/UST. One sample was collected (sample 14-BHI-EX-07-SO) from the location with the highest PID response of 4 ppm.

Ahtna then directed Emerald to remove the contents of the steel oil/water separator tank/UST, and triple rinse the tank. Once Emerald completed the contents removal and rinsing work, Prism then oversaw the removal of the tank, and accepted the tank for disposal by recycling. Because of the depth of the excavation, confirmation samples were collected from the excavator bucket. Confirmation samples (samples 14-BHI-UT-01-SO and 14-BHI-UT-02-SO) were collected from below each end of the tank. Duplicate project sample14-BHI-UT-03-SO was collected with sample 14-BHI-UT-02-SO.

As planned, Ahtna exposed and then removed the perforated drainage pipe exiting the steel oil/water separator tank/UST for 30 linear feet to the north. Ahtna collected one point of injection sample (sample 14-BHI-IP-03-SO) below the piping at a location 10 feet north of the north end of the steel oil/water separator tank/UST.

Ahtna removed the two concrete-cased injection wells. All soil contained within and around the injection wells were stockpiled on a liner and then covered. Sample 14-BHI-SP-03-SO was collected of the approximately 10 CY stockpile. Sample 14-BHI-CON-02 was collected to determine disposal options for the injection well concrete casing.

Upon completion of excavation work, Ahtna backfilled the excavations with overburden soil as well as soil stockpiled during Phase I. The soil was compacted in 1-foot lifts, and then the area was capped with asphalt. Excavated soil and concrete related to the removal of the concrete-cased injection wells remains at the site pending disposal.

The third injection well was abandoned in-place by pouring 1.5 CY of concrete into the well via the overflow pipe leading into it from the easterly two injection wells.

Sample locations are presented on Figure 5. The following summarizes analytical results for each sample collected during Phase II.

<u>UST Excavation Confirmation Samples</u>

- **14-BHI-EX-07-SO** — Soil sample collected 10 feet south of the south side of the steel oil/water separator/UST. No detections reported for GRO, DRO, or VOCs. RRO was detected, but at a concentration (28 mg/kg) below the ADEC cleanup level of 10,000 mg/kg. Of the SVOCs analyzed for, one was detected, bis(2-ethylhexyl)phthalate, but at a concentration below the ADEC cleanup level. Detections for barium, chromium, lead, and mercury were all below cleanup levels.

- **14-BHI-UT-01-SO** — Soil sample collected two feet below the bottom of the south end of the steel oil/water separator/UST. No detections reported for GRO. DRO detected at a concentration greater than the ADEC cleanup level of 250 mg/kg. RRO was detected at a concentration less than the ADEC cleanup level. One VOC, PCE, was detected at a concentration less than the ADEC cleanup level. Of the SVOCs analyzed for, bis(2-ethylhexyl)phthalate was the only one detected and at a concentration below the ADEC cleanup level. Detections for barium, lead, mercury, nickel, and vanadium were all below cleanup levels. Chromium was detected at a concentration slightly greater than the ADEC cleanup level. One PCB was detected; Aroclor 1260 was detected at 0.0086 mg/kg, below the 1 mg/kg ADEC cleanup level.

- **14-BHI-UT-02-SO** — Soil sample collected two feet below the bottom of the north end of the steel oil/water separator/UST. No detections reported for GRO. DRO and RRO detected at a concentrations less than the ADEC cleanup level. One VOC, PCE, was detected at a concentration less than the ADEC cleanup level. Of the SVOCs analyzed for, bis(2-ethylhexyl)phthalate was the only one detected and at a concentration below

the ADEC cleanup level. Detections for arsenic, barium, chromium, lead, mercury, nickel, and vanadium were all below cleanup levels. No PCBs were detected.

- **14-BHI-UT-03-SO** — Soil sample collected as a duplicate of sample 14-BHI-UT-02-SO. Similar results as 14-BHI-UT-02-SO, with the exception that GRO, DRO RRO and bis(2-ethylhexyl)phthalate were not detected. TCE was additionally detected at a concentration less than the ADEC cleanup level.

Point of Injection Confirmation Samples

- **14-BHI-IP-01-SO** — Soil sample collected below the bottom of the easterly most concrete injection well after well removal. No detections reported for GRO. DRO detected at a concentration greater than the ADEC cleanup level. RRO detected at a concentration less than the ADEC cleanup level. One VOC, TCE, was detected at a concentration less than the ADEC cleanup level. Of the SVOCs analyzed for, bis(2-ethylhexyl)phthalate was the only SVOC detected and at a concentration less than the ADEC cleanup level. Detections for barium, lead, and mercury, were all below cleanup levels. Chromium was detected at a concentration slightly greater than the ADEC cleanup level.

- **14-BHI-IP-02-SO** — Soil sample collected below the bottom of the western concrete injection well after well removal. No detections reported for GRO. DRO and RRO detected at concentrations less than the ADEC cleanup level. One VOC, TCE, was detected at a concentration less than the ADEC cleanup level. Of the SVOCs analyzed for, bis(2-ethylhexyl)phthalate was the only SVOC detected and at a concentration below the ADEC cleanup level. Detections for barium, lead, chromium, and mercury.

- **14-BHI-IP-03-SO** — Soil sample collected 10 feet north and below the perforated drainage pipe 10 feet north of the south end of the steel oil/water separator/UST. GRO was not detected; DRO was detected at a concentration greater than the ADEC cleanup level. RRO was detected at concentrations less than the ADEC cleanup level. One VOC, PCE, was detected at a concentration greater than the ADEC cleanup level. Of the SVOCs analyzed for, bis(2-ethylhexyl)phthalate was the only one detected and at a concentration less than the ADEC cleanup level. Detections for arsenic and mercury reported at concentrations less than cleanup levels. Barium, cadmium, chromium, and lead were reported at concentrations greater than their respective ADEC cleanup levels.

A stockpiled soil sample was collected of soil from in and around the two concrete injection wells. Sample 14-BHI-SP-03-SO contained detections above cleanup levels for GRO, DRO, and RRO. DRO and RRO were detected at concentrations nearing 5% and 8% total matrix composition respectively. However, the field team did not note any hydrocarbon odor or sheening. The VOCs toluene, ethylbenzene, TCE, and PCE were detected at a concentration greater than the associated ADEC cleanup levels. The SVOC bis(2-ethylhexyl)phthalate was detected at a concentration greater than the ADEC cleanup level. Mercury, barium, cadmium, chromium, lead, and silver were detected at concentrations greater than associated ADEC cleanup levels. TCLP analysis did not indicate the material as hazardous.

(This Page Intentionally Left Blank)

5.0 QUALITY ASSURANCE/QUALITY CONTROL

QA/QC data have been reviewed to evaluate analytical data collected as part of the Nikiski Completions Facility Site Characterization in order to identify and qualify data not in conformance with the work plan, and to determine if the reported results meet project-specific data quality objectives (DQOs).

Associated data packages were identified as sample delivery groups (SDG) 1408-059, L714612, 1143676, L717540, L719994, 1408-200, 1144058. Data packages associated with these work orders are presented in Appendix D. Analyses were conducted by OnSite Environmental, SGS North America, and ESC Lab Sciences. All samples were reportedly collected and delivered to the appropriate laboratory in accordance with the work plan (Ahtna 2014c,d,e). A description of the data quality impacts are described below.

Samples were submitted for analysis using the following analytical methods:

- EPA SW8260B;
- EPA SW8270D;
- EPA SW8260B after EPA extraction Method 1311 (TCLP); and
- EPA SW8270C/D after EPA extraction Method 1311 (TCLP)
- EPA SW6010C;
- EPA SW7471;
- EPA SW8082
- EPA SW6010C after EPA extraction Method 1311(TCLP);
- EPA SW7471 after EPA extraction Method 1311(TCLP);
- AK101; and,
- AK102/AK103.

All data were validated and reviewed in accordance with appropriate EPA procedural guidance documents and ADEC regulatory guidance documents. The reference documents include the EPA *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (EPA 2008) and ADEC *Environmental Laboratory Data and Quality Assurance Requirements* (ADEC 2009). ADEC Laboratory Data Review Checklists (ADEC 2010c) have been completed for each SDG listed above.

Samples were analyzed in accordance with applicable specifications in EPA Test Methods for Evaluating Solid Waste, SW-846, Third Edition (EPA 2008); and Laboratory Standard Operating Procedures approved by the State of Alaska.

The review focuses on criteria for the following QA/QC parameters and their effect on data quality and usability:

- Sample handling and CoC procedures
- Holding time compliance
- Field QA/QC (ambient blanks, trip blanks, field duplicates)
- Laboratory control samples and laboratory control sample duplicates (LCS/LCSD)
- Method reporting limits
- Laboratory blank analysis
- Matrix spike and matrix spike duplicate (MS/MSD) results
- Surrogates
- Analytical methods
- Precision and accuracy
- Completeness

In the absence of other QC guidance, method- and/or standard operating procedure-specific QC limits were also utilized to apply qualifiers to the data.

5.1 Sample Handling

All samples were delivered by FedEx® or by hand to the to the project laboratory. CoC forms, laboratory sample receipt forms, and case narratives were reviewed to determine if any sample handling activities might have affected the integrity of the samples and the quality of the associated data. The following data quality issues were observed:

- In SDG 714612, one sample was incorrectly logged on the CoC. Per Ahtna email, the sample call-out was removed.

All sample containers within the sample coolers were received at the laboratory intact and within the specified temperature range of 4 °C +/- 2°C. Data flags were not assigned due to the cooler temperatures.

5.2 Holding Time Compliance

All samples were extracted, digested, and/or analyzed within the holding time criteria for the applicable analytical methods and in accordance with work plan specifications with the following exception:

- In SDG 714612, pH analyses were added to samples past the holding time per client email instructions.

5.3 Field QA/QC

Field QA/QC protocols are designed to monitor for possible contamination during collection and transport of samples collected in the field. Collection and analysis of field duplicates also facilitated an evaluation of precision that takes into account potential variables associated with sampling procedures and laboratory analyses. For this project, trip blanks and field duplicates were submitted for analysis.

5.4 Trip Blanks

A trip blank sample was submitted with samples from soil sampling media with each cooler shipped containing samples for volatile analysis. The trip blanks were prepared by the laboratory and shipped to the site with the empty sample bottles and back to the laboratory with samples collected from the site. The trip blanks were prepared by filling 40- milliliter (mL) vials with commercially manufactured, organic-free water (typically used for High Performance Liquid Chromatography (HPLC) analyses) prior to shipment from the laboratory.

5.5 Field Duplicates

Two field duplicate samples were collected and analyzed for this project. The frequency of field duplicate collection per sample media met the frequency (10%) requirements specified in the work plan.

Duplicate sample sets were collected from soil samples UT-02-SO and EX-04-SO.

When analytes were detected in the duplicate pairs, the relative percent differences (RPDs) between the analytes were calculated. When analytes were present at concentrations below the practical quantification limit (PQL) in one or both samples, no comparison could be made.

Calculated RPD values for all duplicate sample results were within method required criteria of 50% (soil) and are acceptable with the following exception:

- In SDG L714612, the RPD for Barium between sample EX-04-SO and EX-05-SO was 62%, which is above the recommended 50% RPD.

5.6 Laboratory Control Samples & Laboratory Control Sample Duplicates

Analyses of Laboratory Control Sample and LCS/LCSD for target analytes met laboratory and project QC goals for target analytes in all work orders. The RPD and percent recovery values between the LCS and LCSD pairs met method required precision and accuracy requirements.

5.7 Method Reporting Limits

Reporting limits for all analyses met or exceeded (i.e. were lower than) the criteria specified for this project in the work plan.

5.8 Laboratory Blanks

Method blanks were analyzed concurrently with a batch of 20 or fewer primary samples for each of the analytical procedures performed for this project. Method blanks were analyzed at the required frequency and target analytes were not detected (ND) at concentrations above the analytical reporting limit or PQL.

5.9 Matrix Spike/Matrix Spike Duplicate Results

MS/MSD sample sets were provided from both work orders and sample media submitted from this project. MS/MSD results for these samples met established QC criteria.

5.10 System Monitoring Compounds

System monitoring compounds (Surrogates) are specified for organic chromatographic analytical procedures. Surrogates are compounds similar to target analytes. These compounds are added to each sample prior to collection or extraction. Subsequent surrogate recovery indicates overall method performance. Surrogate recoveries were within prescribed control limits for all primary samples, LCS/LCSD, MS/MSD, and other QA/QC samples.

5.11 Analytical Methods

The following subsections summarize whether QC criteria were met for each analytical method. Laboratory result flags are also provided next to analytical results. Results below the method detection limit are flagged “U” or “ND.” Results between the method detection limit and the method reporting limit have been flagged “J”, as estimates, due to the low level of quantitation. Results that are estimated due to minor QA/QC deficiencies have been flagged “J”, as estimated. Results with major QA/QC deficiencies have been flagged “R”, as rejected.

5.11.1 Precision and Accuracy

Precision criteria monitor analytical reproducibility. Accuracy criteria monitor agreement of measured results with “true values” established by spiking applicable samples with a known quantity of analyte or surrogate. Precision and accuracy were evaluated by comparing field duplicates, MS/MSD, and LCS/LSCD pairs for this project. Field duplicates and MS/MSD samples were collected in accordance with work plan specifications. Field duplicate RPDs met applicable control limits (except as noted in Section 5.5). Recoveries and RPDs for all LCS/LSCD samples were within required limits. Recoveries and RPDs for all MS/MSD samples were within required limits (except as noted in Section 5.9).

5.11.2 Completeness

Data completeness is defined as the percentage of usable data (usable data divided by the total possible data). The overall project completeness goal is 90%, based on the following calculation:

$$\% \text{ completeness} = \frac{\text{number of valid (i.e., non-R flagged) results}}{\text{number of possible results}}$$

All requested analyses were performed in accordance with work plan specifications. No associated data were qualified as unusable (i.e., “R”). Completeness for this project is 100%.

5.11.3 Representativeness

Data representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or environmental condition. The number and selection of samples were determined in the field to accurately account for site variations and sample matrices. The DQO for representativeness was met.

5.11.4 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another. Data produced for this project followed applicable field sampling techniques and specific analytical methodology. The DQO for comparability was met.

5.12 Data Summary

In general, the overall quality of the data was acceptable. Acceptable data are associated with QC data that meet all QC criteria or with QC samples that did not meet QC criteria but data quality objectives were not affected. The EPA National Functional Guidelines (EPA 2008) were used to evaluate the acceptability of the data. Data quality meets the established data quality objectives for this project. All data are suitable for their intended use.

(This Page Intentionally Left Blank)

6.0 CONCEPTUAL SITE MODEL

An updated ADEC CSM has been developed for the site based on current soil analytical data presented in this report. The completed ADEC CSM scoping form and graphic are included in Appendix D. The CSM was developed in accordance with ADEC *Policy Guidance on Developing Conceptual Site Models* (ADEC 2010b).

6.1.1 Source

The source of impact to groundwater and soil at the site is likely fluids discharged from the paint shop/washbay sump to two different injection well systems used during unknown time periods.

6.1.2 Impacted Media

Confirmation samples collected at the end of Phase II removal work document DRO, PCE, barium cadmium chromium, and lead impact to soil above ADEC cleanup criteria exists at one location about 7 feet bgs and 10 feet north of the removed steel oil/water separator UST.

Additionally, DRO and chromium were detected in one sample located below (approximately 8 feet bgs) the former location of the eastern concrete cased injection well at concentrations greater than associated the ADEC cleanup levels. DRO and chromium were also detected at concentrations greater than associated the ADEC cleanup levels at the south end of the former steel oil/water separator UST (approximately 13 feet bgs).

6.1.3 Transport Mechanisms

The most likely transport mechanisms include direct release to subsurface soils and migration though the vadose zone to groundwater. Volatile compounds may move via volatilization to the surface; however an asphalt cap covers the site.

6.1.4 Exposure Media

Potential exposure media at the site include soil, groundwater, and air.

6.1.5 Human Health Exposure Routes and Receptors

The identified routes of exposure include ingestion of soil and groundwater, and inhalation of outdoor air. Possible receptors include current and future commercial or industrial workers, site visitors, trespassers or recreational users, and construction workers.

The exposure route by ingestion via groundwater media is considered complete for current and future commercial or industrial workers, site visitors or trespassers, and construction workers. However, groundwater at the site is not used for drinking water or tap water at the Completions Facility. Tap water is supplied by the McGahan Utility system. Groundwater is located at 40 feet bgs.

The human health exposure route via air media is complete for current or future commercial or industrial workers and construction workers at the site. The exposure route for site visitors,

trespassers, or recreational users is also complete, but is insignificant due to the limited exposure time. The exposure route includes inhalation of both indoor and outdoor air due to the presence of TCE impacted groundwater and PCE in soil. The air pathway may be considered insignificant for outside exposure as the site is covered with asphalt.

The fugitive dust exposure route is considered incomplete because impact is located 6 feet bgs and deeper.

Receptors and completed pathways are presented in the ADEC CSM checklist and graphic CSM provided in Appendix E.

7.0 CONCLUSIONS AND RECOMMENDATIONS

With two exceptions, the project objective has been met and subterranean sources of potential chlorinated hydrocarbon impact to groundwater have been removed. Project tasks completed to meet the objective included:

- Removal of an 1,800-gallon steel underground oil/water separator tank/UST and associated influent piping.
- Removal of two concrete injections wells and abandonment of a third injection well.
- Removal of the Completions Building waste water room sump.
- Removal of piping located outside of the Completions Building connecting the interior paint shop/washbay sump to the waste water room sump.
- Abandon by grouting-in all interior floor drains and the paint shop/washbay sump.

Two infrastructure items not removed include:

- Eluent perforated drain piping leading out of the steel tank towards the north.
- Paint shop/washbay sump.

The paint shop/washbay sump is isolated and a hydrostatic test of the sump after grouting in the influent and effluent pipe openings documented the integrity of the sump. Pipe locate work did not indicate a connection between the Completions Building shop floor drains and sumps, and the current septic system servicing the office portion of the Completions Building.

7.1 Conclusions

Two injection well systems at the site formerly existed. Analytical data from the contents of the removed steel oil/water separator/UST and from the soil located immediately below the concrete cased injection wells and now stockpiled at the site, indicate that the source of TCE impact was likely the injection well systems used to dispose of fluids from the paint shop/washbay sump.

Residual DRO and chromium impact to soil remains at the site at the southern end of the steel oil/water separator/UST (sample location UT-01-SO), and in soil below the former easterly concrete cased injection well. DRO, PCE, barium, cadmium, chromium, and lead impact is associated with the drainage area located north of the now removed steel oil/water separator/UST.

7.2 Recommendations

Ahtna recommends completion of proposed site characterization and release investigation activities as described in the August 15, 2014 work plan addendum. Characterization activities proposed include the installation of a soil boring and a groundwater monitoring well through the

center of the former location of one of the concrete cased injection wells (sample location 14-BHI-IP-01-SO and within the area of sample location 14-BHI-IP-03-SO. Additionally, one soil boring at the form former southern end of the steel oil/water separator/UST, near sample location 14-BHI-UT-01-SO, is recommended.

Soil would be sampled at 10-foot intervals at each of the three soil borings for DRO, VOCs, SVOCs, and RCRA eight metals. Groundwater in the newly installed wells would be analyzed for DRO, VOCs, SVOCs, and RCRA eight metals.

Characterization activities would also include installation of groundwater monitoring wells to delineate the dissolve-phase TCE plume identified at the site in previous characterization work.

8.0 REFERENCES

Ahtna Engineering Services, LLC (Ahtna). 2014a. *Nikiski Completions Facility Site Characterization Report, Nikiski, Alaska. ADEC File No. 2323.38.055.* July 9.

_____, 2014b. *August Groundwater Monitoring Report, Baker Hughes Nikiski Completions Facility, ADEC File No. 2323.38.055.* September 12.

_____, 2014c. *Site Characterization Work Plan, Revision 2, Baker Hughes Nikiski Completions Facility, ADEC File No. 2323.38.055.* April 25.

_____, 2014d. *Work Plan Addendum, Nikiski Completions Facility Sump Removal.* August 1.

_____, 2014e. *Work Plan Addendum, Nikiski Completions Facility Phase II Removal.* August 15.

Alaska Department of Environmental Conservation (ADEC), 2012. *Oil and Other Hazardous Substances Pollution Control.* April 8.

_____, 2010a. *Draft Field Sampling Guidance,* May.

_____, 2010b. *Policy Guidance on Developing Conceptual Site Models,* October.

_____, 2010c. Laboratory Data Review Checklists.

_____, 2009. Technical Memorandum: *Environmental Laboratory Data and Quality Assurance Requirements.* March.

_____, 2002. *Underground Storage Tanks Procedures Manual.* November.

Environmental Protection Agency (EPA), 2008. *Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review* (EPA 540/R-08/01). June.

_____, 1989. *Groundwater Quality Evaluation*. McGahan Water System Service Area, Nikiski, Alaska. July.

Shannon & Wilson, 1997. Letter Report to Robert Krogseng, ADEC. Re: McGahan Utilities Project. Monitoring Well Assessment. June 30.

Weston Solutions, Inc. (Weston). 2013. Letter Report to Mr. Jason Goodwin, Groundwater Chlorinated Hydrocarbon Analysis; Nikiski Tool Shop, 51950 Dolores Drive, Nikiski, Alaska; ADEC File No. 2323.38.055. June 19.

(This Page Intentionally Left Blank)

TABLES

(This Page Intentionally Left Blank)

TABLE 1: Sample Collection Summary
2014 Removal Action Report
Nikiski Completions Facility
Baker Hughes Oilfield Services, Inc.
Nikiski, Alaska

Sample No. (14-BHI-)	Location	Removed	Depth (feet bgs)	Duplicate	Sample Date	Sample Time	Laboratory Analyses												
							GRO (AK101)	DRO (AK102)	RRO (AK103)	VOCs (EPA 8260B	SVOCs (EPA 8270D)	RCRA Metals (EPA 6010C/7471)	PBCs (EPA 8082)	Nickel & Vanadium (EPA 6010C)	TCLP VOCs (EPA 8260B)	TCLP SVOCs (EPA 8270D)	TCLP Metals (EPA 6010C/7471)	Corrosivity/ pH (9045D)	Total Solids (2540 G-2)
Phase I																			
Excavation Confirmation																			
EX-01-SO	Out-fall of Paint Shop Sump Piping	YES	2		08/05/14	1500	✓	✓	✓	✓	--	--	--	--	--	--	--	--	--
EX-02-SO	East side of east concrete cased injection well	YES	4		08/06/14	1730	✓	✓	✓	✓	✓	✓	--	--	--	--	--	✓	✓
EX-03-SO	Between east and west concrete cased injection well	YES	5		08/06/14	1735	✓	✓	✓	✓	✓	✓	--	--	--	--	--	✓	✓
EX-04-SO	Between west concrete cased injection well and Completions Building foundation.	YES	6		08/06/14	1740	✓	✓	✓	✓	✓	✓	--	--	--	--	--	✓	✓
EX-05-SO	Duplicate of EX-04-SO	YES	6	✓	08/06/14	1745	✓	✓	✓	✓	✓	✓	--	--	--	--	--	✓	✓
EX-06-SO	Below piping exciting steel oil/water separator/UST	YES	6.5		08/06/14	1750	✓	✓	✓	✓	✓	--	--	--	--	--	--	✓	✓
WS-01-SO	Soil below removed Waste Water Room Sump	YES	4.5		08/07/14	820	✓	✓	✓	✓	✓	✓	--	--	--	--	--	✓	✓
Waste Characterization																			
DR-01-SL	Drum Contents	YES	NA		08/05/14	1450	✓	✓	✓	✓	✓	✓	--	--	✓	✓	✓	✓	✓
TA-01-SL	Tank Contents	YES	NA		08/06/14	1630	✓	✓	✓	✓	✓	✓	--	--	✓	✓	✓	✓	✓
SP-01-SO	Soil Stockpile	NA	NA		08/07/14	805	✓	✓	✓	✓	✓	✓	--	--	✓	✓	✓	✓	✓
SP-02-SO	Soil Stockpile	NA	NA		08/07/14	810	✓	✓	✓	✓	✓	✓	--	--	✓	✓	✓	✓	✓
Phase II																			
Excavation Confirmation																			
EX-07-SO	UST piping excavation confirmation sample 10 feet south of UST	NO	6		08/19/14	910	✓	✓	✓	✓	✓	✓	--	--	--	--	--	--	✓
IP-01-SO	Injection Point below west injection well	NO	8		08/19/14	1340	✓	✓	✓	✓	✓	✓	--	--	--	--	--	--	✓
IP-02-SO	Injection Point below east injection well	NO	10		08/19/14	1405	✓	✓	✓	✓	✓	✓	--	--	--	--	--	--	✓
IP-03-SO	Injection Point below perforated drainage piping 10 feet north of UST	NO	7		08/20/14	1400	✓	✓	✓	✓	✓	✓	--	--	--	--	--	--	✓
UT-01-SO	South end of UST excavation	NO	11		08/20/14	1425	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	✓
UT-02-SO	North end of UST excavation	NO	11		08/20/14	1430	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	✓
UT-03-SO	Duplicate of UT002.SO	NO	11	✓	08/20/14	1435	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	✓
Waste Characterization																			
SP-03-SO	Soil Stockpile	NA	NA		08/19/14	1335	✓	✓	✓	✓	✓	✓	--	--	✓	✓	✓	--	✓

Key:
-- = Analysis Not Performed
✓ = Analysis Performed
AK = Alaska
bgs = below ground surface
DRO = Diesel Range Organics
EPA = Envrinonmental Proctection Agency
GRO = Gasoline Range Organics
PCBs = Polychlorinated Biphenyls
RCRA = Resource Conservation and Recovery Acy
RRO = Residual Range Organics
SVOC = Semi-volatile organic compounds
TCLP = Toxicity Characteristic Leaching Procedure

TABLE 2: Removal Phase I Detections Summary
2014 Removal Action Report
Nikiski Completions Facility
Baker Hughes Oilfield Services, Inc.
Nikiski, Alaska

Location:	ADEC Soil Cleanup Levels[1]	Drum Contents	Steel UST/Oil-Water Separator Soil/Contents	Excavation Confirmation						Stockpile		Waste Water Sump Soil
Sample ID (14-BHI-):		**DR-01-SL**	**TA-01-SL**	**EX-01-SO**	**EX-02-SO**	**EX-03-SO**	**EX-04-SO**	**EX-05-SO (DUP)**	**EX-06-SO**	**SP-01-SO**	**SP-02-SO**	**WS-01-SO**
Date Collected:		8/5/2014	8/6/2014	8/5/2014	8/6/2014	8/6/2014	8/6/2014	8/6/2014	8/6/2014	8/7/2014	8/7/2014	8/7/2014
Status:		Removed	Removed	Removed	Removed	Removed	Removed	Removed	Removed	Removed	Removed	In-Place
Corrosivity	--	Non-Corrosive	Non-Corrosive	--	Non-Corrosive	Non-Corrosive	Non-Corrosive	Non-Corrosive	Non-Corrosive	Non-Corrosive	Non-Corrosive	Non-Corrosive
pH	--	6.6	7.8	--	7.0	7.1	6.8	6.8	8.0	6.7	6.7	8.8
Total Solids	--	55.5	87.7	--	91%	91.6%	90.7	92.2	95.1	93.9	95.2	92.3
ADEC Fuels (AK101, AK102, AK103; mg/kg)												
Gasoline-range organics	300	16	47	ND (16)	ND (3.5)	ND (3)	ND (3.4)	ND (4.6)	ND (2.4)	ND (3.3)	ND (3.2)	ND (3)
Diesel-range organics	250	**17000**	**6800**	100	**740**	120	29	14	94	190	78	18
Residual-range organics	10000	33000	7300	350	2200	350	120	55	290	430	250	59
BTEX (EPA 8260B; mg/kg)												
Benzene	0.025	**0.34**	**0.042**	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
Toluene	6.5	ND (0.53)	**12**	ND (0.14)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.23)	ND (0.12)	ND (0.17)	ND (0.16)	ND (0.15)
Ethylbenzene	6.9	0.99	0.53	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
Xylenes (total)	63	6.3	3.1	ND (0.083)	ND (0.105)	ND (0.09)	ND (0.101)	ND (0.139)	ND (0.072)	ND (0.099)	ND (0.095)	ND (0.091)
VOCs (EPA 8260B; mg/kg)												
Acetone	88	0.7 J	1.2 J	ND (0.14)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.23)	ND (0.12)	0.19 J	ND (0.16)	ND (0.15)
(cis) 1,2-Dichloroethene	0.24	ND (0.11)	0.028	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
2-Butanone	59	ND (0.53)	0.14 J	ND (0.14)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.23)	ND (0.12)	ND (0.17)	ND (0.16)	ND (0.15)
Trichloroethene	0.02	ND (0.11)	**0.054**	ND (0.0025)	0.0054	0.0041	ND (0.0025)	ND (0.0025)	ND (0.0025)	ND (0.0025)	ND (0.0025)	ND (0.0025)
Methyl Isobutyl Ketone	8.1	ND (0.53)	1	ND (0.14)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.23)	ND (0.12)	ND (0.17)	ND (0.16)	ND (0.15)
Tetrachloroethene	0.024	ND (0.11)	ND (0.025)	ND (0.0025)	0.0034	ND (0.0025)	ND (0.0025)	ND (0.0025)	0.0055	ND (0.0025)	ND (0.0025)	ND (0.0025)
Isopropylbenzene	51	ND (0.11)	0.25	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
n-Propylbenzene	15	ND (0.11)	0.65	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
1,3,5-Trimethylbenzene	23	ND (0.11)	1.4	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
1,2,4-Trimethylbenzene	23	ND (0.11)	5.2	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
sec-Butylbenzene	12	ND (0.11)	0.19	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
p-Isopropyltoluene	--	ND (0.11)	6.1	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
n-Butylbenzene	15	ND (0.11)	0.72	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
Naphthalene	20	ND (0.53)	3.4	ND (0.14)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.23)	ND (0.12)	ND (0.17)	ND (0.16)	ND (0.15)
SVOCs (8270D mg/kg)												
Acenaphthene	180	ND (0.64)	0.91	--	ND (0.032)	ND (0.0064)	ND (0.0064)	ND (0.0064)	ND (0.0064)	ND (0.064)	ND (0.032)	ND (0.0064)
Anthracene	3000	3.4 J	1.5	--	ND (0.032)	ND (0.0063)	ND (0.0063)	ND (0.0063)	ND (0.0063)	ND (0.063)	ND (0.032)	ND (0.0063)
Fluoranthene	1400	1.4 J	ND (0.099)	--	ND (0.025)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.05)	ND (0.025)	ND (0.005)
Fluorene	220	2 J	2.2	--	ND (0.034)	ND (0.0068)	ND (0.0068)	ND (0.0068)	ND (0.0068)	ND (0.068)	ND (0.034)	ND (0.0068)
Isophorone	3.1	**6.8 J**	2 J	--	ND (0.026)	ND (0.0052)	ND (0.0052)	ND (0.0052)	ND (0.0052)	ND (0.052)	ND (0.026)	ND (0.0052)
Naphthalene	20	1.6 J	7.3	--	ND (0.044)	ND (0.0089)	ND (0.0089)	ND (0.0089)	ND (0.0089)	ND (0.089)	ND (0.044)	ND (0.0089)
n-Nitrosodiphenylamine	15	7 J	ND (0.12)	--	ND (0.03)	ND (0.0059)	ND (0.0059)	ND (0.0059)	ND (0.0059)	ND (0.059)	ND (0.03)	ND (0.0059)
n-Nitrosodi-n-propylamine	0.0011	ND (0.91)	ND (0.18)	--	ND (0.045)	ND (0.0091)	ND (0.0091)	ND (0.0091)	ND (0.0091)	ND (0.091)	ND (0.045)	ND (0.0091)
Phenanthrene	3000	4.3 J	3	--	ND (0.026)	ND (0.0053)	ND (0.0053)	ND (0.0053)	ND (0.0053)	ND (0.053)	ND (0.026)	ND (0.0053)
Benzylbutyl phthalate	920	ND (1)	6.8 J	--	ND (0.052)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.1)	ND (0.052)	ND (0.01)
Bis(2-ethylhexyl)phthalate	13	**220**	**39**	--	0.22 J	0.039 J	ND (0.011)	ND (0.012)	0.061 J	1 J	0.49 J	ND (0.012) J
Pyrene	1000	2.5	0.96	--	ND (0.062)	ND (0.012)	ND (0.012)	ND (0.012)	ND (0.012)	ND (0.12)	ND (0.062)	ND (0.012)
Phenol	68	1.4 J	ND (0.14)	--	ND (0.035)	ND (0.007)	ND (0.007)	ND (0.007)	ND (0.007)	ND (0.07)	ND (0.035)	0.013 J
RCRA Metals (EPA 6010C/7470 mg/kg)												
Mercury	1.4	0.65	0.026	--	0.14	0.022	0.016 J	0.016 J	0.032	0.036	0.041	0.024
Arsenic	3.9	**4.7**	3.5	--	**4.6**	**4.1**	3.6	3.8	**4.4**	3.7	3.5	**5.1**
Barium	1100	**27000**	340	--	230	99	140 J	74 J	270	150 J	410	200
Cadmium	5	ND (0.07)	0.11 J	--	0.28 J	ND (0.07)	ND (0.07)	ND (0.07)	0.21 J	0.22 J	0.1 J	ND (0.07)
Chromium	25	**230**	20	--	19	23	22	20	21	13	19	18
Lead	400	**1500**	75	--	43	25	10	10	100	28	61	12
Selenium	3.4	**3.6 J**	ND (0.74)	--	ND (0.74)	ND (0.74)	ND (0.74)	ND (0.74)	ND (0.74)	ND (0.74)	ND (0.74)	ND (0.74)
Silver	11.2	1.4 J	ND (0.28)	--	ND (0.28)	ND (0.28)	ND (0.28)	ND (0.28)	ND (0.28)	ND (0.28)	ND (0.28)	ND (0.28)

(Key on next page)

TABLE 2: Removal Phase I Detections Summary
2014 Removal Action Report
Nikiski Completions Facility
Baker Hughes Oilfield Services, Inc.
Nikiski, Alaska

Notes: Results above ADEC cleanup values are underlined & bolded.
(1) = 18 AAC 75.345, Table B1

Key:

-- = Analysis Not Performed
ADEC = Alaska Department of Environmetal Conservation
AK = Alaska
BTEX = Benzene, toluene, ethylbenzene, xylenes
DUP = Duplicate of 14-BHI-EX-04-SO
EPA = Envrinonmental Proctection Agency
J = Estimated Value
mg/kg = Milligrams per kilogram
mg/L = Milligram per liter
ND = Analyte not detected above the RDL
PCBs = Polychlorinated Biphenyls
RCRA = Resource Conservation and Recovery Act
SVOC = Semi-volatile organic compounds
TCLP = Toxicity Characteristic Leaching Procedure
VOC = Volatile organic compunds

TABLE 3: Removal Phase II Detections Summary
2014 Removal Action Report
Nikiski Completions Facility
Baker Hughes Oilfield Services, Inc.
Nikiski, Alaska

Location:	ADEC Soil Cleanup Levels[1]	Excavation Confirmation	Soil Stockpile	Injection Point			Underground Tank		
Sample ID (14-BHI-):		EX-07-SO	SP-03-SO	IP-01-SO	IP-02-SO	IP-03-SO	UT-01-SO	UT-02-SO	UT-03-SO (Dup of UT-02)
Date Collected:		8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014
Total Solids (%)	--	95.8	62.8	95.7	94.8	85.2	95.5	96.6	96.7
ADEC Fuels (AK101, AK102, AK103; mg/kg)									
Gasoline-range organics	300	ND	**350**	ND	ND	ND	ND	ND	ND
Diesel-range organics	250	ND	**47000**	**320**	32	**2600**	**270**	12	ND
Residual-range organics	10000	28	**83000**	970	100	6200	660	41	ND
BTEX (EPA 8260B; mg/kg)									
Toluene	6.5	ND (0.14)	**26**	ND (0.17)	ND (0.19)	ND (0.34)	ND (0.25)	ND (0.23)	ND (0.20)
Ethylbenzene	6.9	ND (0.028)	**13**	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
Xylenes (total)	63	ND (0.084)	51	ND (0.102)	ND (0.114)	ND (0.080)	ND (0.148)	ND (0.139)	ND (0.121)
VOCs (EPA 8260B; mg/kg)									
Trichloroethene	0.02	ND (0.0025)	**2.7**	0.0035	0.0031	ND (0.0044)	ND (0.0025)	ND (0.0025)	0.0025
Tetrachloroethene	0.024	ND (0.0025)	**0.13**	ND (0.0025)	ND (0.0025)	0.071	0.003	0.0094	0.0049
Isopropylbenzene	51	ND (0.028)	0.79	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
n-Propylbenzene	15	ND (0.028)	1.6	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
1,3,5-Trimethylbenzene	23	ND (0.028)	4.2	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
1,2,4-Trimethylbenzene	23	ND (0.028)	13	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
sec-Butylbenzene	12	ND (0.028)	0.94	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
p-Isopropyltoluene	--	ND (0.028)	4.9	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
n-Butylbenzene	15	ND (0.028)	4.0	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
Naphthalene	20	ND (0.14)	5.7	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
SVOCs (8270D mg/kg)									
Acenaphthylene	180	ND (0.034)	1.6 J	ND (0.17)	ND (0.035)	ND (0.77)	ND (0.034)	ND (0.034)	ND (0.034)
Naphthalene	20	ND (0.034)	1.6 J	ND (0.17)	ND (0.035)	ND (0.77)	ND (0.034)	ND (0.034)	ND (0.034)
Phenanthrene	3000	ND (0.034)	1 J	ND (0.17)	ND (0.035)	ND (7.8)	ND (0.034)	ND (0.034)	ND (0.034)
Bis(2-ethylhexyl)phthalate	13	0.024 J	**640**	0.15 J	0.33 J	0.66 J	ND (0.35)	0.16 J	ND (0.34)
Di-n-butyl phthalate	80	ND (0.35)	1.4 J	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
RCRA Metals (EPA 6010C/7471 mg/kg)									
Mercury	1.4	0.0057 J	**2.4**	0.0034 J	0.0061 J	0.25	0.0087 J	0.021	0.019 J
Arsenic	3.9	ND (2.1)	3.2 J	ND (2.1)	ND (2.1)	0.77 J	ND (2.1)	0.74 J	1.1 J
Barium	1100	79	**22000**	180	100	**2600**	120	70	69
Cadmium	5	ND (0.52)	**33**	ND (0.52)	ND (0.53)	**7**	ND (0.52)	ND (0.52)	ND (0.52)
Chromium	25	15	**250**	**26**	13	**81**	**29**	19	16
Lead	400	4.7	**6400**	48	16	**1000**	42	3.6	4.2
Silver	11.2	ND (1.0)	**3.0**	ND (1.0)	ND (1.0)	ND (1.2)	ND (1.0)	ND (1.0)	ND (1.0)
Nickel	86	--	--	--	--	--	15	16	14
Vanadium	3400	--	--	--	--	--	50	49	42

Notes: Results above ADEC cleanup values are underlined & bolded.
[1] = 18 AAC 75.345, Table B1

Key:
-- = Analysis Not Performed
ADEC = Alaska Department of Environmetal Conservation
AK = Alaska
BTEX = Benzene, toluene, ethylbenzene, xylenes
DUP = Duplicate of 14-BHI-EX-04-SO
EPA = Envrinonmental Proctection Agency
J = Estimated Value
mg/kg = Milligrams per kilogram
mg/L = Milligram per liter
ND = Analyte not detected above the RDL
PCBs = Polychlorinated Biphenyls
RCRA = Resource Conservation and Recovery Act
SVOC = Semi-volatile organic compounds
TCLP = Toxicity Characteristic Leaching Procedure
VOC = Volatile organic compunds

TABLE 4: Removal Phase I Detections Summary
2014 Removal Action Report
Nikiski Completions Facility
Baker Hughes Oilfield Services, Inc.
Nikiski, Alaska

Location:	ADEC Soil Cleanup Levels[1]	Drum Contents	Steel UST/Oil-Water Separator Soil/Contents	Excavation Confirmation						Stockpile		Waste Water Sump Soil
Sample ID (14-BHI-):		DR-01-SL	TA-01-SL	EX-01-SO	EX-02-SO	EX-03-SO	EX-04-SO	EX-05-SO (DUP)	EX-06-SO	SP-01-SO	SP-02-SO	WS-01-SO
Date Collected:		8/5/2014	8/6/2014	8/5/2014	8/6/2014	8/6/2014	8/6/2014	8/6/2014	8/6/2014	8/7/2014	8/7/2014	8/7/2014
Status:		Removed	Removed	Removed	Removed	Removed	Removed	Removed	Removed	Removed	Removed	In-Place
Corrosivity	--	Non-Corrosive	Non-Corrosive	--	Non-Corrosive	Non-Corrosive	Non-Corrosive	Non-Corrosive	Non-Corrosive	Non-Corrosive	Non-Corrosive	Non-Corrosive
pH	--	6.6	7.8	--	7.0	7.1	6.8	6.8	8.0	6.7	6.7	8.8
Total Solids	--	55.5	87.7	--	91%	91.6%	90.7	92.2	95.1	93.9	95.2	92.3
ADEC Fuels (AK101, AK102, AK103; mg/kg)												
Gasoline-range organics	300	16	47	ND (16)	ND (3.5)	ND (3)	ND (3.4)	ND (4.6)	ND (2.4)	ND (3.3)	ND (3.2)	ND (3)
Diesel-range organics	250	**17000**	**6800**	100	**740**	120	29	14	94	190	78	18
Residual-range organics	10000	33000	7300	350	2200	350	120	55	290	430	250	59
BTEX (EPA 8260B; mg/kg)												
Benzene	0.025	**0.34**	**0.042**	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
Toluene	6.5	ND (0.53)	**12**	ND (0.14)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.23)	ND (0.12)	ND (0.17)	ND (0.16)	ND (0.15)
Ethylbenzene	6.9	0.99	0.53	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
Xylenes (total)	63	6.3	3.1	ND (0.083)	ND (0.105)	ND (0.09)	ND (0.101)	ND (0.139)	ND (0.072)	ND (0.099)	ND (0.095)	ND (0.091)
VOCs (EPA 8260B; mg/kg)												
Dichlorodifluoromethane	140	ND (0.16)	ND (0.038)	ND (0.041)	ND (0.053)	ND (0.045)	ND (0.05)	ND (0.069)	ND (0.036)	ND (0.05)	ND (0.048)	ND (0.046)
Chloromethane	0.21	ND (0.67)	ND (0.16)	ND (0.17)	ND (0.22)	ND (0.19)	ND (0.21)	ND (0.29)	ND (0.15)	ND (0.21)	ND (0.2)	ND (0.19)
Vinyl Chloride	0.0085	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
Bromomethane	0.16	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
Chloroethane	23	ND (0.53)	ND (0.13)	ND (0.14)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.23)	ND (0.12)	ND (0.17)	ND (0.16)	ND (0.15)
Trichlorofluoromethane	86	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
1,1-Dichloroethene	0.03	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
Acetone	88	0.7 J	1.2 J	ND (0.14)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.23)	ND (0.12)	0.19 J	ND (0.16)	ND (0.15)
Iodomethane	--	ND (0.53)	ND (0.13)	ND (0.14)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.23)	ND (0.12)	ND (0.17)	ND (0.16)	ND (0.15)
Carbon Disulfide	12	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
Methylene Chloride	0.016	ND (0.53)	ND (0.13)	ND (0.14)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.23)	ND (0.12)	ND (0.17)	ND (0.16)	ND (0.15)
(trans) 1,2-Dichloroethene	0.37	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
Methyl t-Butyl Ether	1.3	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
1,1-Dichloroethane	25	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
Vinyl Acetate	100	ND (0.53)	ND (0.13)	ND (0.14)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.23)	ND (0.12)	ND (0.17)	ND (0.16)	ND (0.15)
2,2-Dichloropropane	--	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
(cis) 1,2-Dichloroethene	0.24	ND (0.11)	0.028	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
2-Butanone	59	ND (0.53)	0.14 J	ND (0.14)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.23)	ND (0.12)	ND (0.17)	ND (0.16)	ND (0.15)
Bromochloromethane	--	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
Chloroform	0.046	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
1,1,1-Trichloroethane	0.82	ND (0.11)	ND (0.025)	ND (0.0025)	ND (0.0025)	ND (0.0025)	ND (0.0025)	ND (0.0025)	ND (0.0025)	ND (0.0025)	ND (0.0025)	ND (0.0025)
Carbon Tetrachloride	0.023	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
1,1-Dichloropropene	--	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
1,2-Dichloroethane	0.016	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
Trichloroethene	0.02	ND (0.11)	**0.054**	ND (0.0025)	0.0054	0.0041	ND (0.0025)	ND (0.0025)	ND (0.0025)	ND (0.0025)	ND (0.0025)	ND (0.0025)
1,2-Dichloropropane	0.018	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
Dibromomethane	1.1	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
Bromodichloromethane	0.044	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
2-Chloroethyl Vinyl Ether	--	ND (0.53)	ND (0.13)	ND (0.14)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.23)	ND (0.12)	ND (0.17)	ND (0.16)	ND (0.15)
(cis) 1,3-Dichloropropene	--	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
Methyl Isobutyl Ketone	8.1	ND (0.53)	1	ND (0.14)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.23)	ND (0.12)	ND (0.17)	ND (0.16)	ND (0.15)
(trans) 1,3-Dichloropropene	--	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
1,1,2-Trichloroethane	0.018	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
Tetrachloroethene	0.024	ND (0.11)	ND (0.025)	ND (0.0025)	0.0034	ND (0.0025)	ND (0.0025)	ND (0.0025)	0.0055	ND (0.0025)	ND (0.0025)	ND (0.0025)
1,3-Dichloropropane	--	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
2-Hexanone	--	ND (0.53)	ND (0.13)	ND (0.14)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.23)	ND (0.12)	ND (0.17)	ND (0.16)	ND (0.15)
Dibromochloromethane	0.032	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
1,2-Dibromoethane	0.00016	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
Chlorobenzene	0.63	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
1,1,1,2-Tetrachloroethane	--	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
Styrene	0.96	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
Bromoform	0.34	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
Isopropylbenzene	51	ND (0.11)	0.25	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
Bromobenzene		ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
1,1,2,2-Tetrachloroethane	0.017	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
1,2,3-Trichloropropane	0.00053	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
n-Propylbenzene	15	ND (0.11)	0.65	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
2-Chlorotoluene	--	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
4-Chlorotoluene	--	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
1,3,5-Trimethylbenzene	23	ND (0.11)	1.4	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
tert-Butylbenzene	12	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
1,2,4-Trimethylbenzene	23	ND (0.11)	5.2	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
sec-Butylbenzene	12	ND (0.11)	0.19	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
1,3-Dichlorobenzene	28	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
p-Isopropyltoluene	--	ND (0.11)	6.1	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
1,4-Dichlorobenzene	0.64	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
1,2-Dichlorobenzene	5.1	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
n-Butylbenzene	15	ND (0.11)	0.72	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
1,2-Dibromo-3-chloropropane	--	ND (0.53)	ND (0.13)	ND (0.14)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.23)	ND (0.12)	ND (0.17)	ND (0.16)	ND (0.15)
1,2,4-Trichlorobenzene	0.85	ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
Hexachlorobutadiene	0.12	ND (0.53)	ND (0.13)	ND (0.14)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.23)	ND (0.12)	ND (0.17)	ND (0.16)	ND (0.15)
Naphthalene	20	ND (0.53)	3.4	ND (0.14)	ND (0.18)	ND (0.15)	ND (0.17)	ND (0.23)	ND (0.12)	ND (0.17)	ND (0.16)	ND (0.15)
1,2,3-Trichlorobenzene		ND (0.11)	ND (0.025)	ND (0.027)	ND (0.035)	ND (0.03)	ND (0.034)	ND (0.046)	ND (0.024)	ND (0.033)	ND (0.032)	ND (0.03)
SVOCs (8270D mg/kg)												
Acenaphthene	180	ND (0.64)	0.91	--	ND (0.032)	ND (0.0064)	ND (0.0064)	ND (0.0064)	ND (0.0064)	ND (0.064)	ND (0.032)	ND (0.0064)
Acenaphthylene	180	ND (0.67)	ND (0.13)	--	ND (0.034)	ND (0.0067)	ND (0.0067)	ND (0.0067)	ND (0.0067)	ND (0.067)	ND (0.034)	ND (0.0067)
Anthracene	3000	3.4 J	1.5	--	ND (0.032)	ND (0.0063)	ND (0.0063)	ND (0.0063)	ND (0.0063)	ND (0.063)	ND (0.032)	ND (0.0063)
Benzidine	--	ND (6.4)	ND (1.3)	--	ND (0.32)	ND (0.064)	ND (0.064)	ND (0.064)	ND (0.064)	ND (0.64)	ND (0.32)	ND (0.064)
Benzo(a)anthracene	3.6	ND (0.43)	ND (0.086)	--	ND (0.021)	ND (0.0043)	ND (0.0043)	ND (0.0043)	ND (0.0043)	ND (0.043)	ND (0.021)	ND (0.0043)
Benzo(b)fluoranthene	12	ND (0.7)	ND (0.14)	--	ND (0.035)	ND (0.007)	ND (0.007)	ND (0.007)	ND (0.007)	ND (0.07)	ND (0.035)	ND (0.007)
Benzo(k)fluoranthene	49	ND (0.58)	ND (0.12)	--	ND (0.029)	ND (0.0058)	ND (0.0058)	ND (0.0058)	ND (0.0058)	ND (0.058)	ND (0.029)	ND (0.0058)
Benzo(g,h,i)perylene	1400	ND (0.72)	ND (0.14)	--	ND (0.036)	ND (0.0072)	ND (0.0072)	ND (0.0072)	ND (0.0072)	ND (0.072)	ND (0.036)	ND (0.0072)
Benzo(a)pyrene	0.49	ND (0.55)	ND (0.11)	--	ND (0.027)	ND (0.0055)	ND (0.0055)	ND (0.0055)	ND (0.0055)	ND (0.055)	ND (0.027)	ND (0.0055)
Bis(2-chlorethoxy)methane	--	ND (0.77)	ND (0.15)	--	ND (0.038)	ND (0.0077)	ND (0.0077)	ND (0.0077)	ND (0.0077)	ND (0.077)	ND (0.038)	ND (0.0077)
Bis(2-chloroethyl)ether	0.0022	ND (0.9)	ND (0.18)	--	ND (0.045)	ND (0.009)	ND (0.009)	ND (0.009)	ND (0.009)	ND (0.09)	ND (0.045)	ND (0.009)
Bis(2-chloroisopropyl)ether	--	ND (0.76)	ND (0.15)	--	ND (0.038)	ND (0.0076)	ND (0.0076)	ND (0.0076)	ND (0.0076)	ND (0.076)	ND (0.038)	ND (0.0076)
4-Bromophenyl-phenylether	--	ND (1.1)	ND (0.23)	--	ND (0.057)	ND (0.011)	ND (0.011)	ND (0.011)	ND (0.011)	ND (0.11)	ND (0.057)	ND (0.011)
2-Chloronaphthalene	120	ND (0.64)	ND (0.13)	--	ND (0.032)	ND (0.0064)	ND (0.0064)	ND (0.0064)	ND (0.0064)	ND (0.064)	ND (0.032)	ND (0.0064)
4-Chlorophenyl-phenylether	--	ND (0.63)	ND (0.12)	--	ND (0.031)	ND (0.0063)	ND (0.0063)	ND (0.0063)	ND (0.0063)	ND (0.063)	ND (0.031)	ND (0.0063)
Chrysene	360	ND (0.56)	ND (0.11)	--	ND (0.028)	ND (0.0056)	ND (0.0056)	ND (0.0056)	ND (0.0056)	ND (0.056)	ND (0.028)	ND (0.0056)
Dibenz(a,h)anthracene	--	ND (0.82)	ND (0.16)	--	ND (0.041)	ND (0.0082)	ND (0.0082)	ND (0.0082)	ND (0.0082)	ND (0.082)	ND (0.041)	ND (0.0082)
3,3-Dichlorobenzidine	0.19	ND (7.9)	ND (1.6)	--	ND (0.4)	ND (0.079)	ND (0.079)	ND (0.079)	ND (0.079)	ND (0.79)	ND (0.4)	ND (0.079)
2,4-Dinitrotoluene	0.0093	ND (0.61)	ND (0.12)	--	ND (0.03)	ND (0.0061)	ND (0.0061)	ND (0.0061)	ND (0.0061)	ND (0.061)	ND (0.03)	ND (0.0061)
2,6-Dinitrotoluene	0.0094	ND (0.74)	ND (0.15)	--	ND (0.037)	ND (0.0074)	ND (0.0074)	ND (0.0074)	ND (0.0074)	ND (0.074)	ND (0.037)	ND (0.0074)
Fluoranthene	1400	1.4 J	ND (0.099)	--	ND (0.025)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.005)	ND (0.05)	ND (0.025)	ND (0.005)
Fluorene	220	2 J	2.2	--	ND (0.034)	ND (0.0068)	ND (0.0068)	ND (0.0068)	ND (0.0068)	ND (0.068)	ND (0.034)	ND (0.0068)
Hexachlorobenzene	0.047	ND (0.86)	ND (0.17)	--	ND (0.043)	ND (0.0086)	ND (0.0086)	ND (0.0086)	ND (0.0086)	ND (0.086)	ND (0.043)	ND (0.0086)
Hexachloro-1,3-butadiene	0.12	ND (1)	ND (0.2)	--	ND (0.05)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.1)	ND (0.05)	ND (0.01)
Hexachlorocyclopentadiene	1.3	ND (5.9)	ND (1.2) J	--	ND (0.29) J	ND (0.059) J	ND (0.059) J	ND (0.059) J	ND (0.059) J	ND (0.59) J	ND (0.29) J	ND (0.059)
Hexachloroethane	0.21	ND (1.3)	ND (0.27)	--	ND (0.067)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.13)	ND (0.067)	ND (0.013)
Indeno(1,2,3-cd)pyrene	4.9	ND (0.77)	ND (0.15)	--	ND (0.039)	ND (0.0077)	ND (0.0077)	ND (0.0077)	ND (0.0077)	ND (0.077)	ND (0.039)	ND (0.0077)
Isophorone	3.1	**6.8 J**	2 J	--	ND (0.026)	ND (0.0052)	ND (0.0052)	ND (0.0052)	ND (0.0052)	ND (0.052)	ND (0.026)	ND (0.0052)
Naphthalene	20	1.6 J	7.3	--	ND (0.044)	ND (0.0089)	ND (0.0089)	ND (0.0089)	ND (0.0089)	ND (0.089)	ND (0.044)	ND (0.0089)

TABLE 4: Removal Phase I Detections Summary
2014 Removal Action Report
Nikiski Completions Facility
Baker Hughes Oilfield Services, Inc.
Nikiski, Alaska

Location:	ADEC Soil Cleanup Levels[1]	Drum Contents	Steel UST/Oil-Water Separator Soil/Contents	Excavation Confirmation						Stockpile		Waste Water Sump Soil
Sample ID (14-BHI-):		DR-01-SL	TA-01-SL	EX-01-SO	EX-02-SO	EX-03-SO	EX-04-SO	EX-05-SO (DUP)	EX-06-SO	SP-01-SO	SP-02-SO	WS-01-SO
Date Collected:		8/5/2014	8/6/2014	8/5/2014	8/6/2014	8/6/2014	8/6/2014	8/6/2014	8/6/2014	8/7/2014	8/7/2014	8/7/2014
Nitrobenzene	0.094	ND (0.7)	ND (0.14)	--	ND (0.035)	ND (0.007)	ND (0.007)	ND (0.007)	ND (0.007)	ND (0.07)	ND (0.035)	ND (0.007)
n-Nitrosodimethylamine	0.000053	ND (6.5)	ND (1.3)	--	ND (0.32)	ND (0.065)	ND (0.065)	ND (0.065)	ND (0.065)	ND (0.65)	ND (0.32)	ND (0.065)
n-Nitrosodiphenylamine	15	7 J	ND (0.12)	--	ND (0.03)	ND (0.0059)	ND (0.0059)	ND (0.0059)	ND (0.0059)	ND (0.059)	ND (0.03)	ND (0.0059)
n-Nitrosodi-n-propylamine	0.0011	ND (0.91)	ND (0.18)	--	ND (0.045)	ND (0.0091)	ND (0.0091)	ND (0.0091)	ND (0.0091)	ND (0.091)	ND (0.045)	ND (0.0091)
Phenanthrene	3000	4.3 J	3	--	ND (0.026)	ND (0.0053)	ND (0.0053)	ND (0.0053)	ND (0.0053)	ND (0.053)	ND (0.026)	ND (0.0053)
Benzylbutyl phthalate	920	ND (1)	6.8 J	--	ND (0.052)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.01)	ND (0.1)	ND (0.052)	ND (0.01)
Bis(2-ethylhexyl)phthalate	13	**220**	**39**	--	0.22 J	0.039 J	ND (0.011)	ND (0.012)	0.061 J	1 J	0.49 J	ND (0.012) J
Di-n-butyl phthalate	80	ND (1.1)	ND (0.22)	--	ND (0.054)	ND (0.011)	ND (0.0069)	ND (0.011)	ND (0.011)	ND (0.11)	ND (0.054)	ND (0.011)
Diethyl phthalate	130	ND (0.69)	ND (0.14)	--	ND (0.034)	ND (0.0069)	ND (0.0054)	ND (0.0069)	ND (0.0069)	ND (0.069)	ND (0.034)	ND (0.0069)
Dimethyl phthalate	1100	ND (0.54)	ND (0.11)	--	ND (0.027)	ND (0.0054)	ND (0.0091)	ND (0.0054)	ND (0.0054)	ND (0.054)	ND (0.027)	ND (0.0054)
Di-n-octyl phthalate	3100	ND (0.91)	ND (0.18)	--	ND (0.045)	ND (0.0091)	ND (0.0091)	ND (0.0091)	ND (0.0091)	ND (0.091)	ND (0.045)	ND (0.0091)
Pyrene	1000	2.5	0.96	--	ND (0.062)	ND (0.012)	ND (0.012)	ND (0.012)	ND (0.012)	ND (0.12)	ND (0.062)	ND (0.012)
1,2,4-Trichlorobenzene	0.85	ND (0.88)	ND (0.18)	--	ND (0.044)	ND (0.0088)	ND (0.0088)	ND (0.0088)	ND (0.0088)	ND (0.088)	ND (0.044)	ND (0.0088)
4-Chloro-3-methylphenol	--	ND (0.48)	ND (0.095)	--	ND (0.024)	ND (0.0048)	ND (0.0048)	ND (0.0048)	ND (0.0048)	ND (0.048)	ND (0.024)	ND (0.0048)
2-Chlorophenol	1.5	ND (0.83)	ND (0.17)	--	ND (0.042)	ND (0.0083)	ND (0.0083)	ND (0.0083)	ND (0.0083)	ND (0.083)	ND (0.042)	ND (0.0083)
2,4-Dichlorophenol	1.3	ND (0.75)	ND (0.15)	--	ND (0.037)	ND (0.0075)	ND (0.0075)	ND (0.0075)	ND (0.0075)	ND (0.075)	ND (0.037)	ND (0.0075)
2,4-Dimethylphenol	8.8	ND (4.7)	ND (0.94)	--	ND (0.24)	ND (0.047)	ND (0.047)	ND (0.047)	ND (0.047)	ND (0.47)	ND (0.24)	ND (0.047)
4,6-Dinitro-2-methylphenol	--	ND (12)	ND (2.5)	--	ND (0.62)	ND (0.12)	ND (0.12)	ND (0.12)	ND (0.12)	ND (1.2)	ND (0.62)	ND (0.12)
2,4-Dinitrophenol	0.54	ND (9.8)	ND (2)	--	ND (0.49)	ND (0.098)	ND (0.098)	ND (0.098)	ND (0.098)	ND (0.98)	ND (0.49)	ND (0.098)
2-Nitrophenol	--	ND (1.3)	ND (0.26)	--	ND (0.065)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.013)	ND (0.13)	ND (0.065)	ND (0.013)
4-Nitrophenol	--	ND (5.2)	ND (1)	--	ND (0.26)	ND (0.052)	ND (0.052)	ND (0.052)	ND (0.052)	ND (0.52)	ND (0.26)	ND (0.052)
Pentachlorophenol	0.047	ND (4.8)	ND (0.96)	--	ND (0.24)	ND (0.048)	ND (0.048)	ND (0.048)	ND (0.048)	ND (0.48)	ND (0.24)	ND (0.048)
Phenol	68	1.4 J	ND (0.14)	--	ND (0.035)	ND (0.007)	ND (0.007)	ND (0.007)	ND (0.007)	ND (0.07)	ND (0.035)	0.013 J
2,4,6-Trichlorophenol	1.4	ND (0.78)	ND (0.16)	--	ND (0.039)	ND (0.0078)	ND (0.0078)	ND (0.0078)	ND (0.0078)	ND (0.078)	ND (0.039)	ND (0.0078)
RCRA Metals (EPA 6010C/7470 mg/kg)												
Mercury	1.4	0.65	0.026	--	0.14	0.022	0.016 J	0.016 J	0.032	0.036	0.041	0.024
Arsenic	3.9	**4.7**	3.5	--	**4.6**	**4.1**	3.6	3.8	**4.4**	3.7	3.5	**5.1**
Barium	1100	**27000**	340	--	230	99	140	74	270	150 J	410	200
Cadmium	5	ND (0.07)	0.11 J	--	0.28 J	ND (0.07)	ND (0.07)	ND (0.07)	0.21 J	0.22 J	0.1 J	ND (0.07)
Chromium	25	**230**	20	--	19	23	22	20	21	13	19	18
Lead	400	**1500**	75	--	43	25	10	10	100	28	61	12
Selenium	3.4	**3.6 J**	ND (0.74)	--	ND (0.74)	ND (0.74)	ND (0.74)	ND (0.74)	ND (0.74)	ND (0.74)	ND (0.74)	ND (0.74)
Silver	11.2	1.4 J	ND (0.28)	--	ND (0.28)	ND (0.28)	ND (0.28)	ND (0.28)	ND (0.28)	ND (0.28)	ND (0.28)	ND (0.28)
TCLP Metals (EPA 6010C/7470 mg/L)												
Mercury	--	ND (0.01)	ND (0.01)	--	--	--	--	--	--	ND (0.01)	ND (0.01)	--
Arsenic	--	ND (0.45)	ND (0.45)	--	--	--	--	--	--	ND (0.45)	ND (0.45)	--
Barium	--	3.7	2.3	--	--	--	--	--	--	ND (1.4)	1.9	--
Cadmium	--	ND (0.45)	ND (0.45)	--	--	--	--	--	--	ND (0.45)	ND (0.45)	--
Chromium	--	ND (0.45)	ND (0.45)	--	--	--	--	--	--	ND (0.45)	ND (0.45)	--
Lead	--	1.9	ND (0.45)	--	--	--	--	--	--	ND (0.45)	ND (0.45)	--
Selenium	--	ND (0.45)	ND (0.45)	--	--	--	--	--	--	ND (0.45)	ND (0.45)	--
Silver	--	ND (0.45)	ND (0.45)	--	--	--	--	--	--	ND (0.45)	ND (0.45)	--
TCLP Volitiles (EPA 8260B mg/L)												
Benzene	--	ND (0.05)	ND (0.05)	--	--	--	--	--	--	ND (0.05)	ND (0.05)	--
Carbon tetrachloride	--	ND (0.05)	ND (0.05)	--	--	--	--	--	--	ND (0.05)	ND (0.05)	--
Chlorobenzene	--	ND (0.05)	ND (0.05)	--	--	--	--	--	--	ND (0.05)	ND (0.05)	--
Chloroform	--	ND (0.25)	ND (0.25)	--	--	--	--	--	--	ND (0.25)	ND (0.25)	--
1,2-Dichloroethane	--	ND (0.05)	ND (0.05)	--	--	--	--	--	--	ND (0.05)	ND (0.05)	--
1,1-Dichloroethene	--	ND (0.05)	ND (0.05)	--	--	--	--	--	--	ND (0.05)	ND (0.05)	--
2-Butanone (MEK)	--	ND (0.5)	ND (0.5)	--	--	--	--	--	--	ND (0.5)	ND (0.5)	--
Tetrachloroethene	--	ND (0.05)	ND (0.05)	--	--	--	--	--	--	ND (0.05)	ND (0.05)	--
Trichloroethene	--	ND (0.05)	ND (0.05)	--	--	--	--	--	--	ND (0.05)	ND (0.05)	--
Vinyl chloride	--	ND (0.05)	ND (0.05)	--	--	--	--	--	--	ND (0.05)	ND (0.05)	--
TCLP Semi-Volitiles (EPA 8270D mg/L)												
1,4-Dichlorobenzene	--	ND (0.1)	ND (0.1)	--	--	--	--	--	--	ND (0.1)	ND (0.1)	--
2,4-Dinitrotoluene	--	ND (0.1)	ND (0.1)	--	--	--	--	--	--	ND (0.1)	ND (0.1)	--
Hexachlorobenzene	--	ND (0.1)	ND (0.1)	--	--	--	--	--	--	ND (0.1)	ND (0.1)	--
Hexachloro-1,3-butadiene	--	ND (0.1)	ND (0.1)	--	--	--	--	--	--	ND (0.1)	ND (0.1)	--
Hexachloroethane	--	ND (0.1)	ND (0.1)	--	--	--	--	--	--	ND (0.1)	ND (0.1)	--
Nitrobenzene	--	ND (0.1)	ND (0.1)	--	--	--	--	--	--	ND (0.1)	ND (0.1)	--
Pyridine	--	ND (0.1)	ND (0.1)	--	--	--	--	--	--	ND (0.1)	ND (0.1)	--
3&4-Methyl Phenol	--	ND (0.1)	ND (0.1)	--	--	--	--	--	--	ND (0.1)	ND (0.1)	--
2-Methylphenol	--	ND (0.1)	ND (0.1)	--	--	--	--	--	--	ND (0.1)	ND (0.1)	--
Pentachlorophenol	--	ND (0.1)	ND (0.1)	--	--	--	--	--	--	ND (0.1)	ND (0.1)	--
2,4,5-Trichlorophenol	--	ND (0.1)	ND (0.1)	--	--	--	--	--	--	ND (0.1)	ND (0.1)	--
2,4,6-Trichlorophenol	--	ND (0.1)	ND (0.1)	--	--	--	--	--	--	ND (0.1)	ND (0.1)	--

Notes: Results above ADEC cleanup values are underlined & bolded.
[1] = 18 AAC 75.345, Table B1

Key:
-- = Analysis Not Performed
ADEC = Alaska Department of Environmetal Conservatio
AK = Alaska
BTEX = Benzene, toluene, ethylbenzene, xylenes
DUP = Duplicate of 14-BHI-EX-04-SO
EPA = Envrinonmental Proctection Agency
J = Estimated Value
mg/kg = Milligrams per kilogram
mg/L = Milligram per liter
ND = Analyte not detected above the RDL
PCBs = Polychlorinated Biphenyls
RCRA = Resource Conservation and Recovery Act
SVOC = Semi-volatile organic compounds
TCLP = Toxicity Characteristic Leaching Procedure
VOC = Volatile organic compunds

TABLE 5: Removal Phase II Analytical Results Summary
2014 Removal Action Report
Nikiski Completions Facility
Baker Hughes Oilfield Services, Inc.
Nikiski, Alaska

Location:	ADEC Soil Cleanup Levels[1]	Excavation Confirmation	Soil Stockpile	Injection Point			Underground Tank		
Sample ID (14-BHI-):		EX-07-SO	SP-03-SO	IP-01-SO	IP-02-SO	IP-03-SO	UT-01-SO	UT-02-SO	UT-03-SO (Dup of UT-02)
Date Collected:		8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014
Total Solids (%)	--	95.8	62.8	95.7	94.8	85.2	95.5	96.6	96.7
ADEC Fuels (AK101, AK102, AK103; mg/kg)									
Gasoline-range organics	300	ND	**350**	ND	ND	ND	ND	ND	ND
Diesel-range organics	250	ND	**47000**	**320**	32	**2600**	**270**	12	ND
Residual-range organics	10000	**28**	**83000**	970	100	6200	660	41	ND
BTEX (EPA 8260B; mg/kg)									
Benzene	0.025	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
Toluene	6.5	ND (0.14)	**26**	ND (0.17)	ND (0.19)	ND (0.34)	ND (0.25)	ND (0.23)	ND (0.20)
Ethylbenzene	6.9	ND (0.028)	**13**	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
Xylenes (total)	63	ND (0.084)	51	ND (0.102)	ND (0.114)	ND (0.080)	ND (0.148)	ND (0.139)	ND (0.121)
VOCs (EPA 8260B; mg/kg)									
Dichlorodifluoromethane	140	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
Chloromethane	0.21	ND (0.14)	ND (0.80)	ND (0.17)	ND (0.19)	ND (0.34)	ND (0.25)	ND (0.23)	ND (0.20)
Vinyl Chloride	0.0085	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
Bromomethane	0.16	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
Chloroethane	23	ND (0.14)	ND (0.80)	ND (0.17)	ND (0.19)	ND (0.34)	ND (0.25)	ND (0.23)	ND (0.20)
Trichlorofluoromethane	86	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
1,1-Dichloroethene	0.03	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
Acetone	88	ND (0.14)	ND (0.80)	ND (0.17)	ND (0.19)	ND (0.34)	ND (0.25)	ND (0.23)	ND (0.20)
Iodomethane	--	ND (0.14)	ND (0.80)	ND (0.17)	ND (0.19)	ND (0.34)	ND (0.25)	ND (0.23)	ND (0.20)
Carbon Disulfide	12	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
Methylene Chloride	0.016	ND (0.14)	ND (0.80)	ND (0.17)	ND (0.19)	ND (0.34)	ND (0.25)	ND (0.23)	ND (0.20)
(trans) 1,2-Dichloroethene	0.37	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
Methyl t-Butyl Ether	1.3	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
1,1-Dichloroethane	25	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
Vinyl Acetate	100	ND (0.14)	ND (0.80)	ND (0.17)	ND (0.19)	ND (0.34)	ND (0.25)	ND (0.23)	ND (0.20)
2,2-Dichloropropane	--	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
(cis) 1,2-Dichloroethene	0.24	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
2-Butanone	59	ND (0.14)	ND (0.80)	ND (0.17)	ND (0.19)	ND (0.34)	ND (0.25)	ND (0.23)	ND (0.20)
Bromochloromethane	--	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
Chloroform	0.046	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
1,1,1-Trichloroethane	0.82	ND (0.0025)	ND (0.0080)	ND (0.0025)	ND (0.0025)	ND (0.0044)	ND (0.0025)	ND (0.0025)	0.0025
Carbon Tetrachloride	0.023	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
1,1-Dichloropropene	--	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
1,2-Dichloroethane	0.016	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
Trichloroethene	0.02	ND (0.0025)	**2.7**	0.0035	0.0031	ND (0.0044)	ND (0.0025)	ND (0.0025)	0.0025
1,2-Dichloropropane	0.018	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
Dibromomethane	1.1	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
Bromodichloromethane	0.044	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
2-Chloroethyl Vinyl Ether	--	ND (0.14)	ND (0.80)	ND (0.17)	ND (0.19)	ND (0.34)	ND (0.25)	ND (0.23)	ND (0.20)
(cis) 1,3-Dichloropropene	--	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
Methyl Isobutyl Ketone	8.1	ND (0.14)	ND (0.80)	ND (0.17)	ND (0.19)	ND (0.34)	ND (0.25)	ND (0.23)	ND (0.20)
(trans) 1,3-Dichloropropene	--	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
1,1,2-Trichloroethane	0.018	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
Tetrachloroethene	0.024	ND (0.0025)	**0.13**	ND (0.0025)	ND (0.0025)	**0.071**	0.003	0.0094 J	0.0049 J
1,3-Dichloropropane	--	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
2-Hexanone	--	ND (0.14)	ND (0.16)	ND (0.17)	ND (0.19)	ND (0.34)	ND (0.25)	ND (0.23)	ND (0.20)
Dibromochloromethane	0.032	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
1,2-Dibromoethane	0.00016	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
Chlorobenzene	0.63	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
1,1,1,2-Tetrachloroethane	--	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
Styrene	0.96	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
Bromoform	0.34	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
Isopropylbenzene	51	ND (0.028)	0.79	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
Bromobenzene		ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
1,1,2,2-Tetrachloroethane	0.017	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
1,2,3-Trichloropropane	0.00053	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
n-Propylbenzene	15	ND (0.028)	1.6	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
2-Chlorotoluene	--	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
4-Chlorotoluene	--	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
1,3,5-Trimethylbenzene	23	ND (0.028)	4.2	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
tert-Butylbenzene	12	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
1,2,4-Trimethylbenzene	23	ND (0.028)	13	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
sec-Butylbenzene	12	ND (0.028)	0.94	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
1,3-Dichlorobenzene	28	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
p-Isopropyltoluene	--	ND (0.028)	4.9	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
1,4-Dichlorobenzene	0.64	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
1,2-Dichlorobenzene	5.1	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
n-Butylbenzene	15	ND (0.028)	4.0	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
1,2-Dibromo-3-chloropropane	--	ND (0.14)	ND (0.80)	ND (0.17)	ND (0.19)	ND (0.34)	ND (0.25)	ND (0.23)	ND (0.20)
1,2,4-Trichlorobenzene	0.85	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
Hexachlorobutadiene	0.12	ND (0.14)	ND (0.80)	ND (0.17)	ND (0.19)	ND (0.34)	ND (0.25)	ND (0.23)	ND (0.20)
Naphthalene	20	ND (0.14)	5.7	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
1,2,3-Trichlorobenzene	--	ND (0.028)	ND (0.16)	ND (0.034)	ND (0.038)	ND (0.067)	ND (0.049)	ND (0.046)	ND (0.040)
SVOCs (8270D mg/kg)									
Acenaphthene	180	ND (0.034)	ND (2.6)	ND (0.17)	ND (0.035)	ND (0.77)	ND (0.034)	ND (0.034)	ND (0.034)
Acenaphthylene	180	ND (0.034)	1.6 J	ND (0.17)	ND (0.035)	ND (0.77)	ND (0.034)	ND (0.034)	ND (0.034)
Anthracene	3000	ND (0.034)	ND (2.6)	ND (0.17)	ND (0.035)	ND (0.77)	ND (0.034)	ND (0.034)	ND (0.034)
Benzidine	--	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
Benzo(a)anthracene	3.6	ND (0.034)	ND (2.6)	ND (0.17)	ND (0.035)	ND (0.77)	ND (0.034)	ND (0.034)	ND (0.034)
Benzo(b)fluoranthene	12	ND (0.034)	ND (2.6)	ND (0.17)	ND (0.035)	ND (0.77)	ND (0.034)	ND (0.034)	ND (0.034)
Benzo(k)fluoranthene	49	ND (0.034)	ND (2.6)	ND (0.17)	ND (0.035)	ND (0.77)	ND (0.034)	ND (0.034)	ND (0.034)
Benzo(g,h,i)perylene	1400	ND (0.034)	ND (2.6)	ND (0.17)	ND (0.035)	ND (0.77)	ND (0.034)	ND (0.034)	ND (0.034)
Benzo(a)pyrene	0.49	ND (0.034)	ND (2.6)	ND (0.17)	ND (0.035)	ND (0.77)	ND (0.034)	ND (0.034)	ND (0.034)
Bis(2-chlorethoxy)methane	--	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
Bis(2-chloroethyl)ether	0.0022	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
Bis(2-chloroisopropyl)ether	--	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
4-Bromophenyl-phenylether	--	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
2-Chloronaphthalene	120	ND (0.034)	ND (2.6)	ND (0.17)	ND (0.035)	ND (0.77)	ND (0.034)	ND (0.034)	ND (0.034)
4-Chlorophenyl-phenylether	--	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
Chrysene	360	ND (0.034)	ND (2.6)	ND (0.17)	ND (0.035)	ND (0.77)	ND (0.034)	ND (0.034)	ND (0.034)
Dibenz(a,h)anthracene	--	ND (0.034)	ND (2.6)	ND (0.17)	ND (0.035)	ND (0.77)	ND (0.034)	ND (0.034)	ND (0.034)
3,3-Dichlorobenzidine	0.19	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
2,4-Dinitrotoluene	0.0093	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
2,6-Dinitrotoluene	0.0094	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
Fluoranthene	1400	ND (0.034)	ND (2.6)	ND (1.7)	ND (0.035)	ND (0.77)	ND (0.034)	ND (0.034)	ND (0.034)
Fluorene	220	ND (0.034)	ND (2.6)	ND (1.7)	ND (0.035)	ND (0.77)	ND (0.034)	ND (0.034)	ND (0.034)
Hexachlorobenzene	0.047	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
Hexachloro-1,3-butadiene	0.12	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
Hexachlorocyclopentadiene	1.3	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
Hexachloroethane	0.21	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
Indeno(1,2,3-cd)pyrene	4.9	ND (0.034)	ND (2.6)	ND (0.17)	ND (0.035)	ND (0.77)	ND (0.034)	ND (0.034)	ND (0.034)
Isophorone	3.1	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
Naphthalene	20	ND (0.034)	1.6 J	ND (0.17)	ND (0.035)	ND (0.77)	ND (0.034)	ND (0.034)	ND (0.034)
Nitrobenzene	0.094	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)

TABLE 5: Removal Phase II Analytical Results Summary
2014 Removal Action Report
Nikiski Completions Facility
Baker Hughes Oilfield Services, Inc.
Nikiski, Alaska

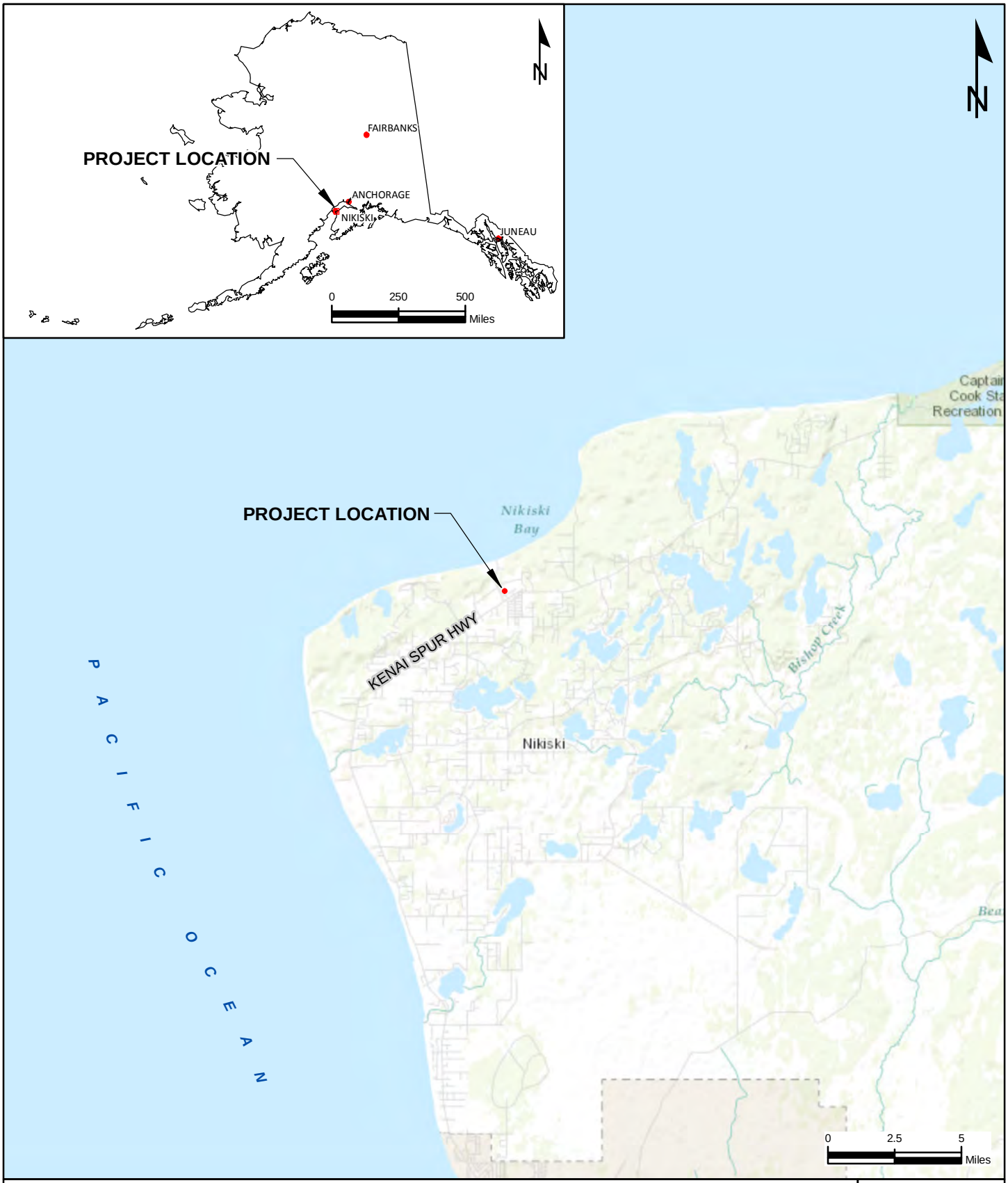
Location:	ADEC Soil Cleanup Levels[1]	Excavation Confirmation	Soil Stockpile	Injection Point			Underground Tank		
Sample ID (14-BHI-):		EX-07-SO	SP-03-SO	IP-01-SO	IP-02-SO	IP-03-SO	UT-01-SO	UT-02-SO	UT-03-SO (Dup of UT-02)
Date Collected:		8/19/2014	8/19/2014	8/19/2014	8/19/2014	8/20/2014	8/20/2014	8/20/2014	8/20/2014
n-Nitrosodimethylamine	0.000053	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
n-Nitrosodiphenylamine	15	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
n-Nitrosodi-n-propylamine	0.0011	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
Phenanthrene	3000	ND (0.034)	1 J	ND (0.17)	ND (0.035)	ND (7.8)	ND (0.034)	ND (0.034)	ND (0.034)
Benzylbutyl phthalate	920	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
Bis(2-ethylhexyl)phthalate	13	0.024 J	**640**	0.15 J	0.33 J	0.66 J	ND (0.35)	0.16 J	ND (0.34)
Di-n-butyl phthalate	80	ND (0.35)	1.4 J	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
Diethyl phthalate	130	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
Dimethyl phthalate	1100	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
Di-n-octyl phthalate	3100	ND (0.35)	ND (26)	ND (1.7)	0.014 JJ3	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
Pyrene	1000	ND (0.034)	ND (2.6)	ND (0.17)	ND (0.035)	ND (0.77)	ND (0.034)	ND (0.034)	ND (0.034)
1,2,4-Trichlorobenzene	0.85	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
4-Chloro-3-methylphenol	--	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
2-Chlorophenol	1.5	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
2,4-Dichlorophenol	1.3	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
2,4-Dimethylphenol	8.8	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
4,6-Dinitro-2-methylphenol	--	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
2,4-Dinitrophenol	0.54	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
2-Nitrophenol	--	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
4-Nitrophenol	--	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
Pentachlorophenol	0.047	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
Phenol	68	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
2,4,6-Trichlorophenol	1.4	ND (0.35)	ND (26)	ND (1.7)	ND (0.35)	ND (7.8)	ND (0.35)	ND (0.34)	ND (0.34)
RCRA Metals (EPA 6010C/7471 mg/kg)									
Mercury	1.4	0.0057 J	**2.4**	0.0034 J	0.0061 J	0.25	0.0087 J	0.021	0.019 J
Arsenic	3.9	ND (2.1)	3.2 J	ND (2.1)	ND (2.1)	0.77 J	ND (2.1)	0.74 J	1.1 J
Barium	1100	79	**22000**	180	100	**2600**	120	70	69
Cadmium	5	ND (0.52)	**33**	ND (0.52)	ND (0.53)	**7**	ND (0.52)	ND (0.52)	ND (0.52)
Chromium	25	15	**250**	**26**	13	**81**	**29**	19	16
Lead	400	4.7	**6400**	48	16	**1000**	42	3.6	4.2
Selenium	3.4	ND (2.1)	ND (3.2)	ND (2.1)	ND (2.1)	ND (2.3)	ND (2.1)	ND (2.1)	ND (2.1)
Silver	11.2	ND (1.0)	**3.0**	ND (1.0)	ND (1.0)	ND (1.2)	ND (1.0)	ND (1.0)	ND (1.0)
Nickel	86	--	--	--	--	--	15	16	14
Vanadium	3400	--	--	--	--	--	50	49	42
PCBs (EPA 8082 mg/kg)									
PCB 1016	1	--	--	--	--	--	ND (0.018)	ND (0.018)	ND (0.018)
PCB 1221	1	--	--	--	--	--	ND (0.018)	ND (0.018)	ND (0.018)
PCB1232	1	--	--	--	--	--	ND (0.018)	ND (0.018)	ND (0.018)
PCB 1242	1	--	--	--	--	--	ND (0.018)	ND (0.018)	ND (0.018)
PCB1248	1	--	--	--	--	--	ND (0.018)	ND (0.018)	ND (0.018)
PCB1254	1	--	--	--	--	--	ND (0.018)	ND (0.018)	ND (0.018)
PCB1260	1	--	--	--	--	--	0.0086 J	ND (0.018)	ND (0.018)
TCLP Metals (EPA 6010C/7470A mg/L)									
Mercury	--	--	ND (0.01)	--	--	--	--	--	--
Arsenic	--	--	ND (0.45)	--	--	--	--	--	--
Barium	--	--	2.5	--	--	--	--	--	--
Cadmium	--	--	ND (0.45)	--	--	--	--	--	--
Chromium	--	--	ND (0.45)	--	--	--	--	--	--
Lead	--	--	0.69	--	--	--	--	--	--
Selenium	--	--	ND (0.45)	--	--	--	--	--	--
Silver	--	--	ND (0.45)	--	--	--	--	--	--
TCLP Volitiles (EPA 8260B mg/L)									
Benzene	--	--	ND (0.05)	--	--	--	--	--	--
Carbon tetrachloride	--	--	ND (0.05)	--	--	--	--	--	--
Chlorobenzene	--	--	ND (0.05)	--	--	--	--	--	--
Chloroform	--	--	ND (0.05)	--	--	--	--	--	--
1,2-Dichloroethane	--	--	ND (0.05)	--	--	--	--	--	--
1,1-Dichloroethene	--	--	ND (0.05)	--	--	--	--	--	--
2-Butanone (MEK)	--	--	ND (0.05)	--	--	--	--	--	--
Tetrachloroethene	--	--	ND (0.05)	--	--	--	--	--	--
Trichloroethene	--	--	ND (0.05)	--	--	--	--	--	--
Vinyl chloride	--	--	ND (0.05)	--	--	--	--	--	--
TCLP Semi-Volitiles (EPA 8270C mg/L)									
1,4-Dichlorobenzene	--	--	ND (0.10)	--	--	--	--	--	--
2,4-Dinitrotoluene	--	--	ND (0.10)	--	--	--	--	--	--
Hexachlorobenzene	--	--	ND (0.10)	--	--	--	--	--	--
Hexachloro-1,3-butadiene	--	--	ND (0.10)	--	--	--	--	--	--
Hexachloroethane	--	--	ND (0.10)	--	--	--	--	--	--
Nitrobenzene	--	--	ND (0.10)	--	--	--	--	--	--
Pyridine	--	--	ND (0.10)	--	--	--	--	--	--
3&4-Methyl Phenol	--	--	ND (0.10)	--	--	--	--	--	--
2-Methylphenol	--	--	ND (0.10)	--	--	--	--	--	--
Pentachlorophenol	--	--	ND (0.10)	--	--	--	--	--	--
2,4,5-Trichlorophenol	--	--	ND (0.10)	--	--	--	--	--	--
2,4,6-Trichlorophenol	--	--	ND (0.10)	--	--	--	--	--	--

Notes: Results above ADEC cleanup values are underlined & bolded.
[1] = 18 AAC 75.345, Table B1

Key:
-- = Analysis Not Performed
ADEC = Alaska Department of Environmetal Conservation
AK = Alaska
BTEX = Benzene, toluene, ethylbenzene, xylenes
DUP = Duplicate of 14-BHI-EX-04-SO
EPA = Envrinonmental Proctection Agency
J = Estimated Value
mg/kg = Milligrams per kilogram
mg/L = Milligram per liter
ND = Analyte not detected above the RDL
PCBs = Polychlorinated Biphenyls
RCRA = Resource Conservation and Recovery Act
SVOC = Semi-volatile organic compounds
TCLP = Toxicity Characteristic Leaching Procedure
VOC = Volatile organic compunds

FIGURES

(This Page Intentionally Left Blank)



Completions Facility August 2014 Removal Report
Baker Hughes Oilfield Operations, Inc.
Nikiski, Alaska

Ahtna Engineering

Site Vicinity Map

Project Number:	Figure Number:
20275.001	1
Date: 10.07.2014	
Drafted By: JC	

Prepared by jckuis, 10/8/2014; Y:\Projects\AES\Nikiski_Tool_Shop\GIS\Report\Report3\Nikiski_Fig1_Report3.mxd

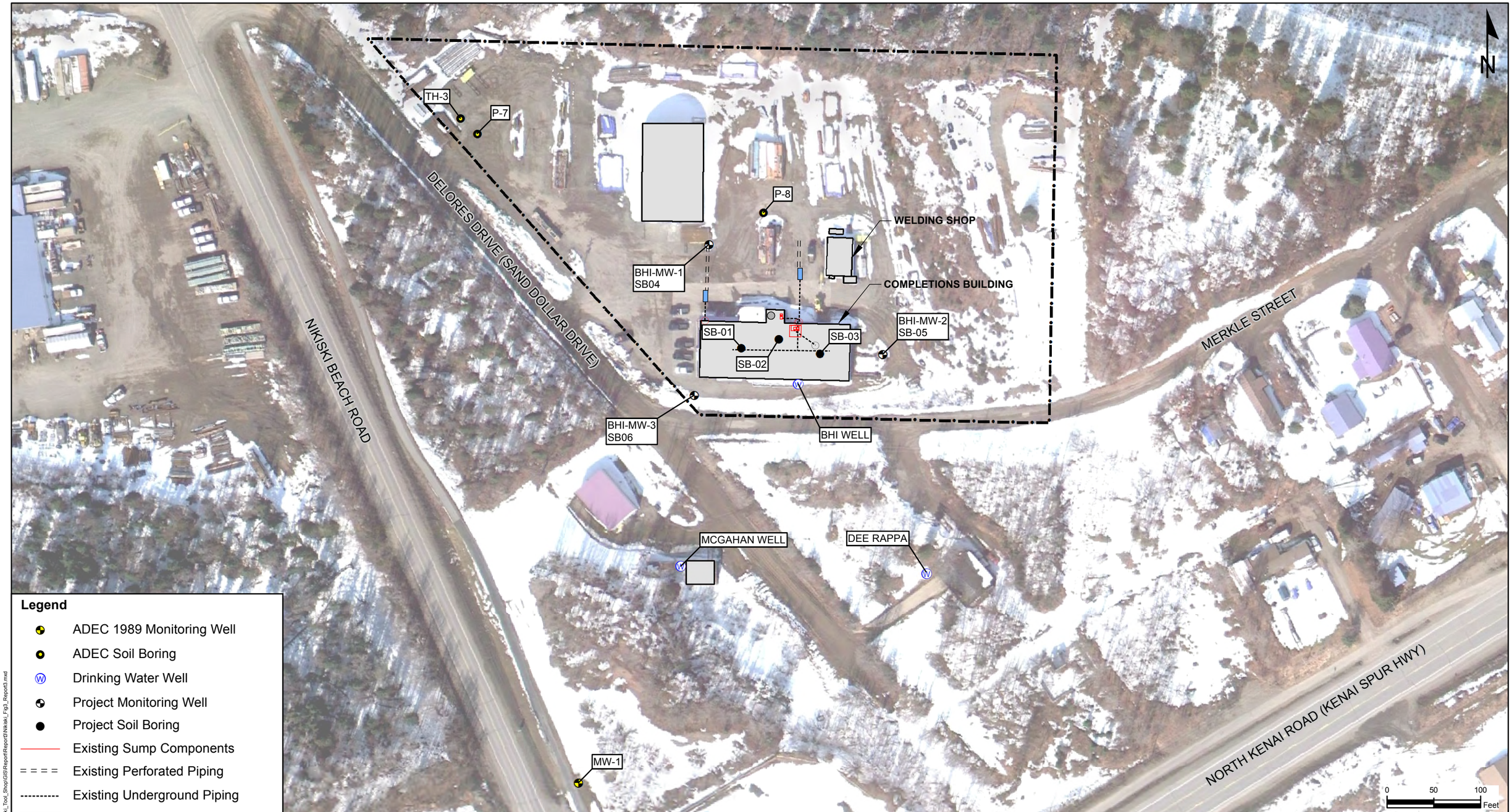
Completions Facility August 2014 Removal Report
Baker Hughes Oilfield Operations, Inc.
Nikiski, Alaska

Ahtna Engineering

Site Location Map

Project Number:	Figure Number:
20275.001	2
Date: 10.07.2014	
Drafted By: JC	

Prepared by jcous, 10/8/2014; Y:\Projects\AES\Nikiski_Tod_Shop\GIS\Report\Report3\Nikiski_Fig2_Report3_.mxd



Legend

- ADEC 1989 Monitoring Well
- ADEC Soil Boring
- Drinking Water Well
- Project Monitoring Well
- Project Soil Boring
- Existing Sump Components
- Existing Perforated Piping
- Existing Underground Piping
- Existing Building
- Property Boundary

Notes:

1. Point features surveyed by DOWL HKM (05/13/2014).
2. Aerial imagery provided by Google Earth, 2013.
3. Groundwater elevations shown in parentheses are measured in feet above mean sea level.
4. ADEC - Alaska Department of Environmental Conservation.
5. BHI - Baker Hughes, Inc.

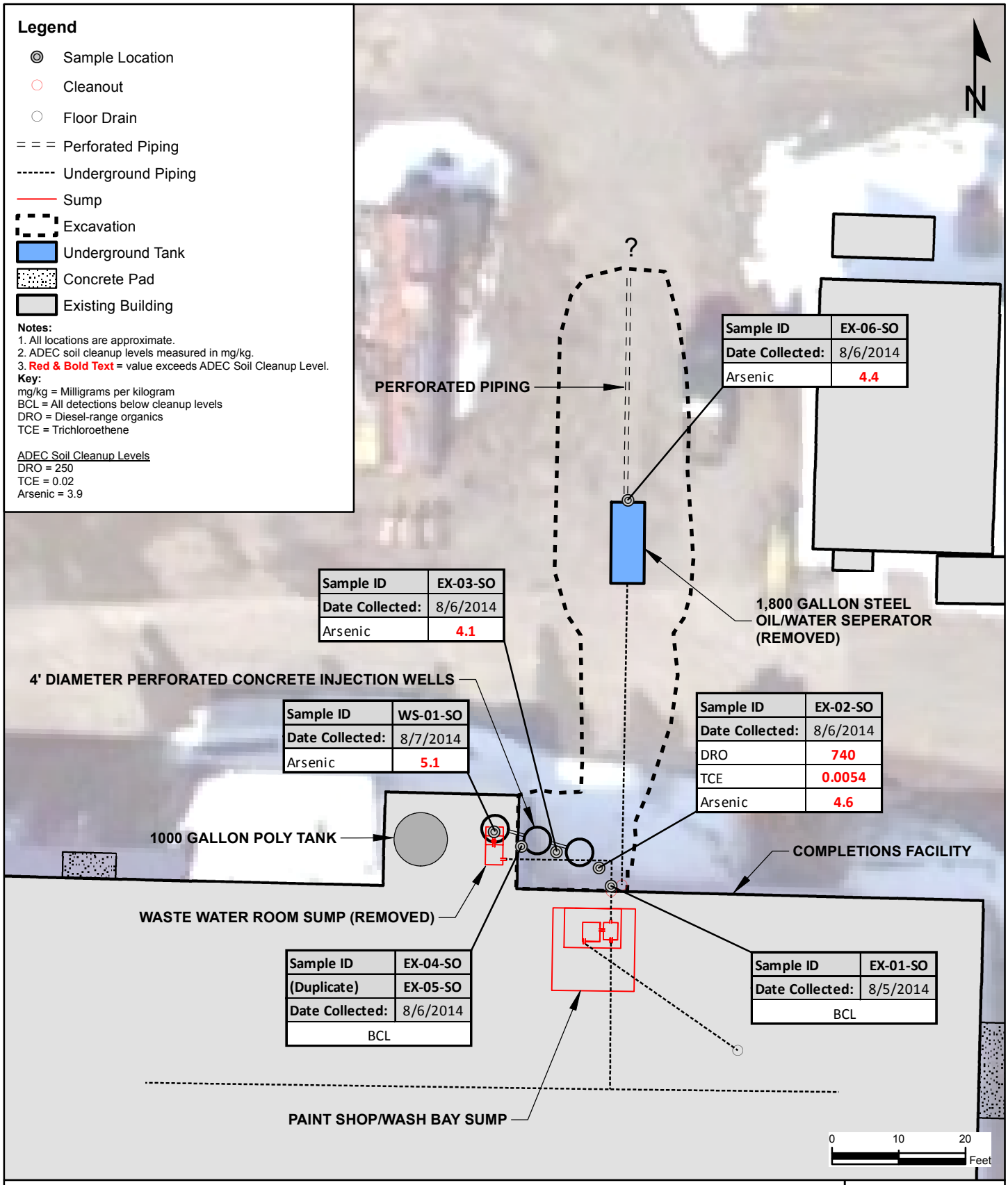
Completions Facility August 2014 Removal Report
Baker Hughes Oilfield Operations, Inc.
Nikiski, Alaska

Site Detail

Ahtna Engineering

Project Number:	Figure Number:
20275.001	3
Date: 10.07.214	
Drafted By: JC	

Prepared by jclous, 10/8/2014; Y:\Projects\AES\Nikiski_Tool_Shop\GIS\Report\Report3\Nikiski_Fig3_Report3.mxd



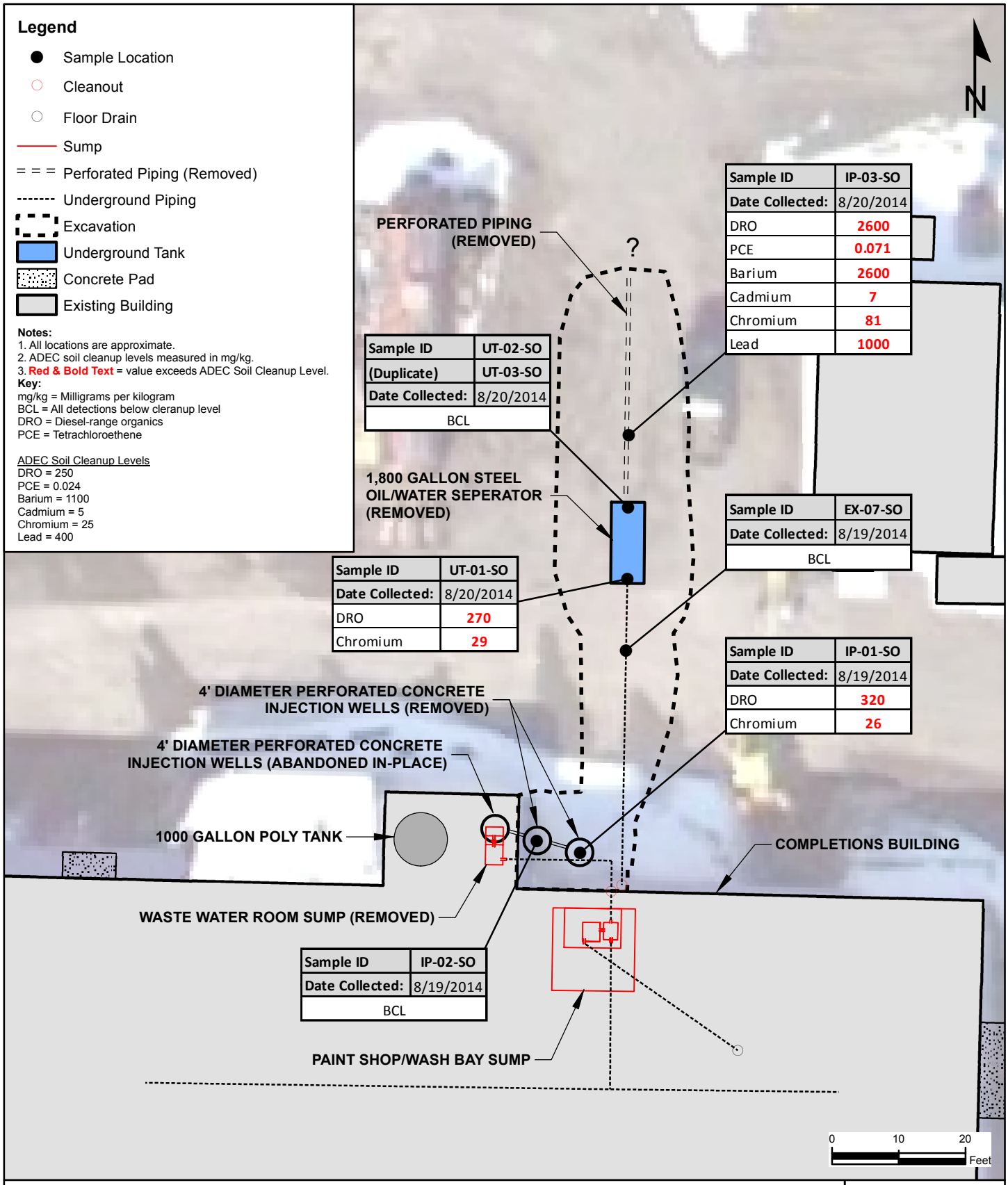
Completions Facility August 2014 Removal Report
Baker Hughes Oilfield Operations, Inc.
Nikiski, Alaska

Ahtna Engineering

Removal Phase I Sample Locations & Results Summary

Project Number: 20275.002	Figure: 4
Date: 10/8/2014	
Drafted By: J.C.	

Prepared by jobus, 10/8/2014; Y:\Projects\AES\Nikiski_Tod_Shop\GIS\Report\Report3\Nikiski_Fig4_Report3.mxd



Sample ID	IP-03-SO
Date Collected:	8/20/2014
DRO	**2600**
PCE	**0.071**
Barium	**2600**
Cadmium	**7**
Chromium	**81**
Lead	**1000**

Sample ID	UT-02-SO
(Duplicate)	UT-03-SO
Date Collected:	8/20/2014
BCL	

Sample ID	EX-07-SO
Date Collected:	8/19/2014
BCL	

Sample ID	UT-01-SO
Date Collected:	8/20/2014
DRO	**270**
Chromium	**29**

Sample ID	IP-01-SO
Date Collected:	8/19/2014
DRO	**320**
Chromium	**26**

Sample ID	IP-02-SO
Date Collected:	8/19/2014
BCL	

Completions Facility August 2014 Removal Report
Baker Hughes Oilfield Operations, Inc.
Nikiski, Alaska

Ahtna Engineering

Removal Phase II Sample Locations & Results Summary

Project Number: 20275.002
Date: 10/8/2014
Drafted By: J.C.
Figure: 5

Prepared by jobus, 10/8/2014; Y:\Projects\AES\Nikiski_Tod_Shop\GIS\Report\Report3\Nikiski_Fig5_Report3xxxx.mxd

APPENDIX A

FIELD NOTES

(This Page Intentionally Left Blank)

Outdoor writing products®
for Outdoor writing people

RECYCLED RECYCLABLE

This cover contains post-consumer recycled material

Rite in the Rain

A patented, environmentally responsible, all-weather writing paper that sheds water and enables you to write anywhere, in any weather.

Using a pencil or all-weather pen, *Rite in the Rain* ensures that your notes survive the rigors of the field, regardless of the conditions.

JL DARLING LLC
Tacoma, WA 98424-1017 USA
www.RiteintheRain.com

Item No. 353N
ISBN: 978-1-932149-90-6

©

Made in the USA
US Pat No. 6,863,940

6 32281 35321 8

Baker Hughes

Rite in the Rain®
ALL-WEATHER
FIELD
№ 353N

Renewal
2014

CONTENTS

PAGE	REFERENCE	DATE

BHI 8-5-14 Nikiski, AK

0800 Arrive at Bailey's Rental, pick up compressor & jackhammer.

0930 Complete safety meeting with Loren, Joel, Dan C., Olie, Victor, and two Emerald vactruck operators. Sign in with BHI front desk.

0945 Support paint shop sump; BHI removed exterior bell rail.

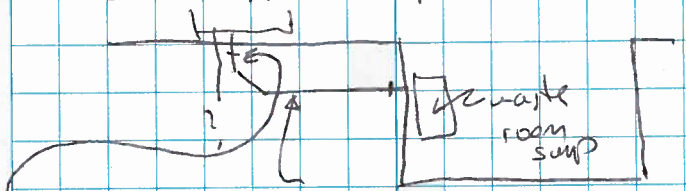
1030 Support washroom/waste room sump, move poly tank to side.

1100 Begin excavation on north side of building.

1230 Break for lunch. Excavated to piping & apparent tank near building.

1450 Collect sample of sludge from support removed piping, placed in drum. DR-01

1500 Collect sample from below sump outfall, paint shop side.



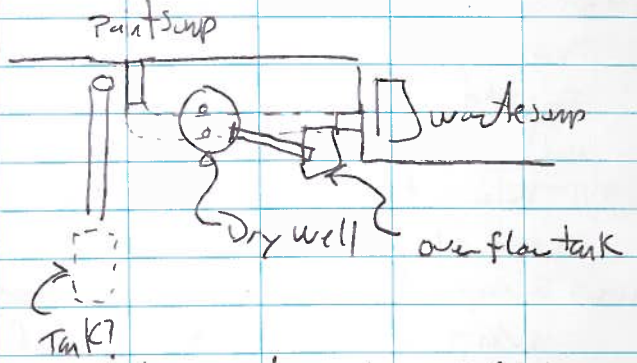
Sample #2 removed portion of pipe
14-BHI-EX-01-S0

8/5/14

Rite in the Rain.

BHI 8-5-14 Nikiski, AK

1720 End excavation. Begin cleanup.
Uncovered a drywell, photographs taken.



Uncovered/removed well top, sides inside are perforated concrete, holes appear plugged.

1730 Fill sand bags & cover excavated dirt piles. Two piles, one over-burden/clean, one suspect impacted.

1800 Depart site after covering stockpiled soil.

8/5/14

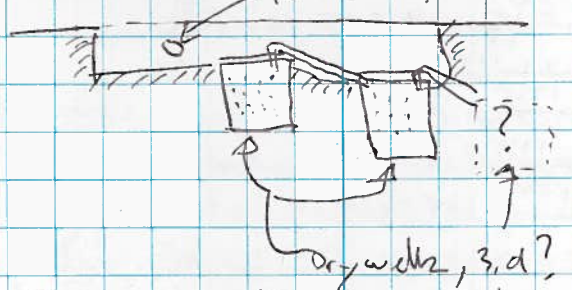
BHI 8-6-14 Nikiski, AK

0710 Arrive on site, conduct safety meeting with Dan C., Dan F., Oleg, Victor.

0725 Begin sump demo. Excavate around second drywell.

0920 Susan arrives, phone call with EPA & DEC.
DF Jennifer with EPA states drywell needs to be closed in an approved environmentally sound manner, defers to DEC. One sample is required by EPA out/below point of injection. Recommended analysis include VOCs, metals, possibly SVOCs. Defers to DEC with regard to all possible analytes.

1000 Open second well & photographs.
Cross-section: pipe from paint/wash sump.



1030 Begin excavation of second pipe.
1130 Begin excavation of second pipe, i.e.

8/6/14

Rite in the Rain

BMI 8-6-14 Nikiski

1330 ADEC conducts site visit. Turns site over to EPA well injection program.

1430 Call with EPA regarding abandon-in place & required sampling locations and methods. EPA requests VOC, SVOC, RCRA metal analysis. Samples along side of tank are approved. EPA recommends leaving excavation open until analytical results received.

1448 Discuss disposal of water/oil separator with Lori at Emerald. Best option is sample the contents before removing.

1500 Begin site cleanup & sampling.

Sample Date	Time	Number
8/6/14	1630 ~~1715~~ DF	14-BMI-TA-01-SL
	1730 ~~1725~~ DF	14-BMI-EX-02-SO
	1735 ~~1725~~ DF	14-BMI-EX-03-SO
	1740 ~~1730~~ DF	14-BMI-EX-04-SO
8/6/14	1741 ~~1735~~ DF	14-BMI-EX-05-SO

Ex02 - Ex05 collected for VOCs, ~~PAHs~~ SVOCs, metals. DF

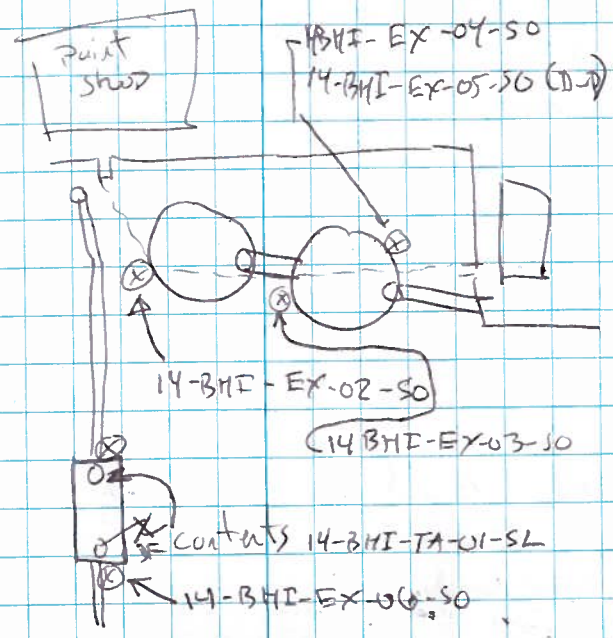
TA-01 collected for TCLP VOCs, SVOCs, metals & VOCs & metals & SVOCs.

1750 ~~1740~~ DF collect 14-BMI-EX-06-SO at north end of tank.

8/6/14

BMI 8-6-14 Nikiski

1741 Site sample location figure.



EX-02-SO collected at 2.5-3' below top of tank
EX-03-SO collected at 2.5-3' below top of tank
EX-04 & 05 collected at 2.5-3' below top of tank.
1830 Complete site cleanup & secure, depart. For day.

8/6/14

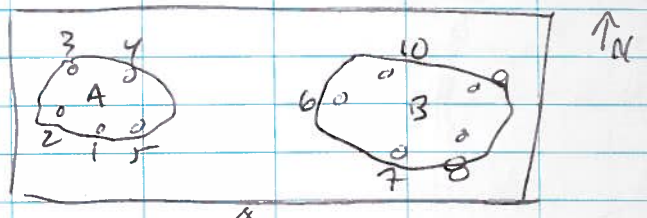
Rite in the Rain

BHI 8-7-14 Nikiski

0700 Arrive. Site safety meeting.

0715 Begin sump removal. Grout in sump in paint shop.

0735 Field screen excavated soil from adjacent to building:



Pile A = suspect impacted ~20 CY.
Pile B = overburden, suspect clean ~40 CY

PID location	No#	Result
A	1	19.5 *
A	2	18.7
A	3	3.4
A	4	5.3
A	5	12.5
B	6	8.8 *
B	7	4.6
B	8	7.2
B	9	3.3
B	10	4.4

8/7/14

BHI 8-7-14 Nikiski

0805 Collect sample SP01 from PID Location #1, Pile A.

0815 Collect sample SP02 from PID Location #6, Pile B.

0820 waste water room sump floor is opened, collect sample WS-01 from soil below sump.

0945 Collect sample of concrete from sump for TCLP.

Sample log:

Time	Date	
1450	8/5/14	14-BHI-DR-01-SL VOCs & % solid only
1500	8/5/14	14-BHI-EX-01-SO VOCs, %S, SVOCs, metals, 1 jar TCLP
1630	8/6/14	14-BHI-TA-01-SL VOCs, %S, SVOCs, metals, 2 jars TCLP
1730 - 1745	8/6/14	14-BHI-EX-02-SO through 14-BHI-EX06-SO VOCs, %S, SVOCs, metals 1 jar TCLP

1700 Complete work. Measure sump at 24" water. Depart to AVC.

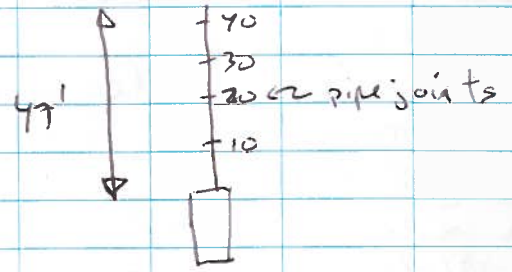
8/7/14

Rite in the Rain

BHI 8-19-14 Nikiski

0800 Arrive at site, meet with Colin. Conduct safety meeting. Weather is clear and calm ~55°F.

0830 Begin excavation of pipe leading to steel UST. Field screen at 4 locations.



0900 PID results
#1 = 4.0 -10'
#2 = 1.6 -20'
#3 = 0.8 -30'
#4 = 1.0 -40'

0910 Collect sample 14-Ex-07-50 at PID location #1, 10' south of steel tank.

1035 Continue backfilling sump & pipeline excavation.

1145 Complete moving soil stockpile to excavation for use as backfill

Dell 8/19/14

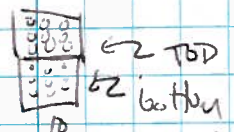
BHI 8-19-14 Nikiski

1300 Begin excavation of ~~west~~ east DF well ~~sump~~.

1335 Collect sample of ~~sump~~ DF well sediment.

1340 Collect sample of soil below ~~sump~~ DF well at point of injection. ~~sump~~ DF well is two 4' diameter 3' high rings with no bottom:

well sediment stockpiled = SP03 ~10CY



1400 Complete excavation of ~~west~~ DF west well adjacent to building. Completely remove ~~sump~~ DF well and sediments.

1405 Collect sample below point of injection for west well. West well is only one 3' concrete ring.

1430 Begin backfilling former injection well location up to pipe entering 3rd well.

1830 Complete site cleanup, fence excavation, cover stockpile & concrete. Depart site.

Dell 8/19/14

Rite in the Rain

BMI 8-20-14 Nikiski

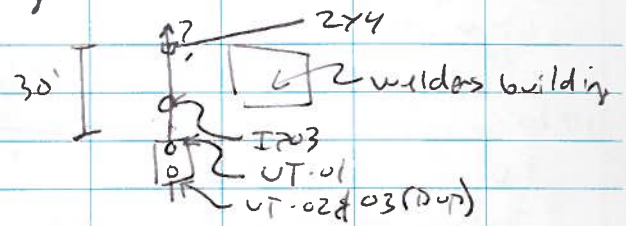
0730 Meet olick & Victor at AIH, pickup metal saw for re-bar.

0800 Pickup concrete/asphalt saw.

0830 Arrive at site, meet with Emerald.

0910 Emerald returns to shop for larger 4" hose. Dan C. shoots asphault grade.

1200 Excavate north along perforated pipe leading from steel tank



1300 Remove 30' of perforated piping. Collect sample at 10'. Emerald removed ~180 gal of solids & liquids, mostly solids from steel tank. Prism Arrives to inspect tank. Pull tank.

1400 Collect 14-BMI-IP-03-SO at 10' north of north end of steel tank, below perf-pipe.

1425 Collect sample from north end (lower end) of tank from excavator bucket sample 14-BMI-UT-01-SO.

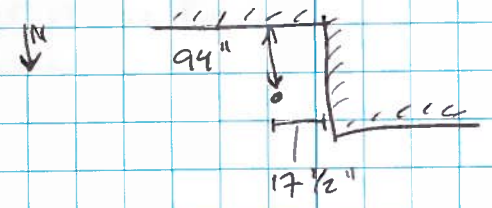
8-20-14

BMI 8-20-14 Nikiski

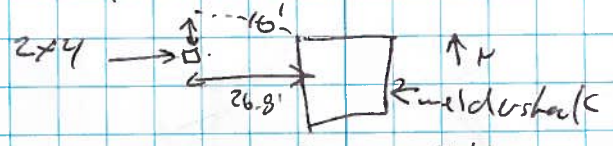
1430 Collect sample 14-BMI-IP-02-SO from south end of tank, from excavator bucket.

1435 Collect duplicate sample 14-BMI-IP-03-SO at south end of tank.

1500 Transitmix come & filled 3rd inject. well with icy concrete slurry. Did not fill fully. Return pipe is at:



1600 Prism returns & takes tank off-site. Complete sample packaging. Continue backfilling. Insert 2x4 riser at end of perf. pipe.



2x4 is 16' south of NW building corner and 26.8' west of building.

1830 Complete backfill. Depart site.

8-20-14

Rite in the Rain

BHI 8-21-14 Nikiski

0700 Arrive at site.
0730 Begin grading for pavement.
0945 Collect bulk sample of injection well wall concrete for TCLP analysis. 14-BHI-CON-02.
1330 Frank & Caldwell Depart site for day.

8/21/14

BHI 8-22-14 Nikiski

0700 Arrive at site, meet paving contractor.
1030 grade complete, informed by contractor paving tower is down, will attempt tomorrow.
1345 finish additional clean up work, assess paintshop for removal.
1645 Arrive ~~on~~ DF Anchorage, finish demob.

8/22/14

Rite in the Rain

APPENDIX B

PHOTOGRAPHIC LOG

(This Page Intentionally Left Blank)

Photograph 1: West. Waste Water Room area prior to excavation.

Photograph 2: West. Piping connection paint shop sump and waste water room sump.

Photograph 3: West. Concrete injection wells, cover removed from western well.

Photograph 4: West. West injection well, note overflow pipe exiting towards west.

Photograph 5: South. Steel tank and piping.

Photograph 6: North. Steel oil-water separator/UST and piping.

Photograph 7: South. Waste water room sump before removal.

Photograph 8: South. Waste water room sump after removal.

Photograph 9: South. Paint shop/washbay sump exit piping at building foundation.

Photograph 10: South. Field screening along pipe run from shop/washbay sump to

Photograph 11: West. Uncovered concrete injection wells.

Photograph 12: South. Concrete injection wells.

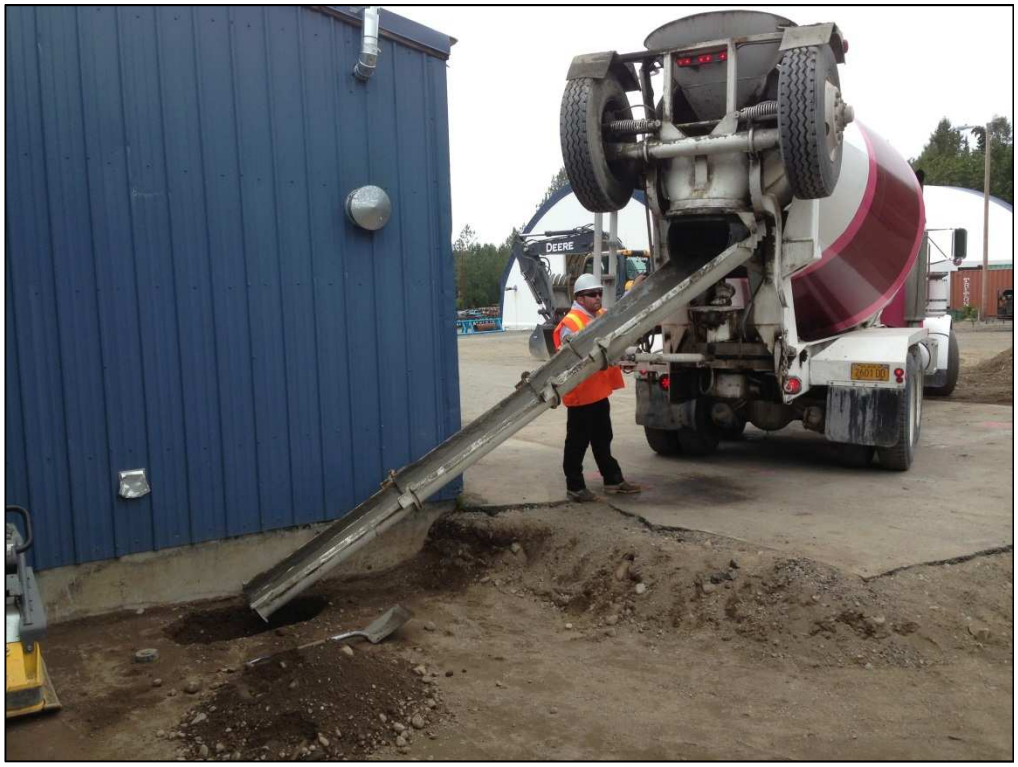
Photograph 13: South. Concrete injection well removal.

Photograph 14: West. Concrete injection wells after both removed.

Photograph 15: Down/South. North end of oil/water separator/UST.

Photograph 16: North. Emerald cleaning out oil/water separator/UST.

Photograph 17: North. Filling 3rd concrete-cased injection well with cement.



Photograph 18: West. Filling 3rd concrete injection well with cement.

Photograph 19: South. Perforated piping exposed for 30 feet, north of UST.

Photograph 20: North. Removing first 30 feet of perforated piping north of UST.

Photograph 21: South. Removing oil/water separator/UST.

Photograph 22: North. Excavation after tank removal.

Photograph 23: East. Removed oil/water separator/UST.

Photograph 24: West. Removed oil/water separator/UST.

Photograph 25: South. Backfilling and compacting excavation area.

Photograph 26: South. Area ready for asphalt.

APPENDIX C

LABORATORY ANALYTICAL RESULTS; ADEC CHECKLISTS

(This Page Intentionally Left Blank)

Laboratory Data Review Checklist

Completed by: Emily Freitas

Title: Chemist Date: 10/06/2014

CS Report Name: Report Date:

Consultant Firm: Ahtna Engineering Services

Laboratory Name: ESC Lab Sciences Laboratory Report Number: 714612

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:

      ESC is an ADEC approved laboratory

   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:

      Samples were not transferred to an additional laboratory.

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

      COC information was completed correctly.

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

      Sample 14-BHI-EX01-SO was written on the CoC, however the sample was never submitted. The client incorrectly wrote this sample on the CoC, which was confirmed via email.

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:

Sample condition documented.

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

There were no discrepancies.

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

Data quality and usability was not affected.

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

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

There were no discrepancies.

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

No corrective actions were necessary

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

Data usability was not affected.

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:

The PQLs are lower than the Cleanup Level.

e. Data quality or usability affected?
Comments:

Data quality is not affected.

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:

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

There were no affected samples.

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

Data usability is not affected

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

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

☒Yes ☐ No ☐NA (Please explain.) Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?
☒Yes ☐ No ☐NA (Please explain.) Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)
☒Yes ☐ No ☐NA (Please explain.) Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)
☒Yes ☐ No ☐NA (Please explain.) Comments:

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

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
☐Yes ☐ No ☒NA (Please explain.) Comments:

There were no affected samples.

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

Data usability is 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:

There were no failed surrogates so no data flags were assigned.

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

Data quality is not affected. Sample SVOC results were flagged.

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:

iii. All results less than PQL?
☒Yes ☐ No ☐NA (Please explain.) Comments:

iv. If above PQL, what samples are affected?
Comments:

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

Data quality was not affected by the trip blank.

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:

Barium had an RPD above the recommended DQO. Sample and duplicate results have been flagged "J".

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

Comments:

No. The sample results have been flagged appropriately.

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

☐Yes ☒ No ☐NA (Please explain.) Comments:

No equipment blank necessary. Disposable equipment was used.

i. All results less than PQL?

☐Yes ☐ No ☒NA (Please explain.) Comments:

ii. If above PQL, what samples are affected?

Comments:

NA.

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

Comments:

No.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)
   a. Defined and appropriate?

No additional data qualifiers were assigned.

☐Yes ☐ No ☒NA (Please explain.) Comments:

Laboratory Data Review Checklist

Completed by: Emily Freitas

Title: Chemist Date: 10/07/2014

CS Report Name: Report Date:

Consultant Firm: Ahtna Engineering Services

Laboratory Name: ESC Lab Sciences Laboratory Report Number: 717540

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:

      ESC is an ADEC approved laboratory

   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:

      Samples were not transferred to an additional laboratory.

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

      COC information was completed correctly.

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

      Correct analyses were requested.

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:

Sample condition documented.

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

There were no discrepancies.

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

Data quality and usability was not affected.

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

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

There were no discrepancies.

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

No corrective actions were necessary

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

Data usability was not affected.

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:

The PQLs are lower than the Cleanup Level.

e. Data quality or usability affected?
Comments:

Data quality is not affected.

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:

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

There were no affected samples.

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

Data usability is not affected

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

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)
☒Yes ☐ No ☐NA (Please explain.) Comments:

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

☒Yes ☐ No ☐NA (Please explain.) Comments:

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

☒Yes ☐ No ☐NA (Please explain.) Comments:

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

☐Yes ☒ No ☐NA (Please explain.) Comments:

The RPD for Di-n-octyl phthalate was outside of laboratory control limits in LCS WG739296.

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

Comments:

No samples were affected.

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

☐Yes ☒ No ☐NA (Please explain.) Comments:

The additional quality control criteria were within limits for all samples.

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

Comments:

Data usability is 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:

No failed surrogates

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

Comments:

Data quality is not affected.

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

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

☐Yes ☐ No ☒NA (Please explain.) Comments:

No volatile analyses were requested.

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:

iii. All results less than PQL?

☐Yes ☐ No ☒NA (Please explain.) Comments:

iv. If above PQL, what samples are affected?

Comments:

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

Comments:

Data quality was not affected by the lack of trip blank.

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)

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

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☒Yes ☐ No ☐NA (Please explain.) Comments:

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

Comments:

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

☐Yes ☒ No ☐NA (Please explain.) Comments:

No equipment blank necessary. Disposable equipment was used.

i. All results less than PQL?

☐Yes ☐ No ☒NA (Please explain.) Comments:

ii. If above PQL, what samples are affected?

Comments:

NA.

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

Comments:

No.

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

a. Defined and appropriate?

☐Yes ☐ No ☒NA (Please explain.) Comments:

No additional data qualifiers were assigned.

Laboratory Data Review Checklist

Completed by: Emily Freitas

Title: Chemist Date: 10/06/2014

CS Report Name: Report Date:

Consultant Firm: Ahtna Engineering Services

Laboratory Name: ESC Lab Sciences Laboratory Report Number: 719994

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:

      ESC is an ADEC approved laboratory

   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:

      Samples were not transferred to an additional laboratory.

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

      COC information was completed correctly.

   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:

Sample condition documented.

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

There were no discrepancies.

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

Data quality and usability was not affected.

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

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

There were no discrepancies.

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

No corrective actions were necessary

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

Data usability was not affected.

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:

The PQLs are lower than the Cleanup Level.

e. Data quality or usability affected?
Comments:

Data quality is not affected.

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:

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

There were no affected samples.

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

Data usability is not affected

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

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)
☒Yes ☐ No ☐NA (Please explain.) Comments:

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

☒Yes ☐ No ☐NA (Please explain.) Comments:

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:

3&4 Methyl Phenol and Nirtobenzene in MS batch WG742164 were recovered outside of control limits.

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:

1,4-Dichlorobenzene, 3&4-Methyl Phenol, Hexachloroethane, Nitrobenzene, and Pyridine had RPDs outside of the control limits.

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

Comments:

All additional quality control criteria were within limits so no samples were affected.

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

☐Yes ☒ No ☐NA (Please explain.) Comments:

No data flags were applied because all additional quality control criteria were within limits.

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

Comments:

Data usability is 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)

Two surrogates were outside of the control limits in the MS/MSD from the batchWG742164.

☐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:

All additional quality control criteria were within limits.

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

Data quality is not affected.

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

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)
☐Yes ☒ No ☐NA (Please explain.) Comments:

No trip blank was submitted within this SDG. Samples were for waste characterization only.

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:

iii. All results less than PQL?
☐Yes ☐ No ☒NA (Please explain.) Comments:

iv. If above PQL, what samples are affected?
Comments:

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

Data quality was not affected by the trip blank.

e. Field Duplicate

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

Duplicate counts are project wide. None was submitted within this SDG.

☐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:

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

☐Yes ☒ No ☐NA (Please explain.) Comments:

No equipment blank necessary. Disposable equipment was used.

i. All results less than PQL?

☐Yes ☐ No ☒NA (Please explain.) Comments:

ii. If above PQL, what samples are affected?

Comments:

NA.

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

Comments:

No.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)
   a. Defined and appropriate?

No additional data qualifiers were assigned.

☐Yes ☐ No ☒NA (Please explain.) Comments:

Laboratory Data Review Checklist

Completed by: Emily Freitas

Title: Chemist Date: 10/07/2014

CS Report Name: Report Date:

Consultant Firm: Ahtna Engineering Services

Laboratory Name: SGS North America Laboratory Report Number: 1143676

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:

      SGS is an ADEC approved laboratory

   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:

      Samples were not transferred to an additional laboratory.

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

      COC information was completed correctly.

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

      Correct analyses were requested.

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:

Sample condition documented.

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

There were no discrepancies.

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

Data quality and usability was not affected.

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

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

There were no discrepancies.

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

No corrective actions were necessary

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

Data usability was not affected.

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:

The PQLs are lower than the Cleanup Level.

e. Data quality or usability affected?
Comments:

Data quality is not affected.

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:

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

There were no affected samples.

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

Data usability is not affected

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

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)
☒Yes ☐ No ☐NA (Please explain.) Comments:

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

☒Yes ☐ No ☐NA (Please explain.) Comments:

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

☒Yes ☐ No ☐NA (Please explain.) Comments:

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

☒Yes ☐ No ☐NA (Please explain.) Comments:

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

Comments:

No samples were affected.

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

☐Yes ☐ No ☒NA (Please explain.) Comments:

There were no affected samples.

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

Comments:

Data usability is 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:

No failed surrogates

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

Comments:

Data quality is not affected.

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

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

☐Yes ☐ No ☒NA (Please explain.) Comments:

No trip blank was submitted within this SDG and per project requirements, none was required.

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:

iii. All results less than PQL?

☐Yes ☐ No ☒NA (Please explain.) Comments:

iv. If above PQL, what samples are affected?

Comments:

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

Comments:

Data quality was not affected by the lack of trip blank.

e. Field Duplicate

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

☐Yes ☒ No ☐NA (Please explain.) Comments:

Duplicate counts are project wide. No duplicate sample was submitted within this SDG.

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)

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

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☐Yes ☐ No ☒NA (Please explain.) Comments:

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

Comments:

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

☐Yes ☒ No ☐NA (Please explain.) Comments:

No equipment blank necessary. Disposable equipment was used.

i. All results less than PQL?

☐Yes ☐ No ☒NA (Please explain.) Comments:

ii. If above PQL, what samples are affected?

Comments:

NA.

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

Comments:

No.

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

a. Defined and appropriate?

☐Yes ☐ No ☒NA (Please explain.) Comments:

No additional data qualifiers were assigned.

Laboratory Data Review Checklist

Completed by: Emily Freitas

Title: Chemist Date: 10/07/2014

CS Report Name: Report Date:

Consultant Firm: Ahtna Engineering Services

Laboratory Name: SGS North America Laboratory Report Number: 1144058

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:

      SGS is an ADEC approved laboratory

   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:

      Samples were not transferred to an additional laboratory.

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

      COC information was completed correctly.

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

      Correct analyses were requested.

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

      Samples were hand carried to lab and dropped off immediately after sampling therefore no temperature blank was required and temperature was not documented.

   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:

Sample condition documented.

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

There were no discrepancies.

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

Data quality and usability was not affected.

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

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

There were no discrepancies.

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

No corrective actions were necessary

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

Data usability was not affected.

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:

The PQLs are lower than the Cleanup Level.

e. Data quality or usability affected?
Comments:

Data quality is not affected.

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:

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

There were no affected samples.

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

Data usability is not affected

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

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

☒Yes ☐ No ☐NA (Please explain.) Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?
☒Yes ☐ No ☐NA (Please explain.) Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)
☒Yes ☐ No ☐NA (Please explain.) Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)
☒Yes ☐ No ☐NA (Please explain.) Comments:

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

No samples were affected.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
☐Yes ☐ No ☒NA (Please explain.) Comments:

There were no affected samples.

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

Data usability is 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:

No failed surrogates

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

Data quality is not affected.

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

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)
☐Yes ☐ No ☒NA (Please explain.) Comments:

No trip blank was submitted within this SDG and per project requirements, none was required.

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:

iii. All results less than PQL?
☐Yes ☐ No ☒NA (Please explain.) Comments:

iv. If above PQL, what samples are affected?
Comments:

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

Data quality was not affected by the lack of trip blank.

e. Field Duplicate

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

Duplicate counts are project wide. No duplicate sample was submitted within this SDG.

☐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:

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

☐Yes ☒ No ☐NA (Please explain.) Comments:

No equipment blank necessary. Disposable equipment was used.

i. All results less than PQL?

☐Yes ☐ No ☒NA (Please explain.) Comments:

ii. If above PQL, what samples are affected?

Comments:

NA.

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

Comments:

No.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)
   a. Defined and appropriate?

No additional data qualifiers were assigned.

☐Yes ☐ No ☒NA (Please explain.) Comments:

Laboratory Data Review Checklist

Completed by: Emily Freitas

Title: Chemist Date: 10/07/2014

CS Report Name: Report Date:

Consultant Firm: Ahtna Engineering Services

Laboratory Name: OnSite Environmental Laboratory Report Number: 1408-059

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:

      OnSite Environmental is an ADEC approved laboratory

   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:

      Samples were not transferred to an additional laboratory.

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

      COC information was completed correctly.

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

      Correct analyses were requested.

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.)?

      Samples for AK101 were field extracted with methanol containing surrogate. Surrogate was added to sample aliquots prior to analysis in the laboratory.

☐Yes ☒ No ☐NA (Please explain.) Comments:

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

Sample condition documented.

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:

Field extraction error and corrective action was documented. All samples were received in proper containers, with preservative, and at the correct temperature

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

Data quality and usability was not affected.

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

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

Field extraction variance was identified appropriately.

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

The corrective action of adding a surrogate to an aliquot of sample prior to analysis for AK101 was documented.

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

Data usability was not affected.

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:

The PQLs are lower than the Cleanup Level.

e. Data quality or usability affected?
Comments:

Data quality is not affected.

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:

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

There were no affected samples.

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

Data usability is not affected

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

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

☒Yes ☐ No ☐NA (Please explain.) Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?
☐Yes ☐ No ☒NA (Please explain.) Comments:

No metals/inorganic analyses were requested.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)
☒Yes ☐ No ☐NA (Please explain.) Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)
☒Yes ☐ No ☐NA (Please explain.) Comments:

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

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
☐Yes ☐ No ☒NA (Please explain.) Comments:

There were no affected samples.

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

Data usability is 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:

No failed surrogates

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

Data quality is not affected.

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

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)
☒Yes ☐ No ☐NA (Please explain.) Comments:

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:

iii. All results less than PQL?
☒Yes ☐ No ☐NA (Please explain.) Comments:

iv. If above PQL, what samples are affected?
Comments:

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

Data quality was not affected by the trip blank.

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:

All RPDs were less than the specified DQOs.

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

Comments:

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

☐Yes ☒ No ☐NA (Please explain.) Comments:

No equipment blank necessary. Disposable equipment was used.

i. All results less than PQL?

☐Yes ☐ No ☒NA (Please explain.) Comments:

ii. If above PQL, what samples are affected?

Comments:

NA.

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

Comments:

No.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)
   a. Defined and appropriate?

No additional data qualifiers were assigned.

☐Yes ☐ No ☒NA (Please explain.) Comments:

Laboratory Data Review Checklist

Completed by: Emily Freitas

Title: Chemist Date: 10/07/2014

CS Report Name: Report Date:

Consultant Firm: Ahtna Engineering Services

Laboratory Name: OnSite Environmental Laboratory Report Number: 1408-200

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:

      OnSite Environmental is an ADEC approved laboratory

   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:

      Samples were not transferred to an additional laboratory.

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

      COC information was completed correctly.

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

      Correct analyses were requested.

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:

Sample condition documented.

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

There were no discrepancies.

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

Data quality and usability was not affected.

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

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

There were no discrepancies.

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

No corrective actions were necessary

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

Data usability was not affected.

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:

The PQLs are lower than the Cleanup Level.

e. Data quality or usability affected?
Comments:

Data quality is not affected.

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:

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

There were no affected samples.

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

Data usability is not affected

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

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)
☒Yes ☐ No ☐NA (Please explain.) Comments:

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

☐Yes ☐ No ☒NA (Please explain.) Comments:

No metals/inorganic analyses were requested.

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

☒Yes ☐ No ☐NA (Please explain.) Comments:

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

☒Yes ☐ No ☐NA (Please explain.) Comments:

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

Comments:

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

☐Yes ☐ No ☒NA (Please explain.) Comments:

There were no affected samples.

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

Comments:

Data usability is 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:

No failed surrogates

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

Comments:

Data quality is not affected.

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

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

☒Yes ☐ No ☐NA (Please explain.) Comments:

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:

iii. All results less than PQL?

☒Yes ☐ No ☐NA (Please explain.) Comments:

iv. If above PQL, what samples are affected?

Comments:

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

Comments:

Data quality was not affected by the trip blank.

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)

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

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

☐Yes ☒ No ☐NA (Please explain.) Comments:

Tetrachloroethene had an RPD above the recommended DQO. Sample and duplicate results have been flagged "J".

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

Comments:

No. The sample results have been flagged appropriately.

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

☐Yes ☒ No ☐NA (Please explain.) Comments:

No equipment blank necessary. Disposable equipment was used.

i. All results less than PQL?

☐Yes ☐ No ☒NA (Please explain.) Comments:

ii. If above PQL, what samples are affected?

Comments:

NA.

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

Comments:

No.

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

a. Defined and appropriate?

No additional data qualifiers were assigned.

☐Yes ☐ No ☒NA (Please explain.) Comments:

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

Report Summary

Wednesday August 13, 2014

Report Number: L714612
Samples Received: 08/08/14
Client Project: 20275-002.05

Description: Baker Hughes Nikiski

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: _____

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

This report may not be reproduced, except in full, without written approval from ESC Lab Sciences.
Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-02

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-EX02-SO

Project # : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/06/14 17:30

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Corrosivity	Non-Corrosive					9045D	08/10/14	1
pH	7.0			su		9045D	08/10/14	1
Total Solids	91.0	0.0333		%		2540 G-2	08/12/14	1
Mercury	0.14	0.0028	0.022	mg/kg	J3	7471	08/09/14	1
Arsenic	4.6	0.65	2.2	mg/kg		6010C	08/12/14	1
Barium	230	0.17	0.55	mg/kg		6010C	08/12/14	1
Cadmium	0.28	0.070	0.55	mg/kg	J	6010C	08/12/14	1
Chromium	19.	0.14	1.1	mg/kg		6010C	08/12/14	1
Lead	43.	0.19	0.55	mg/kg		6010C	08/12/14	1
Selenium	U	0.74	2.2	mg/kg		6010C	08/12/14	1
Silver	U	0.28	1.1	mg/kg		6010C	08/12/14	1
Base/Neutral Extractables								
Acenaphthene	U	0.032	0.18	mg/kg		8270D	08/12/14	5
Acenaphthylene	U	0.034	0.18	mg/kg		8270D	08/12/14	5
Anthracene	U	0.032	0.18	mg/kg		8270D	08/12/14	5
Benzidine	U	0.32	1.8	mg/kg		8270D	08/12/14	5
Benzo(a)anthracene	U	0.021	0.18	mg/kg		8270D	08/12/14	5
Benzo(b)fluoranthene	U	0.035	0.18	mg/kg		8270D	08/12/14	5
Benzo(k)fluoranthene	U	0.029	0.18	mg/kg		8270D	08/12/14	5
Benzo(g,h,i)perylene	U	0.036	0.18	mg/kg		8270D	08/12/14	5
Benzo(a)pyrene	U	0.027	0.18	mg/kg		8270D	08/12/14	5
Bis(2-chlorethoxy)methane	U	0.038	1.8	mg/kg		8270D	08/12/14	5
Bis(2-chloroethyl)ether	U	0.045	1.8	mg/kg		8270D	08/12/14	5
Bis(2-chloroisopropyl)ether	U	0.038	1.8	mg/kg		8270D	08/12/14	5
4-Bromophenyl-phenylether	U	0.057	1.8	mg/kg		8270D	08/12/14	5
2-Chloronaphthalene	U	0.032	0.18	mg/kg		8270D	08/12/14	5
4-Chlorophenyl-phenylether	U	0.031	1.8	mg/kg		8270D	08/12/14	5
Chrysene	U	0.028	0.18	mg/kg		8270D	08/12/14	5
Dibenz(a,h)anthracene	U	0.041	0.18	mg/kg		8270D	08/12/14	5
3,3-Dichlorobenzidine	U	0.40	1.8	mg/kg		8270D	08/12/14	5
2,4-Dinitrotoluene	U	0.030	1.8	mg/kg		8270D	08/12/14	5
2,6-Dinitrotoluene	U	0.037	1.8	mg/kg		8270D	08/12/14	5
Fluoranthene	U	0.025	0.18	mg/kg		8270D	08/12/14	5
Fluorene	U	0.034	0.18	mg/kg		8270D	08/12/14	5
Hexachlorobenzene	U	0.043	1.8	mg/kg		8270D	08/12/14	5
Hexachloro-1,3-butadiene	U	0.050	1.8	mg/kg		8270D	08/12/14	5
Hexachlorocyclopentadiene	U	0.29	1.8	mg/kg	J	8270D	08/12/14	5
Hexachloroethane	U	0.067	1.8	mg/kg		8270D	08/12/14	5

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 08/13/14 17:01 Printed: 08/13/14 17:02
L714612-02 (PH) - 7.0@20.0c

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-02

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-EX02-SO

Project # : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/06/14 17:30

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Indeno(1,2,3-cd)pyrene	U	0.039	0.18	mg/kg		8270D	08/12/14	5
Isophorone	U	0.026	1.8	mg/kg		8270D	08/12/14	5
Naphthalene	U	0.044	0.18	mg/kg		8270D	08/12/14	5
Nitrobenzene	U	0.035	1.8	mg/kg		8270D	08/12/14	5
n-Nitrosodimethylamine	U	0.32	1.8	mg/kg		8270D	08/12/14	5
n-Nitrosodiphenylamine	U	0.030	1.8	mg/kg		8270D	08/12/14	5
n-Nitrosodi-n-propylamine	U	0.045	1.8	mg/kg		8270D	08/12/14	5
Phenanthrene	U	0.026	0.18	mg/kg		8270D	08/12/14	5
Benzylbutyl phthalate	U	0.052	1.8	mg/kg		8270D	08/12/14	5
Bis(2-ethylhexyl)phthalate	0.22	0.060	1.8	mg/kg	J	8270D	08/12/14	5
Di-n-butyl phthalate	U	0.054	1.8	mg/kg		8270D	08/12/14	5
Diethyl phthalate	U	0.034	1.8	mg/kg		8270D	08/12/14	5
Dimethyl phthalate	U	0.027	1.8	mg/kg		8270D	08/12/14	5
Di-n-octyl phthalate	U	0.045	1.8	mg/kg		8270D	08/12/14	5
Pyrene	U	0.062	0.18	mg/kg		8270D	08/12/14	5
1,2,4-Trichlorobenzene	U	0.044	1.8	mg/kg		8270D	08/12/14	5
Acid Extractables								
4-Chloro-3-methylphenol	U	0.024	1.8	mg/kg		8270D	08/12/14	5
2-Chlorophenol	U	0.042	1.8	mg/kg		8270D	08/12/14	5
2,4-Dichlorophenol	U	0.037	1.8	mg/kg		8270D	08/12/14	5
2,4-Dimethylphenol	U	0.24	1.8	mg/kg		8270D	08/12/14	5
4,6-Dinitro-2-methylphenol	U	0.62	1.8	mg/kg		8270D	08/12/14	5
2,4-Dinitrophenol	U	0.49	1.8	mg/kg		8270D	08/12/14	5
2-Nitrophenol	U	0.065	1.8	mg/kg		8270D	08/12/14	5
4-Nitrophenol	U	0.26	1.8	mg/kg		8270D	08/12/14	5
Pentachlorophenol	U	0.24	1.8	mg/kg		8270D	08/12/14	5
Phenol	U	0.035	1.8	mg/kg		8270D	08/12/14	5
2,4,6-Trichlorophenol	U	0.039	1.8	mg/kg		8270D	08/12/14	5
Surrogate Recovery								
2-Fluorophenol	78.5			% Rec.		8270D	08/12/14	5
Phenol-d5	73.7			% Rec.		8270D	08/12/14	5
Nitrobenzene-d5	88.2			% Rec.		8270D	08/12/14	5
2-Fluorobiphenyl	73.5			% Rec.		8270D	08/12/14	5
2,4,6-Tribromophenol	102.			% Rec.		8270D	08/12/14	5
p-Terphenyl-d14	73.4			% Rec.		8270D	08/12/14	5

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 08/13/14 17:01 Printed: 08/13/14 17:02
L714612-02 (PH) - 7.0@20.0c

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-03

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-EX03-SO

Project # : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/06/14 17:35

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Corrosivity	Non-Corrosive					9045D	08/10/14	1
pH	7.1			su		9045D	08/10/14	1
Total Solids	91.6	0.0333		%		2540 G-2	08/12/14	1
Mercury	0.022	0.0028	0.022	mg/kg		7471	08/09/14	1
Arsenic	4.1	0.65	2.2	mg/kg		6010C	08/12/14	1
Barium	99.	0.17	0.54	mg/kg		6010C	08/12/14	1
Cadmium	U	0.070	0.54	mg/kg		6010C	08/12/14	1
Chromium	23.	0.14	1.1	mg/kg		6010C	08/12/14	1
Lead	25.	0.19	0.54	mg/kg		6010C	08/12/14	1
Selenium	U	0.74	2.2	mg/kg		6010C	08/12/14	1
Silver	U	0.28	1.1	mg/kg		6010C	08/12/14	1
Base/Neutral Extractables								
Acenaphthene	U	0.0064	0.036	mg/kg		8270D	08/12/14	1
Acenaphthylene	U	0.0067	0.036	mg/kg		8270D	08/12/14	1
Anthracene	U	0.0063	0.036	mg/kg		8270D	08/12/14	1
Benzidine	U	0.064	0.36	mg/kg		8270D	08/12/14	1
Benzo(a)anthracene	U	0.0043	0.036	mg/kg		8270D	08/12/14	1
Benzo(b)fluoranthene	U	0.0070	0.036	mg/kg		8270D	08/12/14	1
Benzo(k)fluoranthene	U	0.0058	0.036	mg/kg		8270D	08/12/14	1
Benzo(g,h,i)perylene	U	0.0072	0.036	mg/kg		8270D	08/12/14	1
Benzo(a)pyrene	U	0.0055	0.036	mg/kg		8270D	08/12/14	1
Bis(2-chlorethoxy)methane	U	0.0077	0.36	mg/kg		8270D	08/12/14	1
Bis(2-chloroethyl)ether	U	0.0090	0.36	mg/kg		8270D	08/12/14	1
Bis(2-chloroisopropyl)ether	U	0.0076	0.36	mg/kg		8270D	08/12/14	1
4-Bromophenyl-phenylether	U	0.011	0.36	mg/kg		8270D	08/12/14	1
2-Chloronaphthalene	U	0.0064	0.036	mg/kg		8270D	08/12/14	1
4-Chlorophenyl-phenylether	U	0.0063	0.36	mg/kg		8270D	08/12/14	1
Chrysene	U	0.0056	0.036	mg/kg		8270D	08/12/14	1
Dibenz(a,h)anthracene	U	0.0082	0.036	mg/kg		8270D	08/12/14	1
3,3-Dichlorobenzidine	U	0.079	0.36	mg/kg		8270D	08/12/14	1
2,4-Dinitrotoluene	U	0.0061	0.36	mg/kg		8270D	08/12/14	1
2,6-Dinitrotoluene	U	0.0074	0.36	mg/kg		8270D	08/12/14	1
Fluoranthene	U	0.0050	0.036	mg/kg		8270D	08/12/14	1
Fluorene	U	0.0068	0.036	mg/kg		8270D	08/12/14	1
Hexachlorobenzene	U	0.0086	0.36	mg/kg		8270D	08/12/14	1
Hexachloro-1,3-butadiene	U	0.010	0.36	mg/kg		8270D	08/12/14	1
Hexachlorocyclopentadiene	U	0.059	0.36	mg/kg	J	8270D	08/12/14	1
Hexachloroethane	U	0.013	0.36	mg/kg		8270D	08/12/14	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 08/13/14 17:01 Printed: 08/13/14 17:02
L714612-03 (PH) - 7.1@20.0c

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-03

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-EX03-SO

Project # : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/06/14 17:35

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Indeno(1,2,3-cd)pyrene	U	0.0077	0.036	mg/kg		8270D	08/12/14	1
Isophorone	U	0.0052	0.36	mg/kg		8270D	08/12/14	1
Naphthalene	U	0.0089	0.036	mg/kg		8270D	08/12/14	1
Nitrobenzene	U	0.0070	0.36	mg/kg		8270D	08/12/14	1
n-Nitrosodimethylamine	U	0.065	0.36	mg/kg		8270D	08/12/14	1
n-Nitrosodiphenylamine	U	0.0059	0.36	mg/kg		8270D	08/12/14	1
n-Nitrosodi-n-propylamine	U	0.0091	0.36	mg/kg		8270D	08/12/14	1
Phenanthrene	U	0.0053	0.036	mg/kg		8270D	08/12/14	1
Benzylbutyl phthalate	U	0.010	0.36	mg/kg		8270D	08/12/14	1
Bis(2-ethylhexyl)phthalate	0.039	0.012	0.36	mg/kg	J	8270D	08/12/14	1
Di-n-butyl phthalate	U	0.011	0.36	mg/kg		8270D	08/12/14	1
Diethyl phthalate	U	0.0069	0.36	mg/kg		8270D	08/12/14	1
Dimethyl phthalate	U	0.0054	0.36	mg/kg		8270D	08/12/14	1
Di-n-octyl phthalate	U	0.0091	0.36	mg/kg		8270D	08/12/14	1
Pyrene	U	0.012	0.036	mg/kg		8270D	08/12/14	1
1,2,4-Trichlorobenzene	U	0.0088	0.36	mg/kg		8270D	08/12/14	1
Acid Extractables								
4-Chloro-3-methylphenol	U	0.0048	0.36	mg/kg		8270D	08/12/14	1
2-Chlorophenol	U	0.0083	0.36	mg/kg		8270D	08/12/14	1
2,4-Dichlorophenol	U	0.0075	0.36	mg/kg		8270D	08/12/14	1
2,4-Dimethylphenol	U	0.047	0.36	mg/kg		8270D	08/12/14	1
4,6-Dinitro-2-methylphenol	U	0.12	0.36	mg/kg		8270D	08/12/14	1
2,4-Dinitrophenol	U	0.098	0.36	mg/kg		8270D	08/12/14	1
2-Nitrophenol	U	0.013	0.36	mg/kg		8270D	08/12/14	1
4-Nitrophenol	U	0.052	0.36	mg/kg		8270D	08/12/14	1
Pentachlorophenol	U	0.048	0.36	mg/kg		8270D	08/12/14	1
Phenol	U	0.0070	0.36	mg/kg		8270D	08/12/14	1
2,4,6-Trichlorophenol	U	0.0078	0.36	mg/kg		8270D	08/12/14	1
Surrogate Recovery								
2-Fluorophenol	70.8			% Rec.		8270D	08/12/14	1
Phenol-d5	76.0			% Rec.		8270D	08/12/14	1
Nitrobenzene-d5	81.5			% Rec.		8270D	08/12/14	1
2-Fluorobiphenyl	72.0			% Rec.		8270D	08/12/14	1
2,4,6-Tribromophenol	115.			% Rec.		8270D	08/12/14	1
p-Terphenyl-d14	53.3			% Rec.		8270D	08/12/14	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 08/13/14 17:01 Printed: 08/13/14 17:02
L714612-03 (PH) - 7.1@20.0c

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-04

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-EX04-SO

Project # : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/06/14 17:40

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Corrosivity	Non-Corrosive					9045D	08/10/14	1
pH	6.8			su		9045D	08/10/14	1
Total Solids	90.7	0.0333		%		2540 G-2	08/12/14	1
Mercury	0.016	0.0028	0.022	mg/kg	J	7471	08/09/14	1
Arsenic	3.6	0.65	2.2	mg/kg		6010C	08/12/14	1
Barium	140	0.17	0.55	mg/kg		6010C	08/12/14	1
Cadmium	U	0.070	0.55	mg/kg		6010C	08/12/14	1
Chromium	22.	0.14	1.1	mg/kg		6010C	08/12/14	1
Lead	10.	0.19	0.55	mg/kg		6010C	08/12/14	1
Selenium	U	0.74	2.2	mg/kg		6010C	08/12/14	1
Silver	U	0.28	1.1	mg/kg		6010C	08/12/14	1
Base/Neutral Extractables								
Acenaphthene	U	0.0064	0.036	mg/kg		8270D	08/12/14	1
Acenaphthylene	U	0.0067	0.036	mg/kg		8270D	08/12/14	1
Anthracene	U	0.0063	0.036	mg/kg		8270D	08/12/14	1
Benzidine	U	0.064	0.37	mg/kg		8270D	08/12/14	1
Benzo(a)anthracene	U	0.0043	0.036	mg/kg		8270D	08/12/14	1
Benzo(b)fluoranthene	U	0.0070	0.036	mg/kg		8270D	08/12/14	1
Benzo(k)fluoranthene	U	0.0058	0.036	mg/kg		8270D	08/12/14	1
Benzo(g,h,i)perylene	U	0.0072	0.036	mg/kg		8270D	08/12/14	1
Benzo(a)pyrene	U	0.0055	0.036	mg/kg		8270D	08/12/14	1
Bis(2-chlorethoxy)methane	U	0.0077	0.37	mg/kg		8270D	08/12/14	1
Bis(2-chloroethyl)ether	U	0.0090	0.37	mg/kg		8270D	08/12/14	1
Bis(2-chloroisopropyl)ether	U	0.0076	0.37	mg/kg		8270D	08/12/14	1
4-Bromophenyl-phenylether	U	0.011	0.37	mg/kg		8270D	08/12/14	1
2-Chloronaphthalene	U	0.0064	0.036	mg/kg		8270D	08/12/14	1
4-Chlorophenyl-phenylether	U	0.0063	0.37	mg/kg		8270D	08/12/14	1
Chrysene	U	0.0056	0.036	mg/kg		8270D	08/12/14	1
Dibenz(a,h)anthracene	U	0.0082	0.036	mg/kg		8270D	08/12/14	1
3,3-Dichlorobenzidine	U	0.079	0.37	mg/kg		8270D	08/12/14	1
2,4-Dinitrotoluene	U	0.0061	0.37	mg/kg		8270D	08/12/14	1
2,6-Dinitrotoluene	U	0.0074	0.37	mg/kg		8270D	08/12/14	1
Fluoranthene	U	0.0050	0.036	mg/kg		8270D	08/12/14	1
Fluorene	U	0.0068	0.036	mg/kg		8270D	08/12/14	1
Hexachlorobenzene	U	0.0086	0.37	mg/kg		8270D	08/12/14	1
Hexachloro-1,3-butadiene	U	0.010	0.37	mg/kg		8270D	08/12/14	1
Hexachlorocyclopentadiene	U	0.059	0.37	mg/kg	J	8270D	08/12/14	1
Hexachloroethane	U	0.013	0.37	mg/kg		8270D	08/12/14	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 08/13/14 17:01 Printed: 08/13/14 17:02
L714612-04 (PH) - 6.8@19.9c

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-04

Site ID :

Project # : 20275-002.05

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Sample ID : 14-BH1-EX04-SO

Collected By : Dan Frank
Collection Date : 08/06/14 17:40

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Indeno(1,2,3-cd)pyrene	U	0.0077	0.036	mg/kg		8270D	08/12/14	1
Isophorone	U	0.0052	0.37	mg/kg		8270D	08/12/14	1
Naphthalene	U	0.0089	0.036	mg/kg		8270D	08/12/14	1
Nitrobenzene	U	0.0070	0.37	mg/kg		8270D	08/12/14	1
n-Nitrosodimethylamine	U	0.065	0.37	mg/kg		8270D	08/12/14	1
n-Nitrosodiphenylamine	U	0.0059	0.37	mg/kg		8270D	08/12/14	1
n-Nitrosodi-n-propylamine	U	0.0091	0.37	mg/kg		8270D	08/12/14	1
Phenanthrene	U	0.0053	0.036	mg/kg		8270D	08/12/14	1
Benzylbutyl phthalate	U	0.010	0.37	mg/kg		8270D	08/12/14	1
Bis(2-ethylhexyl)phthalate	U	0.012	0.37	mg/kg		8270D	08/12/14	1
Di-n-butyl phthalate	U	0.011	0.37	mg/kg		8270D	08/12/14	1
Diethyl phthalate	U	0.0069	0.37	mg/kg		8270D	08/12/14	1
Dimethyl phthalate	U	0.0054	0.37	mg/kg		8270D	08/12/14	1
Di-n-octyl phthalate	U	0.0091	0.37	mg/kg		8270D	08/12/14	1
Pyrene	U	0.012	0.036	mg/kg		8270D	08/12/14	1
1,2,4-Trichlorobenzene	U	0.0088	0.37	mg/kg		8270D	08/12/14	1
Acid Extractables								
4-Chloro-3-methylphenol	U	0.0048	0.37	mg/kg		8270D	08/12/14	1
2-Chlorophenol	U	0.0083	0.37	mg/kg		8270D	08/12/14	1
2,4-Dichlorophenol	U	0.0075	0.37	mg/kg		8270D	08/12/14	1
2,4-Dimethylphenol	U	0.047	0.37	mg/kg		8270D	08/12/14	1
4,6-Dinitro-2-methylphenol	U	0.12	0.37	mg/kg		8270D	08/12/14	1
2,4-Dinitrophenol	U	0.098	0.37	mg/kg		8270D	08/12/14	1
2-Nitrophenol	U	0.013	0.37	mg/kg		8270D	08/12/14	1
4-Nitrophenol	U	0.052	0.37	mg/kg		8270D	08/12/14	1
Pentachlorophenol	U	0.048	0.37	mg/kg		8270D	08/12/14	1
Phenol	U	0.0070	0.37	mg/kg		8270D	08/12/14	1
2,4,6-Trichlorophenol	U	0.0078	0.37	mg/kg		8270D	08/12/14	1
Surrogate Recovery								
2-Fluorophenol	59.5			% Rec.		8270D	08/12/14	1
Phenol-d5	64.9			% Rec.		8270D	08/12/14	1
Nitrobenzene-d5	65.8			% Rec.		8270D	08/12/14	1
2-Fluorobiphenyl	59.3			% Rec.		8270D	08/12/14	1
2,4,6-Tribromophenol	97.0			% Rec.		8270D	08/12/14	1
p-Terphenyl-d14	40.4			% Rec.		8270D	08/12/14	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 08/13/14 17:01 Printed: 08/13/14 17:02
L714612-04 (PH) - 6.8@19.9c

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-05

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-EX05-SO

Project # : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/06/14 17:45

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Corrosivity	Non-Corrosive					9045D	08/10/14	1
pH	6.8			su		9045D	08/10/14	1
Total Solids	92.2	0.0333		%		2540 G-2	08/12/14	1
Mercury	0.016	0.0028	0.022	mg/kg	J	7471	08/09/14	1
Arsenic	3.8	0.65	2.2	mg/kg		6010C	08/12/14	1
Barium	74.	0.17	0.54	mg/kg		6010C	08/12/14	1
Cadmium	U	0.070	0.54	mg/kg		6010C	08/12/14	1
Chromium	20.	0.14	1.1	mg/kg		6010C	08/12/14	1
Lead	10.	0.19	0.54	mg/kg		6010C	08/12/14	1
Selenium	U	0.74	2.2	mg/kg		6010C	08/12/14	1
Silver	U	0.28	1.1	mg/kg		6010C	08/12/14	1
Base/Neutral Extractables								
Acenaphthene	U	0.0064	0.036	mg/kg		8270D	08/12/14	1
Acenaphthylene	U	0.0067	0.036	mg/kg		8270D	08/12/14	1
Anthracene	U	0.0063	0.036	mg/kg		8270D	08/12/14	1
Benzidine	U	0.064	0.36	mg/kg		8270D	08/12/14	1
Benzo(a)anthracene	U	0.0043	0.036	mg/kg		8270D	08/12/14	1
Benzo(b)fluoranthene	U	0.0070	0.036	mg/kg		8270D	08/12/14	1
Benzo(k)fluoranthene	U	0.0058	0.036	mg/kg		8270D	08/12/14	1
Benzo(g,h,i)perylene	U	0.0072	0.036	mg/kg		8270D	08/12/14	1
Benzo(a)pyrene	U	0.0055	0.036	mg/kg		8270D	08/12/14	1
Bis(2-chlorethoxy)methane	U	0.0077	0.36	mg/kg		8270D	08/12/14	1
Bis(2-chloroethyl)ether	U	0.0090	0.36	mg/kg		8270D	08/12/14	1
Bis(2-chloroisopropyl)ether	U	0.0076	0.36	mg/kg		8270D	08/12/14	1
4-Bromophenyl-phenylether	U	0.011	0.36	mg/kg		8270D	08/12/14	1
2-Chloronaphthalene	U	0.0064	0.036	mg/kg		8270D	08/12/14	1
4-Chlorophenyl-phenylether	U	0.0063	0.36	mg/kg		8270D	08/12/14	1
Chrysene	U	0.0056	0.036	mg/kg		8270D	08/12/14	1
Dibenz(a,h)anthracene	U	0.0082	0.036	mg/kg		8270D	08/12/14	1
3,3-Dichlorobenzidine	U	0.079	0.36	mg/kg		8270D	08/12/14	1
2,4-Dinitrotoluene	U	0.0061	0.36	mg/kg		8270D	08/12/14	1
2,6-Dinitrotoluene	U	0.0074	0.36	mg/kg		8270D	08/12/14	1
Fluoranthene	U	0.0050	0.036	mg/kg		8270D	08/12/14	1
Fluorene	U	0.0068	0.036	mg/kg		8270D	08/12/14	1
Hexachlorobenzene	U	0.0086	0.36	mg/kg		8270D	08/12/14	1
Hexachloro-1,3-butadiene	U	0.010	0.36	mg/kg		8270D	08/12/14	1
Hexachlorocyclopentadiene	U	0.059	0.36	mg/kg	J	8270D	08/12/14	1
Hexachloroethane	U	0.013	0.36	mg/kg		8270D	08/12/14	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 08/13/14 17:01 Printed: 08/13/14 17:02
L714612-05 (PH) - 6.8@19.8c

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-05

Site ID :

Project # : 20275-002.05

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Sample ID : 14-BH1-EX05-SO

Collected By : Dan Frank
Collection Date : 08/06/14 17:45

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Indeno(1,2,3-cd)pyrene	U	0.0077	0.036	mg/kg		8270D	08/12/14	1
Isophorone	U	0.0052	0.36	mg/kg		8270D	08/12/14	1
Naphthalene	U	0.0089	0.036	mg/kg		8270D	08/12/14	1
Nitrobenzene	U	0.0070	0.36	mg/kg		8270D	08/12/14	1
n-Nitrosodimethylamine	U	0.065	0.36	mg/kg		8270D	08/12/14	1
n-Nitrosodiphenylamine	U	0.0059	0.36	mg/kg		8270D	08/12/14	1
n-Nitrosodi-n-propylamine	U	0.0091	0.36	mg/kg		8270D	08/12/14	1
Phenanthrene	U	0.0053	0.036	mg/kg		8270D	08/12/14	1
Benzylbutyl phthalate	U	0.010	0.36	mg/kg		8270D	08/12/14	1
Bis(2-ethylhexyl)phthalate	U	0.012	0.36	mg/kg		8270D	08/12/14	1
Di-n-butyl phthalate	U	0.011	0.36	mg/kg		8270D	08/12/14	1
Diethyl phthalate	U	0.0069	0.36	mg/kg		8270D	08/12/14	1
Dimethyl phthalate	U	0.0054	0.36	mg/kg		8270D	08/12/14	1
Di-n-octyl phthalate	U	0.0091	0.36	mg/kg		8270D	08/12/14	1
Pyrene	U	0.012	0.036	mg/kg		8270D	08/12/14	1
1,2,4-Trichlorobenzene	U	0.0088	0.36	mg/kg		8270D	08/12/14	1
Acid Extractables								
4-Chloro-3-methylphenol	U	0.0048	0.36	mg/kg		8270D	08/12/14	1
2-Chlorophenol	U	0.0083	0.36	mg/kg		8270D	08/12/14	1
2,4-Dichlorophenol	U	0.0075	0.36	mg/kg		8270D	08/12/14	1
2,4-Dimethylphenol	U	0.047	0.36	mg/kg		8270D	08/12/14	1
4,6-Dinitro-2-methylphenol	U	0.12	0.36	mg/kg		8270D	08/12/14	1
2,4-Dinitrophenol	U	0.098	0.36	mg/kg		8270D	08/12/14	1
2-Nitrophenol	U	0.013	0.36	mg/kg		8270D	08/12/14	1
4-Nitrophenol	U	0.052	0.36	mg/kg		8270D	08/12/14	1
Pentachlorophenol	U	0.048	0.36	mg/kg		8270D	08/12/14	1
Phenol	U	0.0070	0.36	mg/kg		8270D	08/12/14	1
2,4,6-Trichlorophenol	U	0.0078	0.36	mg/kg		8270D	08/12/14	1
Surrogate Recovery								
2-Fluorophenol	50.2			% Rec.		8270D	08/12/14	1
Phenol-d5	53.7			% Rec.		8270D	08/12/14	1
Nitrobenzene-d5	55.7			% Rec.		8270D	08/12/14	1
2-Fluorobiphenyl	48.9			% Rec.		8270D	08/12/14	1
2,4,6-Tribromophenol	93.7			% Rec.		8270D	08/12/14	1
p-Terphenyl-d14	36.7			% Rec.		8270D	08/12/14	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 08/13/14 17:01 Printed: 08/13/14 17:02
L714612-05 (PH) - 6.8@19.8c

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-06

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-EX06-SO

Project # : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/06/14 17:50

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Corrosivity	Non-Corrosive					9045D	08/10/14	1
pH	8.0			su		9045D	08/10/14	1
Total Solids	95.1	0.0333		%		2540 G-2	08/12/14	1
Mercury	0.032	0.0028	0.021	mg/kg		7471	08/09/14	1
Arsenic	4.4	0.65	2.1	mg/kg		6010C	08/12/14	1
Barium	270	0.17	0.52	mg/kg		6010C	08/12/14	1
Cadmium	0.21	0.070	0.52	mg/kg	J	6010C	08/12/14	1
Chromium	21.	0.14	1.0	mg/kg		6010C	08/12/14	1
Lead	100	0.19	0.52	mg/kg		6010C	08/12/14	1
Selenium	U	0.74	2.1	mg/kg		6010C	08/12/14	1
Silver	U	0.28	1.0	mg/kg		6010C	08/12/14	1
Base/Neutral Extractables								
Acenaphthene	U	0.0064	0.035	mg/kg		8270D	08/12/14	1
Acenaphthylene	U	0.0067	0.035	mg/kg		8270D	08/12/14	1
Anthracene	U	0.0063	0.035	mg/kg		8270D	08/12/14	1
Benzidine	U	0.064	0.35	mg/kg		8270D	08/12/14	1
Benzo(a)anthracene	U	0.0043	0.035	mg/kg		8270D	08/12/14	1
Benzo(b)fluoranthene	U	0.0070	0.035	mg/kg		8270D	08/12/14	1
Benzo(k)fluoranthene	U	0.0058	0.035	mg/kg		8270D	08/12/14	1
Benzo(g,h,i)perylene	U	0.0072	0.035	mg/kg		8270D	08/12/14	1
Benzo(a)pyrene	U	0.0055	0.035	mg/kg		8270D	08/12/14	1
Bis(2-chlorethoxy)methane	U	0.0077	0.35	mg/kg		8270D	08/12/14	1
Bis(2-chloroethyl)ether	U	0.0090	0.35	mg/kg		8270D	08/12/14	1
Bis(2-chloroisopropyl)ether	U	0.0076	0.35	mg/kg		8270D	08/12/14	1
4-Bromophenyl-phenylether	U	0.011	0.35	mg/kg		8270D	08/12/14	1
2-Chloronaphthalene	U	0.0064	0.035	mg/kg		8270D	08/12/14	1
4-Chlorophenyl-phenylether	U	0.0063	0.35	mg/kg		8270D	08/12/14	1
Chrysene	U	0.0056	0.035	mg/kg		8270D	08/12/14	1
Dibenz(a,h)anthracene	U	0.0082	0.035	mg/kg		8270D	08/12/14	1
3,3-Dichlorobenzidine	U	0.079	0.35	mg/kg		8270D	08/12/14	1
2,4-Dinitrotoluene	U	0.0061	0.35	mg/kg		8270D	08/12/14	1
2,6-Dinitrotoluene	U	0.0074	0.35	mg/kg		8270D	08/12/14	1
Fluoranthene	U	0.0050	0.035	mg/kg		8270D	08/12/14	1
Fluorene	U	0.0068	0.035	mg/kg		8270D	08/12/14	1
Hexachlorobenzene	U	0.0086	0.35	mg/kg		8270D	08/12/14	1
Hexachloro-1,3-butadiene	U	0.010	0.35	mg/kg		8270D	08/12/14	1
Hexachlorocyclopentadiene	U	0.059	0.35	mg/kg	J	8270D	08/12/14	1
Hexachloroethane	U	0.013	0.35	mg/kg		8270D	08/12/14	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 08/13/14 17:01 Printed: 08/13/14 17:02
L714612-06 (PH) - 8.0@19.9c

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-06

Site ID :

Project # : 20275-002.05

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Sample ID : 14-BH1-EX06-SO

Collected By : Dan Frank
Collection Date : 08/06/14 17:50

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Indeno(1,2,3-cd)pyrene	U	0.0077	0.035	mg/kg		8270D	08/12/14	1
Isophorone	U	0.0052	0.35	mg/kg		8270D	08/12/14	1
Naphthalene	U	0.0089	0.035	mg/kg		8270D	08/12/14	1
Nitrobenzene	U	0.0070	0.35	mg/kg		8270D	08/12/14	1
n-Nitrosodimethylamine	U	0.065	0.35	mg/kg		8270D	08/12/14	1
n-Nitrosodiphenylamine	U	0.0059	0.35	mg/kg		8270D	08/12/14	1
n-Nitrosodi-n-propylamine	U	0.0091	0.35	mg/kg		8270D	08/12/14	1
Phenanthrene	U	0.0053	0.035	mg/kg		8270D	08/12/14	1
Benzylbutyl phthalate	U	0.010	0.35	mg/kg		8270D	08/12/14	1
Bis(2-ethylhexyl)phthalate	0.061	0.012	0.35	mg/kg	J	8270D	08/12/14	1
Di-n-butyl phthalate	U	0.011	0.35	mg/kg		8270D	08/12/14	1
Diethyl phthalate	U	0.0069	0.35	mg/kg		8270D	08/12/14	1
Dimethyl phthalate	U	0.0054	0.35	mg/kg		8270D	08/12/14	1
Di-n-octyl phthalate	U	0.0091	0.35	mg/kg		8270D	08/12/14	1
Pyrene	U	0.012	0.035	mg/kg		8270D	08/12/14	1
1,2,4-Trichlorobenzene	U	0.0088	0.35	mg/kg		8270D	08/12/14	1
Acid Extractables								
4-Chloro-3-methylphenol	U	0.0048	0.35	mg/kg		8270D	08/12/14	1
2-Chlorophenol	U	0.0083	0.35	mg/kg		8270D	08/12/14	1
2,4-Dichlorophenol	U	0.0075	0.35	mg/kg		8270D	08/12/14	1
2,4-Dimethylphenol	U	0.047	0.35	mg/kg		8270D	08/12/14	1
4,6-Dinitro-2-methylphenol	U	0.12	0.35	mg/kg		8270D	08/12/14	1
2,4-Dinitrophenol	U	0.098	0.35	mg/kg		8270D	08/12/14	1
2-Nitrophenol	U	0.013	0.35	mg/kg		8270D	08/12/14	1
4-Nitrophenol	U	0.052	0.35	mg/kg		8270D	08/12/14	1
Pentachlorophenol	U	0.048	0.35	mg/kg		8270D	08/12/14	1
Phenol	U	0.0070	0.35	mg/kg		8270D	08/12/14	1
2,4,6-Trichlorophenol	U	0.0078	0.35	mg/kg		8270D	08/12/14	1
Surrogate Recovery								
2-Fluorophenol	76.3			% Rec.		8270D	08/12/14	1
Phenol-d5	78.5			% Rec.		8270D	08/12/14	1
Nitrobenzene-d5	86.2			% Rec.		8270D	08/12/14	1
2-Fluorobiphenyl	74.3			% Rec.		8270D	08/12/14	1
2,4,6-Tribromophenol	112.			% Rec.		8270D	08/12/14	1
p-Terphenyl-d14	71.8			% Rec.		8270D	08/12/14	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 08/13/14 17:01 Printed: 08/13/14 17:02
L714612-06 (PH) - 8.0@19.9c

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-07

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-DR01-SL

Project # : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/05/14 14:50

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	55.5	0.0333		%		2540 G-2	08/12/14	1
Mercury	0.65	0.0028	0.036	mg/kg		7471	08/09/14	1
Arsenic	4.7	0.65	3.6	mg/kg		6010C	08/12/14	1
Barium	27000	1.7	9.0	mg/kg		6010C	08/12/14	10
Cadmium	U	0.070	0.90	mg/kg		6010C	08/12/14	1
Chromium	230	0.14	1.8	mg/kg		6010C	08/12/14	1
Lead	1500	0.19	0.90	mg/kg		6010C	08/12/14	1
Selenium	3.6	0.74	3.6	mg/kg	J	6010C	08/12/14	1
Silver	1.4	0.28	1.8	mg/kg	J	6010C	08/12/14	1
Base/Neutral Extractables								
Acenaphthene	U	0.64	5.9	mg/kg		8270D	08/12/14	100
Acenaphthylene	U	0.67	5.9	mg/kg		8270D	08/12/14	100
Anthracene	3.4	0.63	5.9	mg/kg	J	8270D	08/12/14	100
Benzidine	U	6.4	60.	mg/kg		8270D	08/12/14	100
Benzo(a)anthracene	U	0.43	5.9	mg/kg		8270D	08/12/14	100
Benzo(b)fluoranthene	U	0.70	5.9	mg/kg		8270D	08/12/14	100
Benzo(k)fluoranthene	U	0.58	5.9	mg/kg		8270D	08/12/14	100
Benzo(g,h,i)perylene	U	0.72	5.9	mg/kg		8270D	08/12/14	100
Benzo(a)pyrene	U	0.55	5.9	mg/kg		8270D	08/12/14	100
Bis(2-chlorethoxy)methane	U	0.77	60.	mg/kg		8270D	08/12/14	100
Bis(2-chloroethyl)ether	U	0.90	60.	mg/kg		8270D	08/12/14	100
Bis(2-chloroisopropyl)ether	U	0.76	60.	mg/kg		8270D	08/12/14	100
4-Bromophenyl-phenylether	U	1.1	60.	mg/kg		8270D	08/12/14	100
2-Chloronaphthalene	U	0.64	5.9	mg/kg		8270D	08/12/14	100
4-Chlorophenyl-phenylether	U	0.63	60.	mg/kg		8270D	08/12/14	100
Chrysene	U	0.56	5.9	mg/kg		8270D	08/12/14	100
Dibenz(a,h)anthracene	U	0.82	5.9	mg/kg		8270D	08/12/14	100
3,3-Dichlorobenzidine	U	7.9	60.	mg/kg		8270D	08/12/14	100
2,4-Dinitrotoluene	U	0.61	60.	mg/kg		8270D	08/12/14	100
2,6-Dinitrotoluene	U	0.74	60.	mg/kg		8270D	08/12/14	100
Fluoranthene	1.4	0.50	5.9	mg/kg	J	8270D	08/12/14	100
Fluorene	2.0	0.68	5.9	mg/kg	J	8270D	08/12/14	100
Hexachlorobenzene	U	0.86	60.	mg/kg		8270D	08/12/14	100
Hexachloro-1,3-butadiene	U	1.0	60.	mg/kg		8270D	08/12/14	100
Hexachlorocyclopentadiene	U	5.9	60.	mg/kg	J	8270D	08/12/14	100
Hexachloroethane	U	1.3	60.	mg/kg		8270D	08/12/14	100
Indeno(1,2,3-cd)pyrene	U	0.77	5.9	mg/kg		8270D	08/12/14	100
Isophorone	6.8	0.52	60.	mg/kg	J	8270D	08/12/14	100
Naphthalene	1.6	0.89	5.9	mg/kg	J	8270D	08/12/14	100
Nitrobenzene	U	0.70	60.	mg/kg		8270D	08/12/14	100

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 08/13/14 17:01 Printed: 08/13/14 17:02

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-07

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-DR01-SL

Project # : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/05/14 14:50

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
n-Nitrosodimethylamine	U	6.5	60.	mg/kg		8270D	08/12/14	100
n-Nitrosodiphenylamine	7.0	0.59	60.	mg/kg	J	8270D	08/12/14	100
n-Nitrosodi-n-propylamine	U	0.91	60.	mg/kg		8270D	08/12/14	100
Phenanthrene	4.3	0.53	5.9	mg/kg	J	8270D	08/12/14	100
Benzylbutyl phthalate	U	1.0	60.	mg/kg		8270D	08/12/14	100
Bis(2-ethylhexyl)phthalate	220	1.2	60.	mg/kg		8270D	08/12/14	100
Di-n-butyl phthalate	U	1.1	60.	mg/kg		8270D	08/12/14	100
Diethyl phthalate	U	0.69	60.	mg/kg		8270D	08/12/14	100
Dimethyl phthalate	U	0.54	60.	mg/kg		8270D	08/12/14	100
Di-n-octyl phthalate	U	0.91	60.	mg/kg		8270D	08/12/14	100
Pyrene	2.5	1.2	5.9	mg/kg	J	8270D	08/12/14	100
1,2,4-Trichlorobenzene	U	0.88	60.	mg/kg		8270D	08/12/14	100
Acid Extractables								
4-Chloro-3-methylphenol	U	0.48	60.	mg/kg		8270D	08/12/14	100
2-Chlorophenol	U	0.83	60.	mg/kg		8270D	08/12/14	100
2,4-Dichlorophenol	U	0.75	60.	mg/kg		8270D	08/12/14	100
2,4-Dimethylphenol	U	4.7	60.	mg/kg		8270D	08/12/14	100
4,6-Dinitro-2-methylphenol	U	12.	60.	mg/kg		8270D	08/12/14	100
2,4-Dinitrophenol	U	9.8	60.	mg/kg		8270D	08/12/14	100
2-Nitrophenol	U	1.3	60.	mg/kg		8270D	08/12/14	100
4-Nitrophenol	U	5.2	60.	mg/kg		8270D	08/12/14	100
Pentachlorophenol	U	4.8	60.	mg/kg		8270D	08/12/14	100
Phenol	1.4	0.70	60.	mg/kg	J	8270D	08/12/14	100
2,4,6-Trichlorophenol	U	0.78	60.	mg/kg		8270D	08/12/14	100
Surrogate Recovery								
2-Fluorophenol	62.7			% Rec.	J7	8270D	08/12/14	100
Phenol-d5	93.4			% Rec.	J7	8270D	08/12/14	100
Nitrobenzene-d5	122.			% Rec.	J7	8270D	08/12/14	100
2-Fluorobiphenyl	126.			% Rec.	J7	8270D	08/12/14	100
2,4,6-Tribromophenol	79.7			% Rec.	J7	8270D	08/12/14	100
p-Terphenyl-d14	75.2			% Rec.	J7	8270D	08/12/14	100

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 08/13/14 17:01 Printed: 08/13/14 17:02

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-08

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-DR01-SL

Project : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/05/14 14:50

Parameter	Result	Det. Limit	Units	Limit	Method	Date/Time	By	Dil
Corrosivity	Non-Corrosiv				9045D	08/10/14 1957	SDC	1
Ignitability	See Footnote		Deg. F		D93/101	08/12/14 1557	AS	1
pH	6.6		su		9045D	08/10/14 1957	SDC	1
TCLP Extraction	-				1311	08/09/14 0748	CCS	1
Mercury	BDL	0.010	mg/l	0.20	7470A	08/11/14 1322	CCE	1
Arsenic	BDL	0.45	mg/l	5.0	6010C	08/09/14 2003	WBD	1
Barium	3.7	1.4	mg/l	100	6010C	08/09/14 2003	WBD	1
Cadmium	BDL	0.45	mg/l	1.0	6010C	08/09/14 2003	WBD	1
Chromium	BDL	0.45	mg/l	5.0	6010C	08/09/14 2003	WBD	1
Lead	1.9	0.45	mg/l	5.0	6010C	08/09/14 2003	WBD	1
Selenium	BDL	0.45	mg/l	1.0	6010C	08/09/14 2003	WBD	1
Silver	BDL	0.45	mg/l	5.0	6010C	08/09/14 2003	WBD	1
TCLP ZHE Extraction	-				1311	08/10/14 0904	CCS	1
TCLP Volatiles								
Benzene	BDL	0.050	mg/l	0.50	8260B	08/10/14 1909	JC	1
Carbon tetrachloride	BDL	0.050	mg/l	0.50	8260B	08/10/14 1909	JC	1
Chlorobenzene	BDL	0.050	mg/l	100	8260B	08/10/14 1909	JC	1
Chloroform	BDL	0.25	mg/l	6.0	8260B	08/10/14 1909	JC	1
1,2-Dichloroethane	BDL	0.050	mg/l	0.50	8260B	08/10/14 1909	JC	1
1,1-Dichloroethene	BDL	0.050	mg/l	0.70	8260B	08/10/14 1909	JC	1
2-Butanone (MEK)	BDL	0.50	mg/l	200	8260B	08/10/14 1909	JC	1
Tetrachloroethene	BDL	0.050	mg/l	0.70	8260B	08/10/14 1909	JC	1
Trichloroethene	BDL	0.050	mg/l	0.50	8260B	08/10/14 1909	JC	1
Vinyl chloride	BDL	0.050	mg/l	0.20	8260B	08/10/14 1909	JC	1
Surrogate Recovery								
Toluene-d8	103.		% Rec.	114.	8260B	08/10/14 1909	JC	1
Dibromofluoromethane	101.		% Rec.	125.	8260B	08/10/14 1909	JC	1
a,a,a-Trifluorotoluene	108.		% Rec.	114.	8260B	08/10/14 1909	JC	1
4-Bromofluorobenzene	116.		% Rec.	128.	8260B	08/10/14 1909	JC	1
TCLP Semi-Volatiles								
1,4-Dichlorobenzene	BDL	0.10	mg/l	7.5	8270C	08/12/14 1802	KMF	1
2,4-Dinitrotoluene	BDL	0.10	mg/l	0.13	8270C	08/12/14 1802	KMF	1
Hexachlorobenzene	BDL	0.10	mg/l	0.13	8270C	08/12/14 1802	KMF	1
Hexachloro-1,3-butadiene	BDL	0.10	mg/l	0.50	8270C	08/12/14 1802	KMF	1
Hexachloroethane	BDL	0.10	mg/l	3.0	8270C	08/12/14 1802	KMF	1

L714612-08 (IGNITABILITY) - Did Not Ignite @ 170 F
L714612-08 (PH) - 6.6@19.9c

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-08

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-DR01-SL

Project : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/05/14 14:50

Parameter	Result	Det. Limit	Units	Limit	Method	Date/Time	By	Dil
Nitrobenzene	BDL	0.10	mg/l	2.0	8270C	08/12/14 1802	KMF	1
Pyridine	BDL	0.10	mg/l	5.0	8270C	08/12/14 1802	KMF	1
3&4-Methyl Phenol	BDL	0.10	mg/l	400	8270C	08/12/14 1802	KMF	1
2-Methylphenol	BDL	0.10	mg/l	200	8270C	08/12/14 1802	KMF	1
Pentachlorophenol	BDL	0.10	mg/l	100	8270C	08/12/14 1802	KMF	1
2,4,5-Trichlorophenol	BDL	0.10	mg/l	400	8270C	08/12/14 1802	KMF	1
2,4,6-Trichlorophenol	BDL	0.10	mg/l	2.0	8270C	08/12/14 1802	KMF	1
Surrogate Recovery								
2-Fluorophenol	58.8		% Rec.	87.0	8270C	08/12/14 1802	KMF	1
Phenol-d5	44.8		% Rec.	67.0	8270C	08/12/14 1802	KMF	1
Nitrobenzene-d5	80.5		% Rec.	120.	8270C	08/12/14 1802	KMF	1
2-Fluorobiphenyl	81.6		% Rec.	122.	8270C	08/12/14 1802	KMF	1
2,4,6-Tribromophenol	74.6		% Rec.	148.	8270C	08/12/14 1802	KMF	1
p-Terphenyl-d14	79.3		% Rec.	149.	8270C	08/12/14 1802	KMF	1

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)
Limit - Maximum Contaminant Level as established by the US EPA
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 08/13/14 17:01 Printed: 08/13/14 17:03
L714612-08 (IGNITABILITY) - Did Not Ignite @ 170 F
L714612-08 (PH) - 6.6@19.9c

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-09

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-SP01-SO

Project # : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/07/14 08:05

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	93.9	0.0333		%		2540 G-2	08/12/14	1
Mercury	0.036	0.0028	0.021	mg/kg		7471	08/09/14	1
Arsenic	3.7	0.65	2.1	mg/kg		6010C	08/12/14	1
Barium	150	0.17	0.53	mg/kg	J3J6	6010C	08/12/14	1
Cadmium	0.22	0.070	0.53	mg/kg	J	6010C	08/12/14	1
Chromium	13.	0.14	1.1	mg/kg		6010C	08/12/14	1
Lead	28.	0.19	0.53	mg/kg		6010C	08/12/14	1
Selenium	U	0.74	2.1	mg/kg		6010C	08/12/14	1
Silver	U	0.28	1.1	mg/kg		6010C	08/12/14	1
Base/Neutral Extractables								
Acenaphthene	U	0.064	0.35	mg/kg		8270D	08/12/14	10
Acenaphthylene	U	0.067	0.35	mg/kg		8270D	08/12/14	10
Anthracene	U	0.063	0.35	mg/kg		8270D	08/12/14	10
Benzidine	U	0.64	3.5	mg/kg		8270D	08/12/14	10
Benzo(a)anthracene	U	0.043	0.35	mg/kg		8270D	08/12/14	10
Benzo(b)fluoranthene	U	0.070	0.35	mg/kg		8270D	08/12/14	10
Benzo(k)fluoranthene	U	0.058	0.35	mg/kg		8270D	08/12/14	10
Benzo(g,h,i)perylene	U	0.072	0.35	mg/kg		8270D	08/12/14	10
Benzo(a)pyrene	U	0.055	0.35	mg/kg		8270D	08/12/14	10
Bis(2-chlorethoxy)methane	U	0.077	3.5	mg/kg		8270D	08/12/14	10
Bis(2-chloroethyl)ether	U	0.090	3.5	mg/kg		8270D	08/12/14	10
Bis(2-chloroisopropyl)ether	U	0.076	3.5	mg/kg		8270D	08/12/14	10
4-Bromophenyl-phenylether	U	0.11	3.5	mg/kg		8270D	08/12/14	10
2-Chloronaphthalene	U	0.064	0.35	mg/kg		8270D	08/12/14	10
4-Chlorophenyl-phenylether	U	0.063	3.5	mg/kg		8270D	08/12/14	10
Chrysene	U	0.056	0.35	mg/kg		8270D	08/12/14	10
Dibenz(a,h)anthracene	U	0.082	0.35	mg/kg		8270D	08/12/14	10
3,3-Dichlorobenzidine	U	0.79	3.5	mg/kg		8270D	08/12/14	10
2,4-Dinitrotoluene	U	0.061	3.5	mg/kg		8270D	08/12/14	10
2,6-Dinitrotoluene	U	0.074	3.5	mg/kg		8270D	08/12/14	10
Fluoranthene	U	0.050	0.35	mg/kg		8270D	08/12/14	10
Fluorene	U	0.068	0.35	mg/kg		8270D	08/12/14	10
Hexachlorobenzene	U	0.086	3.5	mg/kg		8270D	08/12/14	10
Hexachloro-1,3-butadiene	U	0.10	3.5	mg/kg		8270D	08/12/14	10
Hexachlorocyclopentadiene	U	0.59	3.5	mg/kg	J	8270D	08/12/14	10
Hexachloroethane	U	0.13	3.5	mg/kg		8270D	08/12/14	10
Indeno(1,2,3-cd)pyrene	U	0.077	0.35	mg/kg		8270D	08/12/14	10
Isophorone	U	0.052	3.5	mg/kg		8270D	08/12/14	10
Naphthalene	U	0.089	0.35	mg/kg		8270D	08/12/14	10
Nitrobenzene	U	0.070	3.5	mg/kg		8270D	08/12/14	10

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 08/13/14 17:01 Printed: 08/13/14 17:03

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-09

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-SP01-SO

Project # : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/07/14 08:05

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
n-Nitrosodimethylamine	U	0.65	3.5	mg/kg		8270D	08/12/14	10
n-Nitrosodiphenylamine	U	0.059	3.5	mg/kg		8270D	08/12/14	10
n-Nitrosodi-n-propylamine	U	0.091	3.5	mg/kg		8270D	08/12/14	10
Phenanthrene	U	0.053	0.35	mg/kg		8270D	08/12/14	10
Benzylbutyl phthalate	U	0.10	3.5	mg/kg		8270D	08/12/14	10
Bis(2-ethylhexyl)phthalate	1.0	0.12	3.5	mg/kg	J	8270D	08/12/14	10
Di-n-butyl phthalate	U	0.11	3.5	mg/kg		8270D	08/12/14	10
Diethyl phthalate	U	0.069	3.5	mg/kg		8270D	08/12/14	10
Dimethyl phthalate	U	0.054	3.5	mg/kg		8270D	08/12/14	10
Di-n-octyl phthalate	U	0.091	3.5	mg/kg		8270D	08/12/14	10
Pyrene	U	0.12	0.35	mg/kg		8270D	08/12/14	10
1,2,4-Trichlorobenzene	U	0.088	3.5	mg/kg		8270D	08/12/14	10
Acid Extractables								
4-Chloro-3-methylphenol	U	0.048	3.5	mg/kg		8270D	08/12/14	10
2-Chlorophenol	U	0.083	3.5	mg/kg		8270D	08/12/14	10
2,4-Dichlorophenol	U	0.075	3.5	mg/kg		8270D	08/12/14	10
2,4-Dimethylphenol	U	0.47	3.5	mg/kg		8270D	08/12/14	10
4,6-Dinitro-2-methylphenol	U	1.2	3.5	mg/kg		8270D	08/12/14	10
2,4-Dinitrophenol	U	0.98	3.5	mg/kg		8270D	08/12/14	10
2-Nitrophenol	U	0.13	3.5	mg/kg		8270D	08/12/14	10
4-Nitrophenol	U	0.52	3.5	mg/kg		8270D	08/12/14	10
Pentachlorophenol	U	0.48	3.5	mg/kg		8270D	08/12/14	10
Phenol	U	0.070	3.5	mg/kg		8270D	08/12/14	10
2,4,6-Trichlorophenol	U	0.078	3.5	mg/kg		8270D	08/12/14	10
Surrogate Recovery								
2-Fluorophenol	69.4			% Rec.		8270D	08/12/14	10
Phenol-d5	70.7			% Rec.		8270D	08/12/14	10
Nitrobenzene-d5	79.3			% Rec.		8270D	08/12/14	10
2-Fluorobiphenyl	71.4			% Rec.		8270D	08/12/14	10
2,4,6-Tribromophenol	98.1			% Rec.		8270D	08/12/14	10
p-Terphenyl-d14	74.0			% Rec.		8270D	08/12/14	10

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 08/13/14 17:01 Printed: 08/13/14 17:03

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-10

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-SP01-SO

Project : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/07/14 08:05

Parameter	Result	Det. Limit	Units	Limit	Method	Date/Time	By	Dil
Corrosivity	Non-Corrosiv				9045D	08/10/14 1957	SDC	1
pH	6.7		su		9045D	08/10/14 1957	SDC	1
TCLP Extraction	-				1311	08/09/14 0748	CCS	1
Mercury	BDL	0.010	mg/l	0.20	7470A	08/11/14 1325	CCE	1
Arsenic	BDL	0.45	mg/l	5.0	6010C	08/09/14 2008	WBD	1
Barium	BDL	1.4	mg/l	100	6010C	08/09/14 2008	WBD	1
Cadmium	BDL	0.45	mg/l	1.0	6010C	08/09/14 2008	WBD	1
Chromium	BDL	0.45	mg/l	5.0	6010C	08/09/14 2008	WBD	1
Lead	BDL	0.45	mg/l	5.0	6010C	08/09/14 2008	WBD	1
Selenium	BDL	0.45	mg/l	1.0	6010C	08/09/14 2008	WBD	1
Silver	BDL	0.45	mg/l	5.0	6010C	08/09/14 2008	WBD	1
TCLP ZHE Extraction	-				1311	08/10/14 0904	CCS	1
TCLP Volatiles								
Benzene	BDL	0.050	mg/l	0.50	8260B	08/10/14 1929	JC	1
Carbon tetrachloride	BDL	0.050	mg/l	0.50	8260B	08/10/14 1929	JC	1
Chlorobenzene	BDL	0.050	mg/l	100	8260B	08/10/14 1929	JC	1
Chloroform	BDL	0.25	mg/l	6.0	8260B	08/10/14 1929	JC	1
1,2-Dichloroethane	BDL	0.050	mg/l	0.50	8260B	08/10/14 1929	JC	1
1,1-Dichloroethene	BDL	0.050	mg/l	0.70	8260B	08/10/14 1929	JC	1
2-Butanone (MEK)	BDL	0.50	mg/l	200	8260B	08/10/14 1929	JC	1
Tetrachloroethene	BDL	0.050	mg/l	0.70	8260B	08/10/14 1929	JC	1
Trichloroethene	BDL	0.050	mg/l	0.50	8260B	08/10/14 1929	JC	1
Vinyl chloride	BDL	0.050	mg/l	0.20	8260B	08/10/14 1929	JC	1
Surrogate Recovery								
Toluene-d8	103.		% Rec.	114.	8260B	08/10/14 1929	JC	1
Dibromofluoromethane	101.		% Rec.	125.	8260B	08/10/14 1929	JC	1
a,a,a-Trifluorotoluene	108.		% Rec.	114.	8260B	08/10/14 1929	JC	1
4-Bromofluorobenzene	114.		% Rec.	128.	8260B	08/10/14 1929	JC	1
TCLP Semi-Volatiles								
1,4-Dichlorobenzene	BDL	0.10	mg/l	7.5	8270C	08/12/14 1741	KMF	1
2,4-Dinitrotoluene	BDL	0.10	mg/l	0.13	8270C	08/12/14 1741	KMF	1
Hexachlorobenzene	BDL	0.10	mg/l	0.13	8270C	08/12/14 1741	KMF	1
Hexachloro-1,3-butadiene	BDL	0.10	mg/l	0.50	8270C	08/12/14 1741	KMF	1
Hexachloroethane	BDL	0.10	mg/l	3.0	8270C	08/12/14 1741	KMF	1
Nitrobenzene	BDL	0.10	mg/l	2.0	8270C	08/12/14 1741	KMF	1
Pyridine	BDL	0.10	mg/l	5.0	8270C	08/12/14 1741	KMF	1

L714612-10 (PH) - 6.7@19.9c

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-10

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-SP01-SO

Project : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/07/14 08:05

Parameter	Result	Det. Limit	Units	Limit	Method	Date/Time	By	Dil
3&4-Methyl Phenol	BDL	0.10	mg/l	400	8270C	08/12/14 1741	KMF	1
2-Methylphenol	BDL	0.10	mg/l	200	8270C	08/12/14 1741	KMF	1
Pentachlorophenol	BDL	0.10	mg/l	100	8270C	08/12/14 1741	KMF	1
2,4,5-Trichlorophenol	BDL	0.10	mg/l	400	8270C	08/12/14 1741	KMF	1
2,4,6-Trichlorophenol	BDL	0.10	mg/l	2.0	8270C	08/12/14 1741	KMF	1
Surrogate Recovery								
2-Fluorophenol	54.5		% Rec.	87.0	8270C	08/12/14 1741	KMF	1
Phenol-d5	41.0		% Rec.	67.0	8270C	08/12/14 1741	KMF	1
Nitrobenzene-d5	73.3		% Rec.	120.	8270C	08/12/14 1741	KMF	1
2-Fluorobiphenyl	74.2		% Rec.	122.	8270C	08/12/14 1741	KMF	1
2,4,6-Tribromophenol	74.7		% Rec.	148.	8270C	08/12/14 1741	KMF	1
p-Terphenyl-d14	90.9		% Rec.	149.	8270C	08/12/14 1741	KMF	1

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)
Limit - Maximum Contaminant Level as established by the US EPA
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 08/13/14 17:01 Printed: 08/13/14 17:03
L714612-10 (PH) - 6.7@19.9c

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-11

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-SP02-SO

Project # : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/07/14 08:15

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	95.2	0.0333		%		2540 G-2	08/12/14	1
Mercury	0.041	0.0028	0.021	mg/kg		7471	08/09/14	1
Arsenic	3.5	0.65	2.1	mg/kg		6010C	08/12/14	1
Barium	410	0.17	0.52	mg/kg		6010C	08/12/14	1
Cadmium	0.10	0.070	0.52	mg/kg	J	6010C	08/12/14	1
Chromium	19.	0.14	1.0	mg/kg		6010C	08/12/14	1
Lead	61.	0.19	0.52	mg/kg		6010C	08/12/14	1
Selenium	U	0.74	2.1	mg/kg		6010C	08/12/14	1
Silver	U	0.28	1.0	mg/kg		6010C	08/12/14	1
Base/Neutral Extractables								
Acenaphthene	U	0.032	0.17	mg/kg		8270D	08/12/14	5
Acenaphthylene	U	0.034	0.17	mg/kg		8270D	08/12/14	5
Anthracene	U	0.032	0.17	mg/kg		8270D	08/12/14	5
Benzidine	U	0.32	1.7	mg/kg		8270D	08/12/14	5
Benzo(a)anthracene	U	0.021	0.17	mg/kg		8270D	08/12/14	5
Benzo(b)fluoranthene	U	0.035	0.17	mg/kg		8270D	08/12/14	5
Benzo(k)fluoranthene	U	0.029	0.17	mg/kg		8270D	08/12/14	5
Benzo(g,h,i)perylene	U	0.036	0.17	mg/kg		8270D	08/12/14	5
Benzo(a)pyrene	U	0.027	0.17	mg/kg		8270D	08/12/14	5
Bis(2-chlorethoxy)methane	U	0.038	1.7	mg/kg		8270D	08/12/14	5
Bis(2-chloroethyl)ether	U	0.045	1.7	mg/kg		8270D	08/12/14	5
Bis(2-chloroisopropyl)ether	U	0.038	1.7	mg/kg		8270D	08/12/14	5
4-Bromophenyl-phenylether	U	0.057	1.7	mg/kg		8270D	08/12/14	5
2-Chloronaphthalene	U	0.032	0.17	mg/kg		8270D	08/12/14	5
4-Chlorophenyl-phenylether	U	0.031	1.7	mg/kg		8270D	08/12/14	5
Chrysene	U	0.028	0.17	mg/kg		8270D	08/12/14	5
Dibenz(a,h)anthracene	U	0.041	0.17	mg/kg		8270D	08/12/14	5
3,3-Dichlorobenzidine	U	0.40	1.7	mg/kg		8270D	08/12/14	5
2,4-Dinitrotoluene	U	0.030	1.7	mg/kg		8270D	08/12/14	5
2,6-Dinitrotoluene	U	0.037	1.7	mg/kg		8270D	08/12/14	5
Fluoranthene	U	0.025	0.17	mg/kg		8270D	08/12/14	5
Fluorene	U	0.034	0.17	mg/kg		8270D	08/12/14	5
Hexachlorobenzene	U	0.043	1.7	mg/kg		8270D	08/12/14	5
Hexachloro-1,3-butadiene	U	0.050	1.7	mg/kg		8270D	08/12/14	5
Hexachlorocyclopentadiene	U	0.29	1.7	mg/kg	J	8270D	08/12/14	5
Hexachloroethane	U	0.067	1.7	mg/kg		8270D	08/12/14	5
Indeno(1,2,3-cd)pyrene	U	0.039	0.17	mg/kg		8270D	08/12/14	5
Isophorone	U	0.026	1.7	mg/kg		8270D	08/12/14	5
Naphthalene	U	0.044	0.17	mg/kg		8270D	08/12/14	5
Nitrobenzene	U	0.035	1.7	mg/kg		8270D	08/12/14	5

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 08/13/14 17:01 Printed: 08/13/14 17:03

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-11

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-SP02-SO

Project # : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/07/14 08:15

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
n-Nitrosodimethylamine	U	0.32	1.7	mg/kg		8270D	08/12/14	5
n-Nitrosodiphenylamine	U	0.030	1.7	mg/kg		8270D	08/12/14	5
n-Nitrosodi-n-propylamine	U	0.045	1.7	mg/kg		8270D	08/12/14	5
Phenanthrene	U	0.026	0.17	mg/kg		8270D	08/12/14	5
Benzylbutyl phthalate	U	0.052	1.7	mg/kg		8270D	08/12/14	5
Bis(2-ethylhexyl)phthalate	0.49	0.060	1.7	mg/kg	J	8270D	08/12/14	5
Di-n-butyl phthalate	U	0.054	1.7	mg/kg		8270D	08/12/14	5
Diethyl phthalate	U	0.034	1.7	mg/kg		8270D	08/12/14	5
Dimethyl phthalate	U	0.027	1.7	mg/kg		8270D	08/12/14	5
Di-n-octyl phthalate	U	0.045	1.7	mg/kg		8270D	08/12/14	5
Pyrene	U	0.062	0.17	mg/kg		8270D	08/12/14	5
1,2,4-Trichlorobenzene	U	0.044	1.7	mg/kg		8270D	08/12/14	5
Acid Extractables								
4-Chloro-3-methylphenol	U	0.024	1.7	mg/kg		8270D	08/12/14	5
2-Chlorophenol	U	0.042	1.7	mg/kg		8270D	08/12/14	5
2,4-Dichlorophenol	U	0.037	1.7	mg/kg		8270D	08/12/14	5
2,4-Dimethylphenol	U	0.24	1.7	mg/kg		8270D	08/12/14	5
4,6-Dinitro-2-methylphenol	U	0.62	1.7	mg/kg		8270D	08/12/14	5
2,4-Dinitrophenol	U	0.49	1.7	mg/kg		8270D	08/12/14	5
2-Nitrophenol	U	0.065	1.7	mg/kg		8270D	08/12/14	5
4-Nitrophenol	U	0.26	1.7	mg/kg		8270D	08/12/14	5
Pentachlorophenol	U	0.24	1.7	mg/kg		8270D	08/12/14	5
Phenol	U	0.035	1.7	mg/kg		8270D	08/12/14	5
2,4,6-Trichlorophenol	U	0.039	1.7	mg/kg		8270D	08/12/14	5
Surrogate Recovery								
2-Fluorophenol	68.1			% Rec.		8270D	08/12/14	5
Phenol-d5	72.0			% Rec.		8270D	08/12/14	5
Nitrobenzene-d5	74.6			% Rec.		8270D	08/12/14	5
2-Fluorobiphenyl	73.2			% Rec.		8270D	08/12/14	5
2,4,6-Tribromophenol	105.			% Rec.		8270D	08/12/14	5
p-Terphenyl-d14	66.3			% Rec.		8270D	08/12/14	5

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 08/13/14 17:01 Printed: 08/13/14 17:03

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-12

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-SP02-SO

Project : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/07/14 08:15

Parameter	Result	Det. Limit	Units	Limit	Method	Date/Time	By	Dil
Corrosivity	Non-Corrosiv				9045D	08/10/14 1957	SDC	1
pH	6.7		su		9045D	08/10/14 1957	SDC	1
TCLP Extraction	-				1311	08/09/14 0748	CCS	1
Mercury	BDL	0.010	mg/l	0.20	7470A	08/11/14 1328	CCE	1
Arsenic	BDL	0.45	mg/l	5.0	6010C	08/09/14 2013	WBD	1
Barium	1.9	1.4	mg/l	100	6010C	08/09/14 2013	WBD	1
Cadmium	BDL	0.45	mg/l	1.0	6010C	08/09/14 2013	WBD	1
Chromium	BDL	0.45	mg/l	5.0	6010C	08/09/14 2013	WBD	1
Lead	BDL	0.45	mg/l	5.0	6010C	08/09/14 2013	WBD	1
Selenium	BDL	0.45	mg/l	1.0	6010C	08/09/14 2013	WBD	1
Silver	BDL	0.45	mg/l	5.0	6010C	08/09/14 2013	WBD	1
TCLP ZHE Extraction	-				1311	08/10/14 0904	CCS	1
TCLP Volatiles								
Benzene	BDL	0.050	mg/l	0.50	8260B	08/10/14 1949	JC	1
Carbon tetrachloride	BDL	0.050	mg/l	0.50	8260B	08/10/14 1949	JC	1
Chlorobenzene	BDL	0.050	mg/l	100	8260B	08/10/14 1949	JC	1
Chloroform	BDL	0.25	mg/l	6.0	8260B	08/10/14 1949	JC	1
1,2-Dichloroethane	BDL	0.050	mg/l	0.50	8260B	08/10/14 1949	JC	1
1,1-Dichloroethene	BDL	0.050	mg/l	0.70	8260B	08/10/14 1949	JC	1
2-Butanone (MEK)	BDL	0.50	mg/l	200	8260B	08/10/14 1949	JC	1
Tetrachloroethene	BDL	0.050	mg/l	0.70	8260B	08/10/14 1949	JC	1
Trichloroethene	BDL	0.050	mg/l	0.50	8260B	08/10/14 1949	JC	1
Vinyl chloride	BDL	0.050	mg/l	0.20	8260B	08/10/14 1949	JC	1
Surrogate Recovery								
Toluene-d8	103.		% Rec.	114.	8260B	08/10/14 1949	JC	1
Dibromofluoromethane	103.		% Rec.	125.	8260B	08/10/14 1949	JC	1
a,a,a-Trifluorotoluene	109.		% Rec.	114.	8260B	08/10/14 1949	JC	1
4-Bromofluorobenzene	115.		% Rec.	128.	8260B	08/10/14 1949	JC	1
TCLP Semi-Volatiles								
1,4-Dichlorobenzene	BDL	0.10	mg/l	7.5	8270C	08/12/14 1658	KMF	1
2,4-Dinitrotoluene	BDL	0.10	mg/l	0.13	8270C	08/12/14 1658	KMF	1
Hexachlorobenzene	BDL	0.10	mg/l	0.13	8270C	08/12/14 1658	KMF	1
Hexachloro-1,3-butadiene	BDL	0.10	mg/l	0.50	8270C	08/12/14 1658	KMF	1
Hexachloroethane	BDL	0.10	mg/l	3.0	8270C	08/12/14 1658	KMF	1
Nitrobenzene	BDL	0.10	mg/l	2.0	8270C	08/12/14 1658	KMF	1
Pyridine	BDL	0.10	mg/l	5.0	8270C	08/12/14 1658	KMF	1

L714612-12 (PH) - 6.7@19.7c

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-12

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-SP02-SO

Project : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/07/14 08:15

Parameter	Result	Det. Limit	Units	Limit	Method	Date/Time	By	Dil
3&4-Methyl Phenol	BDL	0.10	mg/l	400	8270C	08/12/14 1658	KMF	1
2-Methylphenol	BDL	0.10	mg/l	200	8270C	08/12/14 1658	KMF	1
Pentachlorophenol	BDL	0.10	mg/l	100	8270C	08/12/14 1658	KMF	1
2,4,5-Trichlorophenol	BDL	0.10	mg/l	400	8270C	08/12/14 1658	KMF	1
2,4,6-Trichlorophenol	BDL	0.10	mg/l	2.0	8270C	08/12/14 1658	KMF	1
Surrogate Recovery								
2-Fluorophenol	51.1		% Rec.	87.0	8270C	08/12/14 1658	KMF	1
Phenol-d5	37.3		% Rec.	67.0	8270C	08/12/14 1658	KMF	1
Nitrobenzene-d5	73.2		% Rec.	120.	8270C	08/12/14 1658	KMF	1
2-Fluorobiphenyl	81.6		% Rec.	122.	8270C	08/12/14 1658	KMF	1
2,4,6-Tribromophenol	73.3		% Rec.	148.	8270C	08/12/14 1658	KMF	1
p-Terphenyl-d14	87.3		% Rec.	149.	8270C	08/12/14 1658	KMF	1

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)
Limit - Maximum Contaminant Level as established by the US EPA
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 08/13/14 17:01 Printed: 08/13/14 17:03
L714612-12 (PH) - 6.7@19.7c

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-13

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-WS01-SO

Project # : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/07/14 08:20

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Corrosivity	Non-Corrosive					9045D	08/10/14	1
pH	8.8			su		9045D	08/10/14	1
Total Solids	92.3	0.0333		%		2540 G-2	08/12/14	1
Mercury	0.024	0.0028	0.022	mg/kg		7471	08/09/14	1
Arsenic	5.1	0.65	2.2	mg/kg		6010C	08/12/14	1
Barium	200	0.17	0.54	mg/kg		6010C	08/12/14	1
Cadmium	U	0.070	0.54	mg/kg		6010C	08/12/14	1
Chromium	18.	0.14	1.1	mg/kg		6010C	08/12/14	1
Lead	12.	0.19	0.54	mg/kg		6010C	08/12/14	1
Selenium	U	0.74	2.2	mg/kg		6010C	08/12/14	1
Silver	U	0.28	1.1	mg/kg		6010C	08/12/14	1
Base/Neutral Extractables								
Acenaphthene	U	0.0064	0.036	mg/kg		8270D	08/12/14	1
Acenaphthylene	U	0.0067	0.036	mg/kg		8270D	08/12/14	1
Anthracene	U	0.0063	0.036	mg/kg		8270D	08/12/14	1
Benzidine	U	0.064	0.36	mg/kg		8270D	08/12/14	1
Benzo(a)anthracene	U	0.0043	0.036	mg/kg		8270D	08/12/14	1
Benzo(b)fluoranthene	U	0.0070	0.036	mg/kg		8270D	08/12/14	1
Benzo(k)fluoranthene	U	0.0058	0.036	mg/kg		8270D	08/12/14	1
Benzo(g,h,i)perylene	U	0.0072	0.036	mg/kg		8270D	08/12/14	1
Benzo(a)pyrene	U	0.0055	0.036	mg/kg		8270D	08/12/14	1
Bis(2-chlorethoxy)methane	U	0.0077	0.36	mg/kg		8270D	08/12/14	1
Bis(2-chloroethyl)ether	U	0.0090	0.36	mg/kg		8270D	08/12/14	1
Bis(2-chloroisopropyl)ether	U	0.0076	0.36	mg/kg		8270D	08/12/14	1
4-Bromophenyl-phenylether	U	0.011	0.36	mg/kg		8270D	08/12/14	1
2-Chloronaphthalene	U	0.0064	0.036	mg/kg		8270D	08/12/14	1
4-Chlorophenyl-phenylether	U	0.0063	0.36	mg/kg		8270D	08/12/14	1
Chrysene	U	0.0056	0.036	mg/kg		8270D	08/12/14	1
Dibenz(a,h)anthracene	U	0.0082	0.036	mg/kg		8270D	08/12/14	1
3,3-Dichlorobenzidine	U	0.079	0.36	mg/kg		8270D	08/12/14	1
2,4-Dinitrotoluene	U	0.0061	0.36	mg/kg		8270D	08/12/14	1
2,6-Dinitrotoluene	U	0.0074	0.36	mg/kg		8270D	08/12/14	1
Fluoranthene	U	0.0050	0.036	mg/kg		8270D	08/12/14	1
Fluorene	U	0.0068	0.036	mg/kg		8270D	08/12/14	1
Hexachlorobenzene	U	0.0086	0.36	mg/kg		8270D	08/12/14	1
Hexachloro-1,3-butadiene	U	0.010	0.36	mg/kg		8270D	08/12/14	1
Hexachlorocyclopentadiene	U	0.059	0.36	mg/kg	J	8270D	08/12/14	1
Hexachloroethane	U	0.013	0.36	mg/kg		8270D	08/12/14	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 08/13/14 17:01 Printed: 08/13/14 17:03
L714612-13 (PH) - 8.8@19.7c

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-13

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-WS01-SO

Project # : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/07/14 08:20

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Indeno(1,2,3-cd)pyrene	U	0.0077	0.036	mg/kg		8270D	08/12/14	1
Isophorone	U	0.0052	0.36	mg/kg		8270D	08/12/14	1
Naphthalene	U	0.0089	0.036	mg/kg		8270D	08/12/14	1
Nitrobenzene	U	0.0070	0.36	mg/kg		8270D	08/12/14	1
n-Nitrosodimethylamine	U	0.065	0.36	mg/kg		8270D	08/12/14	1
n-Nitrosodiphenylamine	U	0.0059	0.36	mg/kg		8270D	08/12/14	1
n-Nitrosodi-n-propylamine	U	0.0091	0.36	mg/kg		8270D	08/12/14	1
Phenanthrene	U	0.0053	0.036	mg/kg		8270D	08/12/14	1
Benzylbutyl phthalate	U	0.010	0.36	mg/kg		8270D	08/12/14	1
Bis(2-ethylhexyl)phthalate	U	0.012	0.36	mg/kg		8270D	08/12/14	1
Di-n-butyl phthalate	U	0.011	0.36	mg/kg		8270D	08/12/14	1
Diethyl phthalate	U	0.0069	0.36	mg/kg		8270D	08/12/14	1
Dimethyl phthalate	U	0.0054	0.36	mg/kg		8270D	08/12/14	1
Di-n-octyl phthalate	U	0.0091	0.36	mg/kg		8270D	08/12/14	1
Pyrene	U	0.012	0.036	mg/kg		8270D	08/12/14	1
1,2,4-Trichlorobenzene	U	0.0088	0.36	mg/kg		8270D	08/12/14	1
Acid Extractables								
4-Chloro-3-methylphenol	U	0.0048	0.36	mg/kg		8270D	08/12/14	1
2-Chlorophenol	U	0.0083	0.36	mg/kg		8270D	08/12/14	1
2,4-Dichlorophenol	U	0.0075	0.36	mg/kg		8270D	08/12/14	1
2,4-Dimethylphenol	U	0.047	0.36	mg/kg		8270D	08/12/14	1
4,6-Dinitro-2-methylphenol	U	0.12	0.36	mg/kg		8270D	08/12/14	1
2,4-Dinitrophenol	U	0.098	0.36	mg/kg		8270D	08/12/14	1
2-Nitrophenol	U	0.013	0.36	mg/kg		8270D	08/12/14	1
4-Nitrophenol	U	0.052	0.36	mg/kg		8270D	08/12/14	1
Pentachlorophenol	U	0.048	0.36	mg/kg		8270D	08/12/14	1
Phenol	0.013	0.0070	0.36	mg/kg	J	8270D	08/12/14	1
2,4,6-Trichlorophenol	U	0.0078	0.36	mg/kg		8270D	08/12/14	1
Surrogate Recovery								
2-Fluorophenol	57.8			% Rec.		8270D	08/12/14	1
Phenol-d5	66.1			% Rec.		8270D	08/12/14	1
Nitrobenzene-d5	68.1			% Rec.		8270D	08/12/14	1
2-Fluorobiphenyl	65.9			% Rec.		8270D	08/12/14	1
2,4,6-Tribromophenol	87.0			% Rec.		8270D	08/12/14	1
p-Terphenyl-d14	59.4			% Rec.		8270D	08/12/14	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 08/13/14 17:01 Printed: 08/13/14 17:03
L714612-13 (PH) - 8.8@19.7c

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-14

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-TA01-SL

Project # : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/06/14 16:30

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	87.7	0.0333		%		2540 G-2	08/12/14	1
Mercury	0.026	0.0028	0.023	mg/kg		7471	08/09/14	1
Arsenic	3.5	0.65	2.3	mg/kg		6010C	08/12/14	1
Barium	340	0.17	0.57	mg/kg		6010C	08/12/14	1
Cadmium	0.11	0.070	0.57	mg/kg	J	6010C	08/12/14	1
Chromium	20.	0.14	1.1	mg/kg		6010C	08/12/14	1
Lead	75.	0.19	0.57	mg/kg		6010C	08/12/14	1
Selenium	U	0.74	2.3	mg/kg		6010C	08/12/14	1
Silver	U	0.28	1.1	mg/kg		6010C	08/12/14	1
Base/Neutral Extractables								
Acenaphthene	0.91	0.13	0.75	mg/kg		8270D	08/12/14	20
Acenaphthylene	U	0.13	0.75	mg/kg		8270D	08/12/14	20
Anthracene	1.5	0.13	0.75	mg/kg		8270D	08/12/14	20
Benzidine	U	1.3	7.6	mg/kg		8270D	08/12/14	20
Benzo(a)anthracene	U	0.086	0.75	mg/kg		8270D	08/12/14	20
Benzo(b)fluoranthene	U	0.14	0.75	mg/kg		8270D	08/12/14	20
Benzo(k)fluoranthene	U	0.12	0.75	mg/kg		8270D	08/12/14	20
Benzo(g,h,i)perylene	U	0.14	0.75	mg/kg		8270D	08/12/14	20
Benzo(a)pyrene	U	0.11	0.75	mg/kg		8270D	08/12/14	20
Bis(2-chlorethoxy)methane	U	0.15	7.6	mg/kg		8270D	08/12/14	20
Bis(2-chloroethyl)ether	U	0.18	7.6	mg/kg		8270D	08/12/14	20
Bis(2-chloroisopropyl)ether	U	0.15	7.6	mg/kg		8270D	08/12/14	20
4-Bromophenyl-phenylether	U	0.23	7.6	mg/kg		8270D	08/12/14	20
2-Chloronaphthalene	U	0.13	0.75	mg/kg		8270D	08/12/14	20
4-Chlorophenyl-phenylether	U	0.12	7.6	mg/kg		8270D	08/12/14	20
Chrysene	U	0.11	0.75	mg/kg		8270D	08/12/14	20
Dibenz(a,h)anthracene	U	0.16	0.75	mg/kg		8270D	08/12/14	20
3,3-Dichlorobenzidine	U	1.6	7.6	mg/kg		8270D	08/12/14	20
2,4-Dinitrotoluene	U	0.12	7.6	mg/kg		8270D	08/12/14	20
2,6-Dinitrotoluene	U	0.15	7.6	mg/kg		8270D	08/12/14	20
Fluoranthene	U	0.099	0.75	mg/kg		8270D	08/12/14	20
Fluorene	2.2	0.14	0.75	mg/kg		8270D	08/12/14	20
Hexachlorobenzene	U	0.17	7.6	mg/kg		8270D	08/12/14	20
Hexachloro-1,3-butadiene	U	0.20	7.6	mg/kg		8270D	08/12/14	20
Hexachlorocyclopentadiene	U	1.2	7.6	mg/kg	J	8270D	08/12/14	20
Hexachloroethane	U	0.27	7.6	mg/kg		8270D	08/12/14	20
Indeno(1,2,3-cd)pyrene	U	0.15	0.75	mg/kg		8270D	08/12/14	20
Isophorone	2.0	0.10	7.6	mg/kg	J	8270D	08/12/14	20
Naphthalene	7.3	0.18	0.75	mg/kg		8270D	08/12/14	20
Nitrobenzene	U	0.14	7.6	mg/kg		8270D	08/12/14	20

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 08/13/14 17:01 Printed: 08/13/14 17:03

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-14

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-TA01-SL

Project # : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/06/14 16:30

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
n-Nitrosodimethylamine	U	1.3	7.6	mg/kg		8270D	08/12/14	20
n-Nitrosodiphenylamine	U	0.12	7.6	mg/kg		8270D	08/12/14	20
n-Nitrosodi-n-propylamine	U	0.18	7.6	mg/kg		8270D	08/12/14	20
Phenanthrene	3.0	0.10	0.75	mg/kg		8270D	08/12/14	20
Benzylbutyl phthalate	6.8	0.21	7.6	mg/kg	J	8270D	08/12/14	20
Bis(2-ethylhexyl)phthalate	39.	0.60	19.	mg/kg		8270D	08/13/14	50
Di-n-butyl phthalate	U	0.22	7.6	mg/kg		8270D	08/12/14	20
Diethyl phthalate	U	0.14	7.6	mg/kg		8270D	08/12/14	20
Dimethyl phthalate	U	0.11	7.6	mg/kg		8270D	08/12/14	20
Di-n-octyl phthalate	U	0.18	7.6	mg/kg		8270D	08/12/14	20
Pyrene	0.96	0.25	0.75	mg/kg		8270D	08/12/14	20
1,2,4-Trichlorobenzene	U	0.18	7.6	mg/kg		8270D	08/12/14	20
Acid Extractables								
4-Chloro-3-methylphenol	U	0.095	7.6	mg/kg		8270D	08/12/14	20
2-Chlorophenol	U	0.17	7.6	mg/kg		8270D	08/12/14	20
2,4-Dichlorophenol	U	0.15	7.6	mg/kg		8270D	08/12/14	20
2,4-Dimethylphenol	U	0.94	7.6	mg/kg		8270D	08/12/14	20
4,6-Dinitro-2-methylphenol	U	2.5	7.6	mg/kg		8270D	08/12/14	20
2,4-Dinitrophenol	U	2.0	7.6	mg/kg		8270D	08/12/14	20
2-Nitrophenol	U	0.26	7.6	mg/kg		8270D	08/12/14	20
4-Nitrophenol	U	1.0	7.6	mg/kg		8270D	08/12/14	20
Pentachlorophenol	U	0.96	7.6	mg/kg		8270D	08/12/14	20
Phenol	U	0.14	7.6	mg/kg		8270D	08/12/14	20
2,4,6-Trichlorophenol	U	0.16	7.6	mg/kg		8270D	08/12/14	20
Surrogate Recovery								
2-Fluorophenol	90.4			% Rec.	J7	8270D	08/12/14	20
Phenol-d5	86.8			% Rec.	J7	8270D	08/12/14	20
Nitrobenzene-d5	73.2			% Rec.	J7	8270D	08/12/14	20
2-Fluorobiphenyl	155.			% Rec.	J7	8270D	08/12/14	20
2,4,6-Tribromophenol	96.0			% Rec.	J7	8270D	08/12/14	20
p-Terphenyl-d14	45.7			% Rec.	J7	8270D	08/12/14	20

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 08/13/14 17:01 Printed: 08/13/14 17:03

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-15

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-TA01-SL

Project : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/06/14 16:30

Parameter	Result	Det. Limit	Units	Limit	Method	Date/Time	By	Dil
Corrosivity	Non-Corrosiv				9045D	08/10/14 1957	SDC	1
pH	7.3		su		9045D	08/10/14 1957	SDC	1
TCLP Extraction	-				1311	08/09/14 0748	CCS	1
Mercury	BDL	0.010	mg/l	0.20	7470A	08/11/14 1331	CCE	1
Arsenic	BDL	0.45	mg/l	5.0	6010C	08/09/14 2028	WBD	1
Barium	2.3	1.4	mg/l	100	6010C	08/09/14 2028	WBD	1
Cadmium	BDL	0.45	mg/l	1.0	6010C	08/09/14 2028	WBD	1
Chromium	BDL	0.45	mg/l	5.0	6010C	08/09/14 2028	WBD	1
Lead	BDL	0.45	mg/l	5.0	6010C	08/09/14 2028	WBD	1
Selenium	BDL	0.45	mg/l	1.0	6010C	08/09/14 2028	WBD	1
Silver	BDL	0.45	mg/l	5.0	6010C	08/09/14 2028	WBD	1
TCLP ZHE Extraction	-				1311	08/10/14 0904	CCS	1
TCLP Volatiles								
Benzene	BDL	0.050	mg/l	0.50	8260B	08/10/14 2010	JC	1
Carbon tetrachloride	BDL	0.050	mg/l	0.50	8260B	08/10/14 2010	JC	1
Chlorobenzene	BDL	0.050	mg/l	100	8260B	08/10/14 2010	JC	1
Chloroform	BDL	0.25	mg/l	6.0	8260B	08/10/14 2010	JC	1
1,2-Dichloroethane	BDL	0.050	mg/l	0.50	8260B	08/10/14 2010	JC	1
1,1-Dichloroethene	BDL	0.050	mg/l	0.70	8260B	08/10/14 2010	JC	1
2-Butanone (MEK)	BDL	0.50	mg/l	200	8260B	08/10/14 2010	JC	1
Tetrachloroethene	BDL	0.050	mg/l	0.70	8260B	08/10/14 2010	JC	1
Trichloroethene	BDL	0.050	mg/l	0.50	8260B	08/10/14 2010	JC	1
Vinyl chloride	BDL	0.050	mg/l	0.20	8260B	08/10/14 2010	JC	1
Surrogate Recovery								
Toluene-d8	104.		% Rec.	114.	8260B	08/10/14 2010	JC	1
Dibromofluoromethane	102.		% Rec.	125.	8260B	08/10/14 2010	JC	1
a,a,a-Trifluorotoluene	110.		% Rec.	114.	8260B	08/10/14 2010	JC	1
4-Bromofluorobenzene	116.		% Rec.	128.	8260B	08/10/14 2010	JC	1
TCLP Semi-Volatiles								
1,4-Dichlorobenzene	BDL	0.10	mg/l	7.5	8270C	08/12/14 1719	KMF	1
2,4-Dinitrotoluene	BDL	0.10	mg/l	0.13	8270C	08/12/14 1719	KMF	1
Hexachlorobenzene	BDL	0.10	mg/l	0.13	8270C	08/12/14 1719	KMF	1
Hexachloro-1,3-butadiene	BDL	0.10	mg/l	0.50	8270C	08/12/14 1719	KMF	1
Hexachloroethane	BDL	0.10	mg/l	3.0	8270C	08/12/14 1719	KMF	1
Nitrobenzene	BDL	0.10	mg/l	2.0	8270C	08/12/14 1719	KMF	1
Pyridine	BDL	0.10	mg/l	5.0	8270C	08/12/14 1719	KMF	1

L714612-15 (PH) - 7.3@19.8c

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

August 13,2014

ESC Sample # : L714612-15

Date Received : August 08, 2014
Description : Baker Hughes Nikiski

Site ID :

Sample ID : 14-BH1-TA01-SL

Project : 20275-002.05

Collected By : Dan Frank
Collection Date : 08/06/14 16:30

Parameter	Result	Det. Limit	Units	Limit	Method	Date/Time	By	Dil
3&4-Methyl Phenol	BDL	0.10	mg/l	400	8270C	08/12/14 1719	KMF	1
2-Methylphenol	BDL	0.10	mg/l	200	8270C	08/12/14 1719	KMF	1
Pentachlorophenol	BDL	0.10	mg/l	100	8270C	08/12/14 1719	KMF	1
2,4,5-Trichlorophenol	BDL	0.10	mg/l	400	8270C	08/12/14 1719	KMF	1
2,4,6-Trichlorophenol	BDL	0.10	mg/l	2.0	8270C	08/12/14 1719	KMF	1
Surrogate Recovery								
2-Fluorophenol	61.7		% Rec.	87.0	8270C	08/12/14 1719	KMF	1
Phenol-d5	47.6		% Rec.	67.0	8270C	08/12/14 1719	KMF	1
Nitrobenzene-d5	79.9		% Rec.	120.	8270C	08/12/14 1719	KMF	1
2-Fluorobiphenyl	81.8		% Rec.	122.	8270C	08/12/14 1719	KMF	1
2,4,6-Tribromophenol	77.2		% Rec.	148.	8270C	08/12/14 1719	KMF	1
p-Terphenyl-d14	84.5		% Rec.	149.	8270C	08/12/14 1719	KMF	1

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)
Limit - Maximum Contaminant Level as established by the US EPA
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 08/13/14 17:01 Printed: 08/13/14 17:03
L714612-15 (PH) - 7.3@19.8c

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L714612-02	WG736335	SAMP	Mercury	R2974054	J3
	WG736661	SAMP	Cadmium	R2975028	J
	WG736532	SAMP	Hexachlorocyclopentadiene	R2975494	J
	WG736532	SAMP	Bis(2-ethylhexyl)phthalate	R2975494	J
L714612-03	WG736532	SAMP	Hexachlorocyclopentadiene	R2975494	J
	WG736532	SAMP	Bis(2-ethylhexyl)phthalate	R2975494	J
L714612-04	WG736335	SAMP	Mercury	R2974054	J
	WG736532	SAMP	Hexachlorocyclopentadiene	R2975494	J
L714612-05	WG736335	SAMP	Mercury	R2974054	J
	WG736532	SAMP	Hexachlorocyclopentadiene	R2975494	J
L714612-06	WG736661	SAMP	Cadmium	R2975028	J
	WG736532	SAMP	Hexachlorocyclopentadiene	R2975494	J
	WG736532	SAMP	Bis(2-ethylhexyl)phthalate	R2975494	J
L714612-07	WG736661	SAMP	Selenium	R2975028	J
	WG736661	SAMP	Silver	R2975028	J
	WG736532	SAMP	Anthracene	R2975494	J
	WG736532	SAMP	Fluoranthene	R2975494	J
	WG736532	SAMP	Fluorene	R2975494	J
	WG736532	SAMP	Hexachlorocyclopentadiene	R2975494	J
	WG736532	SAMP	Isophorone	R2975494	J
	WG736532	SAMP	Naphthalene	R2975494	J
	WG736532	SAMP	n-Nitrosodiphenylamine	R2975494	J
	WG736532	SAMP	Phenanthrene	R2975494	J
	WG736532	SAMP	Pyrene	R2975494	J
	WG736532	SAMP	Phenol	R2975494	J
	WG736532	SAMP	2-Fluorophenol	R2975494	J7
	WG736532	SAMP	Phenol-d5	R2975494	J7
	WG736532	SAMP	Nitrobenzene-d5	R2975494	J7
	WG736532	SAMP	2-Fluorobiphenyl	R2975494	J7
	WG736532	SAMP	2,4,6-Tribromophenol	R2975494	J7
	WG736532	SAMP	p-Terphenyl-d14	R2975494	J7
L714612-09	WG736743	SAMP	Barium	R2975109	J3J6
	WG736743	SAMP	Cadmium	R2975109	J
	WG736532	SAMP	Hexachlorocyclopentadiene	R2975494	J
	WG736532	SAMP	Bis(2-ethylhexyl)phthalate	R2975494	J
L714612-11	WG736661	SAMP	Cadmium	R2975028	J
	WG736532	SAMP	Hexachlorocyclopentadiene	R2975494	J
	WG736532	SAMP	Bis(2-ethylhexyl)phthalate	R2975494	J
L714612-13	WG736532	SAMP	Hexachlorocyclopentadiene	R2975494	J
	WG736532	SAMP	Phenol	R2975494	J
L714612-14	WG736661	SAMP	Cadmium	R2975028	J
	WG736532	SAMP	Hexachlorocyclopentadiene	R2975494	J
	WG736532	SAMP	Isophorone	R2975494	J
	WG736532	SAMP	Benzylbutyl phthalate	R2975494	J
	WG736532	SAMP	2-Fluorophenol	R2975494	J7
	WG736532	SAMP	Phenol-d5	R2975494	J7
	WG736532	SAMP	Nitrobenzene-d5	R2975494	J7
	WG736532	SAMP	2-Fluorobiphenyl	R2975494	J7
	WG736532	SAMP	2,4,6-Tribromophenol	R2975494	J7
	WG736532	SAMP	p-Terphenyl-d14	R2975494	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
08/13/14 at 17:03:26

TSR Signing Reports: 358
R4 - Rush: Three Day

Log all samples for QC2MODCN. PO REQUIRED (IF INVOICE EXCEEDS 3K)

Sample: L714612-02 Account: AHTNAAAK Received: 08/08/14 09:00 Due Date: 08/13/14 00:00 RPT Date: 08/13/14 17:01
SHIPPING= $150 x 1 cooler
Sample: L714612-03 Account: AHTNAAAK Received: 08/08/14 09:00 Due Date: 08/13/14 00:00 RPT Date: 08/13/14 17:01

Sample: L714612-04 Account: AHTNAAAK Received: 08/08/14 09:00 Due Date: 08/13/14 00:00 RPT Date: 08/13/14 17:01

Sample: L714612-05 Account: AHTNAAAK Received: 08/08/14 09:00 Due Date: 08/13/14 00:00 RPT Date: 08/13/14 17:01

Sample: L714612-06 Account: AHTNAAAK Received: 08/08/14 09:00 Due Date: 08/13/14 00:00 RPT Date: 08/13/14 17:01

Sample: L714612-07 Account: AHTNAAAK Received: 08/08/14 09:00 Due Date: 08/13/14 00:00 RPT Date: 08/13/14 17:01

Sample: L714612-08 Account: AHTNAAAK Received: 08/08/14 09:00 Due Date: 08/13/14 00:00 RPT Date: 08/13/14 17:01

Sample: L714612-09 Account: AHTNAAAK Received: 08/08/14 09:00 Due Date: 08/13/14 00:00 RPT Date: 08/13/14 17:01

Sample: L714612-10 Account: AHTNAAAK Received: 08/08/14 09:00 Due Date: 08/13/14 00:00 RPT Date: 08/13/14 17:01

Sample: L714612-11 Account: AHTNAAAK Received: 08/08/14 09:00 Due Date: 08/13/14 00:00 RPT Date: 08/13/14 17:01

Sample: L714612-12 Account: AHTNAAAK Received: 08/08/14 09:00 Due Date: 08/13/14 00:00 RPT Date: 08/13/14 17:01

Sample: L714612-13 Account: AHTNAAAK Received: 08/08/14 09:00 Due Date: 08/13/14 00:00 RPT Date: 08/13/14 17:01

Sample: L714612-14 Account: AHTNAAAK Received: 08/08/14 09:00 Due Date: 08/13/14 00:00 RPT Date: 08/13/14 17:01

Sample: L714612-15 Account: AHTNAAAK Received: 08/08/14 09:00 Due Date: 08/13/14 00:00 RPT Date: 08/13/14 17:01

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

Quality Assurance Report
Level II

L714612

August 13, 2014

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Mercury	< .02	mg/kg			WG736335	08/09/14 15:20
Arsenic	< .45	mg/l			WG736443	08/09/14 18:57
Barium	< 1.35	mg/l			WG736443	08/09/14 18:57
Cadmium	< .45	mg/l			WG736443	08/09/14 18:57
Chromium	< .45	mg/l			WG736443	08/09/14 18:57
Lead	< .45	mg/l			WG736443	08/09/14 18:57
Selenium	< .45	mg/l			WG736443	08/09/14 18:57
Silver	< .45	mg/l			WG736443	08/09/14 18:57
1,1-Dichloroethene	< .05	mg/l			WG736524	08/10/14 16:13
1,2-Dichloroethane	< .05	mg/l			WG736524	08/10/14 16:13
2-Butanone (MEK)	< .5	mg/l			WG736524	08/10/14 16:13
Benzene	< .05	mg/l			WG736524	08/10/14 16:13
Carbon tetrachloride	< .05	mg/l			WG736524	08/10/14 16:13
Chlorobenzene	< .05	mg/l			WG736524	08/10/14 16:13
Chloroform	< .25	mg/l			WG736524	08/10/14 16:13
Tetrachloroethene	< .05	mg/l			WG736524	08/10/14 16:13
Trichloroethene	< .05	mg/l			WG736524	08/10/14 16:13
Vinyl chloride	< .05	mg/l			WG736524	08/10/14 16:13
4-Bromofluorobenzene		% Rec.	111.0	71-126	WG736524	08/10/14 16:13
Dibromofluoromethane		% Rec.	100.0	78.3-121	WG736524	08/10/14 16:13
Toluene-d8		% Rec.	102.0	88.5-111	WG736524	08/10/14 16:13
a,a,a-Trifluorotoluene		% Rec.	107.0	85-114	WG736524	08/10/14 16:13
Mercury	< .01	mg/l			WG736431	08/11/14 12:07
Total Solids	< .1	%			WG736458	08/12/14 07:13
Total Solids	< .1	%			WG736457	08/12/14 07:17
Arsenic	< 1	mg/kg			WG736661	08/12/14 08:43
Barium	< .25	mg/kg			WG736661	08/12/14 08:43
Cadmium	< .25	mg/kg			WG736661	08/12/14 08:43
Chromium	< .5	mg/kg			WG736661	08/12/14 08:43
Lead	< .25	mg/kg			WG736661	08/12/14 08:43
Selenium	< 1	mg/kg			WG736661	08/12/14 08:43
Silver	< .5	mg/kg			WG736661	08/12/14 08:43
Arsenic	< 1	mg/kg			WG736743	08/12/14 13:40
Barium	< .25	mg/kg			WG736743	08/12/14 13:40
Cadmium	< .25	mg/kg			WG736743	08/12/14 13:40
Chromium	< .5	mg/kg			WG736743	08/12/14 13:40
Lead	< .25	mg/kg			WG736743	08/12/14 13:40
Selenium	< 1	mg/kg			WG736743	08/12/14 13:40
Silver	< .5	mg/kg			WG736743	08/12/14 13:40
1,4-Dichlorobenzene	< .1	mg/l			WG736322	08/12/14 13:56
2,4,5-Trichlorophenol	< .1	mg/l			WG736322	08/12/14 13:56
2,4,6-Trichlorophenol	< .1	mg/l			WG736322	08/12/14 13:56
2,4-Dinitrotoluene	< .1	mg/l			WG736322	08/12/14 13:56

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L714612

August 13, 2014

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
2-Methylphenol	< .1	mg/l			WG736322	08/12/14 13:56
3&4-Methyl Phenol	< .1	mg/l			WG736322	08/12/14 13:56
Hexachloro-1,3-butadiene	< .1	mg/l			WG736322	08/12/14 13:56
Hexachlorobenzene	< .1	mg/l			WG736322	08/12/14 13:56
Hexachloroethane	< .1	mg/l			WG736322	08/12/14 13:56
Nitrobenzene	< .1	mg/l			WG736322	08/12/14 13:56
Pentachlorophenol	< .1	mg/l			WG736322	08/12/14 13:56
Pyridine	< .1	mg/l			WG736322	08/12/14 13:56
2,4,6-Tribromophenol		% Rec.	74.20	11.2-130	WG736322	08/12/14 13:56
2-Fluorobiphenyl		% Rec.	78.30	29.5-131	WG736322	08/12/14 13:56
2-Fluorophenol		% Rec.	59.10	10-77.9	WG736322	08/12/14 13:56
Nitrobenzene-d5		% Rec.	70.50	21.8-123	WG736322	08/12/14 13:56
Phenol-d5		% Rec.	44.20	5-70.1	WG736322	08/12/14 13:56
p-Terphenyl-d14		% Rec.	88.30	29.3-137	WG736322	08/12/14 13:56
1,2,4-Trichlorobenzene	< .333	mg/kg			WG736532	08/12/14 02:08
2,4,6-Trichlorophenol	< .333	mg/kg			WG736532	08/12/14 02:08
2,4-Dichlorophenol	< .333	mg/kg			WG736532	08/12/14 02:08
2,4-Dimethylphenol	< .333	mg/kg			WG736532	08/12/14 02:08
2,4-Dinitrophenol	< .333	mg/kg			WG736532	08/12/14 02:08
2,4-Dinitrotoluene	< .333	mg/kg			WG736532	08/12/14 02:08
2,6-Dinitrotoluene	< .333	mg/kg			WG736532	08/12/14 02:08
2-Chloronaphthalene	< .033	mg/kg			WG736532	08/12/14 02:08
2-Chlorophenol	< .333	mg/kg			WG736532	08/12/14 02:08
2-Nitrophenol	< .333	mg/kg			WG736532	08/12/14 02:08
3,3-Dichlorobenzidine	< .333	mg/kg			WG736532	08/12/14 02:08
4,6-Dinitro-2-methylphenol	< .333	mg/kg			WG736532	08/12/14 02:08
4-Bromophenyl-phenylether	< .333	mg/kg			WG736532	08/12/14 02:08
4-Chloro-3-methylphenol	< .333	mg/kg			WG736532	08/12/14 02:08
4-Chlorophenyl-phenylether	< .333	mg/kg			WG736532	08/12/14 02:08
4-Nitrophenol	< .333	mg/kg			WG736532	08/12/14 02:08
Acenaphthene	< .033	mg/kg			WG736532	08/12/14 02:08
Acenaphthylene	< .033	mg/kg			WG736532	08/12/14 02:08
Anthracene	< .033	mg/kg			WG736532	08/12/14 02:08
Benzidine	< .333	mg/kg			WG736532	08/12/14 02:08
Benzo(a)anthracene	< .033	mg/kg			WG736532	08/12/14 02:08
Benzo(a)pyrene	< .033	mg/kg			WG736532	08/12/14 02:08
Benzo(b)fluoranthene	< .033	mg/kg			WG736532	08/12/14 02:08
Benzo(g,h,i)perylene	< .033	mg/kg			WG736532	08/12/14 02:08
Benzo(k)fluoranthene	< .033	mg/kg			WG736532	08/12/14 02:08
Benzylbutyl phthalate	< .333	mg/kg			WG736532	08/12/14 02:08
Bis(2-chlorethoxy)methane	< .333	mg/kg			WG736532	08/12/14 02:08
Bis(2-chloroethyl)ether	< .333	mg/kg			WG736532	08/12/14 02:08
Bis(2-chloroisopropyl)ether	< .333	mg/kg			WG736532	08/12/14 02:08
Bis(2-ethylhexyl)phthalate	< .333	mg/kg			WG736532	08/12/14 02:08
Chrysene	< .033	mg/kg			WG736532	08/12/14 02:08
Di-n-butyl phthalate	< .333	mg/kg			WG736532	08/12/14 02:08
Di-n-octyl phthalate	< .333	mg/kg			WG736532	08/12/14 02:08
Dibenz(a,h)anthracene	< .033	mg/kg			WG736532	08/12/14 02:08
Diethyl phthalate	< .333	mg/kg			WG736532	08/12/14 02:08
Dimethyl phthalate	< .333	mg/kg			WG736532	08/12/14 02:08
Fluoranthene	< .033	mg/kg			WG736532	08/12/14 02:08
Fluorene	< .033	mg/kg			WG736532	08/12/14 02:08
Hexachloro-1,3-butadiene	< .333	mg/kg			WG736532	08/12/14 02:08
Hexachlorobenzene	< .333	mg/kg			WG736532	08/12/14 02:08
Hexachlorocyclopentadiene	< .333	mg/kg			WG736532	08/12/14 02:08
Hexachloroethane	< .333	mg/kg			WG736532	08/12/14 02:08
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG736532	08/12/14 02:08

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L714612

August 13, 2014

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Isophorone	< .333	mg/kg			WG736532	08/12/14 02:08
n-Nitrosodi-n-propylamine	< .333	mg/kg			WG736532	08/12/14 02:08
n-Nitrosodimethylamine	< .333	mg/kg			WG736532	08/12/14 02:08
n-Nitrosodiphenylamine	< .333	mg/kg			WG736532	08/12/14 02:08
Naphthalene	< .033	mg/kg			WG736532	08/12/14 02:08
Nitrobenzene	< .333	mg/kg			WG736532	08/12/14 02:08
Pentachlorophenol	< .333	mg/kg			WG736532	08/12/14 02:08
Phenanthrene	< .033	mg/kg			WG736532	08/12/14 02:08
Phenol	< .333	mg/kg			WG736532	08/12/14 02:08
Pyrene	< .033	mg/kg			WG736532	08/12/14 02:08
2,4,6-Tribromophenol		% Rec.	63.30	21.6-142	WG736532	08/12/14 02:08
2-Fluorobiphenyl		% Rec.	46.50	34.9-129	WG736532	08/12/14 02:08
2-Fluorophenol		% Rec.	40.40	21.1-116	WG736532	08/12/14 02:08
Nitrobenzene-d5		% Rec.	45.80	21.9-129	WG736532	08/12/14 02:08
Phenol-d5		% Rec.	43.00	26.3-121	WG736532	08/12/14 02:08
p-Terphenyl-d14		% Rec.	45.10	21.5-128	WG736532	08/12/14 02:08

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Mercury	mg/kg	0.100	0.129	21.0*	20	L714612-02	WG736335
Mercury	mg/l	0.0	-0.000150	134.*	20	L713081-11	WG736431
Total Solids	%	85.7	78.5	8.68*	5	L714614-05	WG736458
Total Solids	%	85.8	86.2	0.401	5	L714607-07	WG736457
pH	su	6.40	6.40	0.312	1	L714593-01	WG736531
pH	su	7.90	7.90	0.253	1	L714630-01	WG736531
Corrosivity		0.0	0.0	0.0	10	L714612-02	WG736558
Ignitability	Deg. F	0.00	0.00	0.00	10	L714163-03	WG736679
Ignitability	Deg. F	0.00	0.00	0.00	10	L714586-01	WG736679
Ignitability	Deg. F	0.00	0.00	0.00	10	L714586-02	WG736679
Ignitability	Deg. F	0.00	0.00	0.00	10	L714586-03	WG736679
Ignitability	Deg. F	0.00	0.00	0.00	10	L714586-04	WG736679

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Mercury	mg/kg	12.4	13.6	110.	71.6-128	WG736335
Arsenic	mg/l	9	8.81	98.0	80-120	WG736443
Barium	mg/l	9	9.06	101.	80-120	WG736443
Cadmium	mg/l	9	8.85	98.0	80-120	WG736443
Chromium	mg/l	9	9.14	102.	80-120	WG736443
Lead	mg/l	9	8.97	100.	80-120	WG736443
Selenium	mg/l	9	8.91	99.0	80-120	WG736443
Silver	mg/l	9	8.77	97.0	80-120	WG736443

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L714612

August 13, 2014

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
1,1-Dichloroethene	mg/l	.025	0.0233	93.1	67.8-129	WG736524
1,2-Dichloroethane	mg/l	.025	0.0233	93.3	68.8-124	WG736524
2-Butanone (MEK)	mg/l	.125	0.114	90.9	55-149	WG736524
Benzene	mg/l	.025	0.0258	103.	74.8-121	WG736524
Carbon tetrachloride	mg/l	.025	0.0245	97.9	70.2-123	WG736524
Chlorobenzene	mg/l	.025	0.0244	97.6	78.1-119	WG736524
Chloroform	mg/l	.025	0.0235	94.0	76-121	WG736524
Tetrachloroethene	mg/l	.025	0.0243	97.1	72.6-126	WG736524
Trichloroethene	mg/l	.025	0.0250	99.8	77.7-118	WG736524
Vinyl chloride	mg/l	.025	0.0262	105.	65.9-128	WG736524
4-Bromofluorobenzene				108.0	71-126	WG736524
Dibromofluoromethane				99.80	78.3-121	WG736524
Toluene-d8				102.0	88.5-111	WG736524
a,a,a-Trifluorotoluene				106.0	85-114	WG736524
Mercury	mg/l	.03	0.0285	95.0	85-115	WG736431
Total Solids	%	50	50.0	100.	85-115	WG736458
Total Solids	%	50	50.0	100.	85-115	WG736457
pH	su	6.33	6.40	101.	98.3-101.7	WG736531
Corrosivity		6.33	6.40	101.	98.3-101.7	WG736558
Arsenic	mg/kg	237	257.	109.	83.1-117	WG736661
Barium	mg/kg	252	287.	114.	84.1-116	WG736661
Cadmium	mg/kg	191	204.	107.	83.2-117	WG736661
Chromium	mg/kg	128	143.	112.	81.3-118	WG736661
Lead	mg/kg	103	110.	107.	83.1-117	WG736661
Selenium	mg/kg	110	117.	107.	78.7-122	WG736661
Silver	mg/kg	47.3	51.3	109.	66.2-134	WG736661
Arsenic	mg/kg	237	260.	110.	83.1-117	WG736743
Barium	mg/kg	252	253.	100.	84.1-116	WG736743
Cadmium	mg/kg	191	190.	99.0	83.2-117	WG736743
Chromium	mg/kg	128	135.	105.	81.3-118	WG736743
Lead	mg/kg	103	109.	106.	83.1-117	WG736743
Selenium	mg/kg	110	121.	110.	78.7-122	WG736743
Silver	mg/kg	47.3	48.3	102.	66.2-134	WG736743
Ignitability	Deg. F	82	83.0	101.	93-107	WG736679
1,4-Dichlorobenzene	mg/l	.025	0.0136	54.4	21-89.4	WG736322
2,4,5-Trichlorophenol	mg/l	.025	0.0187	74.7	34.9-112	WG736322
2,4,6-Trichlorophenol	mg/l	.025	0.0176	70.5	29.8-107	WG736322
2,4-Dinitrotoluene	mg/l	.025	0.0209	83.5	31.2-105	WG736322
2-Methylphenol	mg/l	.025	0.0161	64.6	26.4-86.9	WG736322
3&4-Methyl Phenol	mg/l	.025	0.0174	69.5	27.9-92	WG736322

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L714612

August 13, 2014

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Hexachloro-1,3-butadiene	mg/l	.025	0.0120	48.1	16.1-104	WG736322
Hexachlorobenzene	mg/l	.025	0.0161	64.6	38.5-116	WG736322
Hexachloroethane	mg/l	.025	0.0134	53.4	16.5-89.8	WG736322
Nitrobenzene	mg/l	.025	0.0178	71.2	31.4-106	WG736322
Pentachlorophenol	mg/l	.025	0.0170	68.0	10-97.4	WG736322
Pyridine	mg/l	.025	0.0102	40.8	13.5-58.9	WG736322
2,4,6-Tribromophenol				64.40	11.2-130	WG736322
2-Fluorobiphenyl				70.20	29.5-131	WG736322
2-Fluorophenol				54.90	10-77.9	WG736322
Nitrobenzene-d5				77.40	21.8-123	WG736322
Phenol-d5				45.40	5-70.1	WG736322
p-Terphenyl-d14				72.80	29.3-137	WG736322
1,2,4-Trichlorobenzene	mg/kg	.333	0.238	71.4	39.8-100	WG736532
2,4,6-Trichlorophenol	mg/kg	.333	0.283	85.1	44.4-108	WG736532
2,4-Dichlorophenol	mg/kg	.333	0.280	84.2	46.2-109	WG736532
2,4-Dimethylphenol	mg/kg	.333	0.311	93.3	42.2-110	WG736532
2,4-Dinitrophenol	mg/kg	.333	0.255	76.6	10-105	WG736532
2,4-Dinitrotoluene	mg/kg	.333	0.305	91.6	53-112	WG736532
2,6-Dinitrotoluene	mg/kg	.333	0.298	89.6	51.6-110	WG736532
2-Chloronaphthalene	mg/kg	.333	0.267	80.3	47.1-105	WG736532
2-Chlorophenol	mg/kg	.333	0.254	76.4	40.8-103	WG736532
2-Nitrophenol	mg/kg	.333	0.318	95.5	44.2-113	WG736532
3,3-Dichlorobenzidine	mg/kg	.333	0.224	67.1	21-101	WG736532
4,6-Dinitro-2-methylphenol	mg/kg	.333	0.328	98.4	23.1-119	WG736532
4-Bromophenyl-phenylether	mg/kg	.333	0.270	81.0	51.4-110	WG736532
4-Chloro-3-methylphenol	mg/kg	.333	0.340	102.	51.1-113	WG736532
4-Chlorophenyl-phenylether	mg/kg	.333	0.256	76.9	48.1-108	WG736532
4-Nitrophenol	mg/kg	.333	0.274	82.4	34.8-109	WG736532
Acenaphthene	mg/kg	.333	0.263	78.9	48.9-107	WG736532
Acenaphthylene	mg/kg	.333	0.248	74.3	49.2-111	WG736532
Anthracene	mg/kg	.333	0.268	80.5	52-112	WG736532
Benzidine	mg/kg	.333	0.0307	9.21	0-48	WG736532
Benzo(a)anthracene	mg/kg	.333	0.269	80.7	52.3-106	WG736532
Benzo(a)pyrene	mg/kg	.333	0.244	73.4	51.9-106	WG736532
Benzo(b)fluoranthene	mg/kg	.333	0.251	75.5	51.3-106	WG736532
Benzo(g,h,i)perylene	mg/kg	.333	0.284	85.2	45.8-108	WG736532
Benzo(k)fluoranthene	mg/kg	.333	0.268	80.5	52.9-107	WG736532
Benzylbutyl phthalate	mg/kg	.333	0.314	94.2	47.5-115	WG736532
Bis(2-chlorethoxy)methane	mg/kg	.333	0.267	80.3	44.9-108	WG736532
Bis(2-chloroethyl)ether	mg/kg	.333	0.237	71.3	32.5-112	WG736532
Bis(2-chloroisopropyl)ether	mg/kg	.333	0.239	71.8	40.4-99	WG736532
Bis(2-ethylhexyl)phthalate	mg/kg	.333	0.300	90.0	48.1-116	WG736532
Chrysene	mg/kg	.333	0.271	81.5	54.4-110	WG736532
Di-n-butyl phthalate	mg/kg	.333	0.288	86.4	49.7-113	WG736532
Di-n-octyl phthalate	mg/kg	.333	0.317	95.2	49.6-112	WG736532
Dibenz(a,h)anthracene	mg/kg	.333	0.284	85.2	45.7-111	WG736532
Diethyl phthalate	mg/kg	.333	0.270	81.1	52-112	WG736532
Dimethyl phthalate	mg/kg	.333	0.269	80.7	51.4-108	WG736532
Fluoranthene	mg/kg	.333	0.267	80.2	53.7-110	WG736532
Fluorene	mg/kg	.333	0.275	82.5	51.1-109	WG736532
Hexachloro-1,3-butadiene	mg/kg	.333	0.269	80.8	41.5-112	WG736532
Hexachlorobenzene	mg/kg	.333	0.266	79.7	43.2-104	WG736532
Hexachlorocyclopentadiene	mg/kg	.333	0.105	31.6	13.5-123	WG736532
Hexachloroethane	mg/kg	.333	0.244	73.2	36.2-103	WG736532
Indeno(1,2,3-cd)pyrene	mg/kg	.333	0.283	85.1	47.5-109	WG736532
Isophorone	mg/kg	.333	0.314	94.4	28.8-104	WG736532
n-Nitrosodi-n-propylamine	mg/kg	.333	0.281	84.5	43.3-109	WG736532

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L714612

August 13, 2014

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
n-Nitrosodimethylamine	mg/kg	.333	0.233	69.8	18.1-122	WG736532
n-Nitrosodiphenylamine	mg/kg	.333	0.269	80.7	48.8-107	WG736532
Naphthalene	mg/kg	.333	0.242	72.8	43.4-103	WG736532
Nitrobenzene	mg/kg	.333	0.303	90.9	40.7-109	WG736532
Pentachlorophenol	mg/kg	.333	0.296	89.0	16.2-102	WG736532
Phenanthrene	mg/kg	.333	0.263	79.1	51.6-107	WG736532
Phenol	mg/kg	.333	0.257	77.1	41.5-106	WG736532
Pyrene	mg/kg	.333	0.284	85.2	47.1-108	WG736532
2,4,6-Tribromophenol				103.0	21.6-142	WG736532
2-Fluorobiphenyl				73.50	34.9-129	WG736532
2-Fluorophenol				73.00	21.1-116	WG736532
Nitrobenzene-d5				87.70	21.9-129	WG736532
Phenol-d5				74.70	26.3-121	WG736532
p-Terphenyl-d14				69.90	21.5-128	WG736532

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
Arsenic	mg/l	9.01	8.81	100.	80-120	2.00	20	WG736443
Barium	mg/l	9.39	9.06	104.	80-120	4.00	20	WG736443
Cadmium	mg/l	9.19	8.85	102.	80-120	4.00	20	WG736443
Chromium	mg/l	9.45	9.14	105.	80-120	3.00	20	WG736443
Lead	mg/l	9.20	8.97	102.	80-120	3.00	20	WG736443
Selenium	mg/l	9.09	8.91	101.	80-120	2.00	20	WG736443
Silver	mg/l	9.04	8.77	100.	80-120	3.00	20	WG736443
1,1-Dichloroethene	mg/l	0.0225	0.0233	90.0	67.8-129	3.29	20	WG736524
1,2-Dichloroethane	mg/l	0.0233	0.0233	93.0	68.8-124	0.100	20	WG736524
2-Butanone (MEK)	mg/l	0.110	0.114	88.0	55-149	3.12	20	WG736524
Benzene	mg/l	0.0254	0.0258	102.	74.8-121	1.54	20	WG736524
Carbon tetrachloride	mg/l	0.0239	0.0245	95.0	70.2-123	2.50	20	WG736524
Chlorobenzene	mg/l	0.0241	0.0244	96.0	78.1-119	1.12	20	WG736524
Chloroform	mg/l	0.0231	0.0235	92.0	76-121	1.63	20	WG736524
Tetrachloroethene	mg/l	0.0235	0.0243	94.0	72.6-126	3.13	20	WG736524
Trichloroethene	mg/l	0.0245	0.0250	98.0	77.7-118	1.69	20	WG736524
Vinyl chloride	mg/l	0.0254	0.0262	102.	65.9-128	3.25	20	WG736524
4-Bromofluorobenzene				107.0	71-126			WG736524
Dibromofluoromethane				99.50	78.3-121			WG736524
Toluene-d8				101.0	88.5-111			WG736524
a,a,a-Trifluorotoluene				106.0	85-114			WG736524
pH	su	6.40	6.40	101.	98.3-101.7	0.0	20	WG736531
Corrosivity		6.40	6.40	101.	98.3-101.7	0.0	10	WG736558
Arsenic	mg/kg	256.	257.	108.	83.1-117	1.00	20	WG736661
Barium	mg/kg	283.	287.	112.	84.1-116	1.00	20	WG736661
Cadmium	mg/kg	203.	204.	106.	83.2-117	1.00	20	WG736661
Chromium	mg/kg	141.	143.	110.	81.3-118	2.00	20	WG736661
Lead	mg/kg	109.	110.	106.	83.1-117	1.00	20	WG736661
Selenium	mg/kg	117.	117.	106.	78.7-122	0.0	20	WG736661
Silver	mg/kg	50.3	51.3	106.	66.2-134	2.00	20	WG736661
Arsenic	mg/kg	256.	260.	108.	83.1-117	2.00	20	WG736743

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L714612

August 13, 2014

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
Barium	mg/kg	256.	253.	101.	84.1-116	1.00	20	WG736743
Cadmium	mg/kg	192.	190.	100.	83.2-117	1.00	20	WG736743
Chromium	mg/kg	134.	135.	104.	81.3-118	1.00	20	WG736743
Lead	mg/kg	108.	109.	105.	83.1-117	1.00	20	WG736743
Selenium	mg/kg	121.	121.	110.	78.7-122	0.0	20	WG736743
Silver	mg/kg	48.7	48.3	103.	66.2-134	1.00	20	WG736743
Ignitability	Deg. F	83.0	83.0	101.	93-107	0.00	20	WG736679
1,4-Dichlorobenzene	mg/l	0.0143	0.0136	57.0	21-89.4	5.34	32.6	WG736322
2,4,5-Trichlorophenol	mg/l	0.0203	0.0187	81.0	34.9-112	8.45	23.9	WG736322
2,4,6-Trichlorophenol	mg/l	0.0185	0.0176	74.0	29.8-107	4.75	24.1	WG736322
2,4-Dinitrotoluene	mg/l	0.0238	0.0209	95.0	31.2-105	13.1	22	WG736322
2-Methylphenol	mg/l	0.0173	0.0161	69.0	26.4-86.9	6.82	26.5	WG736322
3&4-Methyl Phenol	mg/l	0.0191	0.0174	76.0	27.9-92	9.75	27	WG736322
Hexachloro-1,3-butadiene	mg/l	0.0130	0.0120	52.0	16.1-104	7.85	31.2	WG736322
Hexachlorobenzene	mg/l	0.0191	0.0161	76.0	38.5-116	16.6	20.1	WG736322
Hexachloroethane	mg/l	0.0141	0.0134	56.0	16.5-89.8	5.33	30.7	WG736322
Nitrobenzene	mg/l	0.0195	0.0178	78.0	31.4-106	9.10	25.7	WG736322
Pentachlorophenol	mg/l	0.0189	0.0170	76.0	10-97.4	10.6	35.1	WG736322
Pyridine	mg/l	0.0109	0.0102	44.0	13.5-58.9	7.04	32.5	WG736322
2,4,6-Tribromophenol				69.60	11.2-130			WG736322
2-Fluorobiphenyl				74.30	29.5-131			WG736322
2-Fluorophenol				57.70	10-77.9			WG736322
Nitrobenzene-d5				81.70	21.8-123			WG736322
Phenol-d5				46.00	5-70.1			WG736322
p-Terphenyl-d14				78.30	29.3-137			WG736322
1,2,4-Trichlorobenzene	mg/kg	0.219	0.238	66.0	39.8-100	8.40	20	WG736532
2,4,6-Trichlorophenol	mg/kg	0.279	0.283	84.0	44.4-108	1.67	20	WG736532
2,4-Dichlorophenol	mg/kg	0.261	0.280	78.0	46.2-109	7.18	20	WG736532
2,4-Dimethylphenol	mg/kg	0.295	0.311	89.0	42.2-110	4.97	20	WG736532
2,4-Dinitrophenol	mg/kg	0.220	0.255	66.0	10-105	14.6	36.5	WG736532
2,4-Dinitrotoluene	mg/kg	0.305	0.305	92.0	53-112	0.0100	20	WG736532
2,6-Dinitrotoluene	mg/kg	0.293	0.298	88.0	51.6-110	1.77	20	WG736532
2-Chloronaphthalene	mg/kg	0.261	0.267	78.0	47.1-105	2.28	20	WG736532
2-Chlorophenol	mg/kg	0.237	0.254	71.0	40.8-103	7.13	20	WG736532
2-Nitrophenol	mg/kg	0.295	0.318	88.0	44.2-113	7.54	20.9	WG736532
3,3-Dichlorobenzidine	mg/kg	0.235	0.224	70.0	21-101	4.99	22	WG736532
4,6-Dinitro-2-methylphenol	mg/kg	0.319	0.328	96.0	23.1-119	2.75	23.7	WG736532
4-Bromophenyl-phenylether	mg/kg	0.262	0.270	79.0	51.4-110	2.95	20	WG736532
4-Chloro-3-methylphenol	mg/kg	0.327	0.340	98.0	51.1-113	3.82	20	WG736532
4-Chlorophenyl-phenylether	mg/kg	0.257	0.256	77.0	48.1-108	0.280	20	WG736532
4-Nitrophenol	mg/kg	0.269	0.274	81.0	34.8-109	2.11	20	WG736532
Acenaphthene	mg/kg	0.254	0.263	76.0	48.9-107	3.32	20	WG736532
Acenaphthylene	mg/kg	0.240	0.248	72.0	49.2-111	2.98	20	WG736532
Anthracene	mg/kg	0.258	0.268	78.0	52-112	3.63	20	WG736532
Benzidine	mg/kg	0.0290	0.0307	9.00	0-48	5.67	40	WG736532
Benzo(a)anthracene	mg/kg	0.265	0.269	79.0	52.3-106	1.62	20	WG736532
Benzo(a)pyrene	mg/kg	0.243	0.244	73.0	51.9-106	0.540	20	WG736532
Benzo(b)fluoranthene	mg/kg	0.254	0.251	76.0	51.3-106	1.12	20	WG736532
Benzo(g,h,i)perylene	mg/kg	0.271	0.284	81.0	45.8-108	4.54	20	WG736532
Benzo(k)fluoranthene	mg/kg	0.263	0.268	79.0	52.9-107	1.78	20	WG736532
Benzylbutyl phthalate	mg/kg	0.284	0.314	85.0	47.5-115	9.88	20	WG736532
Bis(2-chlorethoxy)methane	mg/kg	0.251	0.267	75.0	44.9-108	6.18	20	WG736532
Bis(2-chloroethyl)ether	mg/kg	0.218	0.237	65.0	32.5-112	8.56	26	WG736532

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L714612

August 13, 2014

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
Bis(2-chloroisopropyl)ether	mg/kg	0.225	0.239	67.0	40.4-99	6.19	20.7	WG736532
Bis(2-ethylhexyl)phthalate	mg/kg	0.273	0.300	82.0	48.1-116	9.47	20.5	WG736532
Chrysene	mg/kg	0.266	0.271	80.0	54.4-110	1.92	20	WG736532
Di-n-butyl phthalate	mg/kg	0.277	0.288	83.0	49.7-113	3.93	20	WG736532
Di-n-octyl phthalate	mg/kg	0.293	0.317	88.0	49.6-112	7.67	22	WG736532
Dibenz(a,h)anthracene	mg/kg	0.271	0.284	81.0	45.7-111	4.44	20	WG736532
Diethyl phthalate	mg/kg	0.263	0.270	79.0	52-112	2.51	20	WG736532
Dimethyl phthalate	mg/kg	0.267	0.269	80.0	51.4-108	0.780	20	WG736532
Fluoranthene	mg/kg	0.260	0.267	78.0	53.7-110	2.67	20	WG736532
Fluorene	mg/kg	0.275	0.275	83.0	51.1-109	0.270	20	WG736532
Hexachloro-1,3-butadiene	mg/kg	0.238	0.269	72.0	41.5-112	12.1	20	WG736532
Hexachlorobenzene	mg/kg	0.267	0.266	80.0	43.2-104	0.470	20.1	WG736532
Hexachlorocyclopentadiene	mg/kg	0.101	0.105	30.0	13.5-123	3.99	20.7	WG736532
Hexachloroethane	mg/kg	0.215	0.244	64.0	36.2-103	12.7	22.7	WG736532
Indeno(1,2,3-cd)pyrene	mg/kg	0.274	0.283	82.0	47.5-109	3.50	20	WG736532
Isophorone	mg/kg	0.299	0.314	90.0	28.8-104	5.08	20	WG736532
n-Nitrosodi-n-propylamine	mg/kg	0.278	0.281	83.0	43.3-109	1.18	20	WG736532
n-Nitrosodimethylamine	mg/kg	0.208	0.233	62.0	18.1-122	11.0	23.5	WG736532
n-Nitrosodiphenylamine	mg/kg	0.259	0.269	78.0	48.8-107	3.51	20	WG736532
Naphthalene	mg/kg	0.223	0.242	67.0	43.4-103	8.25	20	WG736532
Nitrobenzene	mg/kg	0.268	0.303	80.0	40.7-109	12.3	21	WG736532
Pentachlorophenol	mg/kg	0.265	0.296	80.0	16.2-102	11.2	22.9	WG736532
Phenanthrene	mg/kg	0.258	0.263	77.0	51.6-107	2.19	20	WG736532
Phenol	mg/kg	0.253	0.257	76.0	41.5-106	1.54	20	WG736532
Pyrene	mg/kg	0.254	0.284	76.0	47.1-108	10.9	20	WG736532
2,4,6-Tribromophenol				103.0	21.6-142			WG736532
2-Fluorobiphenyl				77.90	34.9-129			WG736532
2-Fluorophenol				70.30	21.1-116			WG736532
Nitrobenzene-d5				84.10	21.9-129			WG736532
Phenol-d5				77.00	26.3-121			WG736532
p-Terphenyl-d14				70.70	21.5-128			WG736532

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Mercury	mg/kg	0.589	0.129	.5	92.0	80-120	L714612-02	WG736335
Arsenic	mg/l	9.17	0.0179	9	100.	75-125	L714494-01	WG736443
Barium	mg/l	9.27	0.0553	9	100.	75-125	L714494-01	WG736443
Cadmium	mg/l	9.17	0.00141	9	100.	75-125	L714494-01	WG736443
Chromium	mg/l	9.34	0.00550	9	100.	75-125	L714494-01	WG736443
Lead	mg/l	9.17	-0.00144	9	100.	75-125	L714494-01	WG736443
Selenium	mg/l	9.34	0.0563	9	100.	75-125	L714494-01	WG736443
Silver	mg/l	8.99	0.0118	9	100.	75-125	L714494-01	WG736443
1,1-Dichloroethene	mg/l	1.19	0.0	1.25	95.0	51.1-140	L714273-01	WG736524
1,2-Dichloroethane	mg/l	1.10	0.0	1.25	88.0	60-126	L714273-01	WG736524
2-Butanone (MEK)	mg/l	4.99	0.0457	6.25	79.0	22.4-138	L714273-01	WG736524
Benzene	mg/l	1.27	0.00203	1.25	100.	54.3-133	L714273-01	WG736524
Carbon tetrachloride	mg/l	1.26	0.0	1.25	100.	55.7-134	L714273-01	WG736524
Chlorobenzene	mg/l	1.19	0.0	1.25	95.0	67-125	L714273-01	WG736524
Chloroform	mg/l	1.17	0.0	1.25	94.0	63-129	L714273-01	WG736524
Tetrachloroethene	mg/l	1.19	0.0	1.25	95.0	53-139	L714273-01	WG736524
Trichloroethene	mg/l	1.22	0.0	1.25	98.0	44.1-149	L714273-01	WG736524
Vinyl chloride	mg/l	1.36	0.0	1.25	110.	47.8-137	L714273-01	WG736524
4-Bromofluorobenzene					109.0	71-126		WG736524
Dibromofluoromethane					101.0	78.3-121		WG736524

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L714612

August 13, 2014

Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Toluene-d8					103.0	88.5-111		
a,a,a-Trifluorotoluene					107.0	85-114		
Mercury	mg/l	0.0285	-0.000150	.03	95.0	80-120	L713081-11	WG736431
Arsenic	mg/kg	101.	4.23	100	97.0	75-125	L714612-02	WG736661
Barium	mg/kg	295.	208.	100	87.0	75-125	L714612-02	WG736661
Cadmium	mg/kg	98.4	0.264	100	98.0	75-125	L714612-02	WG736661
Chromium	mg/kg	117.	16.9	100	100.	75-125	L714612-02	WG736661
Lead	mg/kg	131.	38.8	100	92.0	75-125	L714612-02	WG736661
Selenium	mg/kg	98.4	0.274	100	98.0	75-125	L714612-02	WG736661
Silver	mg/kg	98.4	-0.102	100	98.0	75-125	L714612-02	WG736661
Arsenic	mg/kg	100.	3.51	100	96.0	75-125	L714612-09	WG736743
Barium	mg/kg	255.	137.	100	120.	75-125	L714612-09	WG736743
Cadmium	mg/kg	92.5	0.208	100	92.0	75-125	L714612-09	WG736743
Chromium	mg/kg	107.	12.1	100	95.0	75-125	L714612-09	WG736743
Lead	mg/kg	125.	26.3	100	99.0	75-125	L714612-09	WG736743
Selenium	mg/kg	98.0	-1.17	100	98.0	75-125	L714612-09	WG736743
Silver	mg/kg	91.7	-0.0509	100	92.0	75-125	L714612-09	WG736743
1,4-Dichlorobenzene	mg/l	0.194	0.0	.25	77.0	14-104	L714150-01	WG736322
2,4,5-Trichlorophenol	mg/l	0.275	0.0	.25	110.	30.6-120	L714150-01	WG736322
2,4,6-Trichlorophenol	mg/l	0.241	0.0	.25	96.0	19.1-114	L714150-01	WG736322
2,4-Dinitrotoluene	mg/l	0.285	0.0	.25	110.	16.2-135	L714150-01	WG736322
2-Methylphenol	mg/l	0.216	0.0	.25	86.0	10-133	L714150-01	WG736322
3&4-Methyl Phenol	mg/l	0.278	0.0401	.25	95.0	17.4-100	L714150-01	WG736322
Hexachloro-1,3-butadiene	mg/l	0.173	0.0	.25	69.0	15.7-109	L714150-01	WG736322
Hexachlorobenzene	mg/l	0.213	0.0	.25	85.0	31.9-135	L714150-01	WG736322
Hexachloroethane	mg/l	0.213	0.0	.25	85.0	10.4-105	L714150-01	WG736322
Nitrobenzene	mg/l	0.236	0.0	.25	94.0	23.1-121	L714150-01	WG736322
Pentachlorophenol	mg/l	0.238	0.0	.25	95.0	10-108	L714150-01	WG736322
Pyridine	mg/l	0.128	0.0	.25	51.0	10-77.8	L714150-01	WG736322
2,4,6-Tribromophenol					88.30	11.2-130		WG736322
2-Fluorobiphenyl					90.20	29.5-131		WG736322
2-Fluorophenol					65.70	10-77.9		WG736322
Nitrobenzene-d5					103.0	21.8-123		WG736322
Phenol-d5					59.10	5-70.1		WG736322
p-Terphenyl-d14					91.50	29.3-137		WG736322
1,2,4-Trichlorobenzene	mg/kg	0.238	0.0	.333	71.0	36.5-114	L714071-02	WG736532
2,4,6-Trichlorophenol	mg/kg	0.312	0.0	.333	94.0	33.8-133	L714071-02	WG736532
2,4-Dichlorophenol	mg/kg	0.292	0.0	.333	88.0	34.8-134	L714071-02	WG736532
2,4-Dimethylphenol	mg/kg	0.325	0.0	.333	98.0	12.3-149	L714071-02	WG736532
2,4-Dinitrophenol	mg/kg	0.310	0.0	.333	93.0	10-121	L714071-02	WG736532
2,4-Dinitrotoluene	mg/kg	0.331	0.0	.333	99.0	27.8-147	L714071-02	WG736532
2,6-Dinitrotoluene	mg/kg	0.320	0.0	.333	96.0	36.5-137	L714071-02	WG736532
2-Chloronaphthalene	mg/kg	0.280	0.0	.333	84.0	37.5-123	L714071-02	WG736532
2-Chlorophenol	mg/kg	0.243	0.0	.333	73.0	33.2-121	L714071-02	WG736532
2-Nitrophenol	mg/kg	0.329	0.0	.333	99.0	29.5-144	L714071-02	WG736532
3,3-Dichlorobenzidine	mg/kg	0.262	0.0	.333	78.0	10-129	L714071-02	WG736532
4,6-Dinitro-2-methylphenol	mg/kg	0.365	0.0	.333	110.	10-144	L714071-02	WG736532
4-Bromophenyl-phenylether	mg/kg	0.291	0.0	.333	87.0	39-130	L714071-02	WG736532
4-Chloro-3-methylphenol	mg/kg	0.352	0.0	.333	110.	27-154	L714071-02	WG736532
4-Chlorophenyl-phenylether	mg/kg	0.275	0.0	.333	82.0	37.9-123	L714071-02	WG736532
4-Nitrophenol	mg/kg	0.280	0.0	.333	84.0	20-133	L714071-02	WG736532

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L714612

August 13, 2014

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Acenaphthene	mg/kg	0.279	0.0	.333	84.0	32.2-134	L714071-02	WG736532
Acenaphthylene	mg/kg	0.260	0.0	.333	78.0	38.7-129	L714071-02	WG736532
Anthracene	mg/kg	0.282	0.0	.333	85.0	32.3-137	L714071-02	WG736532
Benzidine	mg/kg	0.0243	0.0	.333	7.30	0-49.9	L714071-02	WG736532
Benzo(a)anthracene	mg/kg	0.288	0.0	.333	86.0	33.3-124	L714071-02	WG736532
Benzo(a)pyrene	mg/kg	0.252	0.0	.333	76.0	28.2-128	L714071-02	WG736532
Benzo(b)fluoranthene	mg/kg	0.266	0.0	.333	80.0	23.3-133	L714071-02	WG736532
Benzo(g,h,i)perylene	mg/kg	0.285	0.0	.333	86.0	10-127	L714071-02	WG736532
Benzo(k)fluoranthene	mg/kg	0.267	0.0	.333	80.0	31-129	L714071-02	WG736532
Benzylbutyl phthalate	mg/kg	0.320	0.0	.333	96.0	33.4-128	L714071-02	WG736532
Bis(2-chlorethoxy)methane	mg/kg	0.284	0.0	.333	85.0	35-132	L714071-02	WG736532
Bis(2-chloroethyl)ether	mg/kg	0.230	0.0	.333	69.0	28.8-128	L714071-02	WG736532
Bis(2-chloroisopropyl)ether	mg/kg	0.238	0.0	.333	71.0	31.8-118	L714071-02	WG736532
Bis(2-ethylhexyl)phthalate	mg/kg	0.309	0.0103	.333	90.0	21.8-141	L714071-02	WG736532
Chrysene	mg/kg	0.291	0.0	.333	88.0	36.3-129	L714071-02	WG736532
Di-n-butyl phthalate	mg/kg	0.284	0.00840	.333	83.0	32.2-133	L714071-02	WG736532
Di-n-octyl phthalate	mg/kg	0.321	0.0	.333	96.0	28.5-128	L714071-02	WG736532
Dibenz(a,h)anthracene	mg/kg	0.280	0.0	.333	84.0	10.5-128	L714071-02	WG736532
Diethyl phthalate	mg/kg	0.283	0.0	.333	85.0	39.4-136	L714071-02	WG736532
Dimethyl phthalate	mg/kg	0.290	0.0	.333	87.0	35.8-137	L714071-02	WG736532
Fluoranthene	mg/kg	0.274	0.0	.333	82.0	27.9-138	L714071-02	WG736532
Fluorene	mg/kg	0.291	0.0	.333	87.0	34-133	L714071-02	WG736532
Hexachloro-1,3-butadiene	mg/kg	0.242	0.0	.333	73.0	36.5-125	L714071-02	WG736532
Hexachlorobenzene	mg/kg	0.279	0.0	.333	84.0	34.4-116	L714071-02	WG736532
Hexachlorocyclopentadiene	mg/kg	0.0961	0.0	.333	29.0	10-124	L714071-02	WG736532
Hexachloroethane	mg/kg	0.238	0.0	.333	71.0	11.3-143	L714071-02	WG736532
Indeno(1,2,3-cd)pyrene	mg/kg	0.286	0.0	.333	86.0	10-128	L714071-02	WG736532
Isophorone	mg/kg	0.332	0.0	.333	100.	25.7-116	L714071-02	WG736532
n-Nitrosodi-n-propylamine	mg/kg	0.287	0.0	.333	86.0	33-134	L714071-02	WG736532
n-Nitrosodimethylamine	mg/kg	0.226	0.0	.333	68.0	19.2-127	L714071-02	WG736532
n-Nitrosodiphenylamine	mg/kg	0.282	0.0	.333	85.0	26.8-133	L714071-02	WG736532
Naphthalene	mg/kg	0.251	0.0	.333	75.0	36.4-121	L714071-02	WG736532
Nitrobenzene	mg/kg	0.295	0.0	.333	89.0	30.9-134	L714071-02	WG736532
Pentachlorophenol	mg/kg	0.324	0.0	.333	97.0	10-139	L714071-02	WG736532
Phenanthrene	mg/kg	0.285	0.0	.333	86.0	30.8-137	L714071-02	WG736532
Phenol	mg/kg	0.254	0.0	.333	76.0	25.1-130	L714071-02	WG736532
Pyrene	mg/kg	0.288	0.0	.333	86.0	24.1-130	L714071-02	WG736532
2,4,6-Tribromophenol					109.0	21.6-142		WG736532
2-Fluorobiphenyl					79.10	34.9-129		WG736532
2-Fluorophenol					67.50	21.1-116		WG736532
Nitrobenzene-d5					88.20	21.9-129		WG736532
Phenol-d5					73.90	26.3-121		WG736532
p-Terphenyl-d14					71.60	21.5-128		WG736532

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Mercury	mg/kg	0.564	0.589	87.1	80-120	4.00	20	L714612-02	WG736335
Arsenic	mg/l	9.17	9.17	102.	75-125	0.0	20	L714494-01	WG736443
Barium	mg/l	9.31	9.27	103.	75-125	0.0	20	L714494-01	WG736443
Cadmium	mg/l	9.22	9.17	102.	75-125	1.00	20	L714494-01	WG736443
Chromium	mg/l	9.39	9.34	104.	75-125	1.00	20	L714494-01	WG736443
Lead	mg/l	9.17	9.17	102.	75-125	0.0	20	L714494-01	WG736443
Selenium	mg/l	9.35	9.34	103.	75-125	0.0	20	L714494-01	WG736443
Silver	mg/l	9.03	8.99	100.	75-125	0.0	20	L714494-01	WG736443

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L714612

August 13, 2014

Analyte	Units	MSD	Matrix Spike Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,1-Dichloroethene	mg/l	1.23	1.19	98.8	51.1-140	3.68	20.2	L714273-01	WG736524
1,2-Dichloroethane	mg/l	1.20	1.10	95.8	60-126	8.03	20	L714273-01	WG736524
2-Butanone (MEK)	mg/l	5.36	4.99	85.1	22.4-138	7.29	27	L714273-01	WG736524
Benzene	mg/l	1.35	1.27	108.	54.3-133	6.42	20	L714273-01	WG736524
Carbon tetrachloride	mg/l	1.31	1.26	104.	55.7-134	3.71	20	L714273-01	WG736524
Chlorobenzene	mg/l	1.31	1.19	105.	67-125	9.37	20.3	L714273-01	WG736524
Chloroform	mg/l	1.24	1.17	99.1	63-129	5.67	20	L714273-01	WG736524
Tetrachloroethene	mg/l	1.29	1.19	103.	53-139	7.75	20	L714273-01	WG736524
Trichloroethene	mg/l	1.31	1.22	105.	44.1-149	7.21	20	L714273-01	WG736524
Vinyl chloride	mg/l	1.40	1.36	112.	47.8-137	2.70	20	L714273-01	WG736524
4-Bromofluorobenzene				112.0	71-126				WG736524
Dibromofluoromethane				100.0	78.3-121				WG736524
Toluene-d8				102.0	88.5-111				WG736524
a,a,a-Trifluorotoluene				107.0	85-114				WG736524
Mercury	mg/l	0.0294	0.0285	98.6	80-120	3.00	20	L713081-11	WG736431
Arsenic	mg/kg	108.	101.	104.	75-125	6.00	20	L714612-02	WG736661
Barium	mg/kg	309.	295.	101.	75-125	5.00	20	L714612-02	WG736661
Cadmium	mg/kg	105.	98.4	104.	75-125	6.00	20	L714612-02	WG736661
Chromium	mg/kg	123.	117.	106.	75-125	5.00	20	L714612-02	WG736661
Lead	mg/kg	141.	131.	102.	75-125	7.00	20	L714612-02	WG736661
Selenium	mg/kg	105.	98.4	104.	75-125	6.00	20	L714612-02	WG736661
Silver	mg/kg	103.	98.4	103.	75-125	5.00	20	L714612-02	WG736661
Arsenic	mg/kg	102.	100.	98.7	75-125	2.00	20	L714612-09	WG736743
Barium	mg/kg	204.	255.	67.0*	75-125	22.0*	20	L714612-09	WG736743
Cadmium	mg/kg	95.3	92.5	95.1	75-125	3.00	20	L714612-09	WG736743
Chromium	mg/kg	108.	107.	96.3	75-125	1.00	20	L714612-09	WG736743
Lead	mg/kg	118.	125.	91.7	75-125	6.00	20	L714612-09	WG736743
Selenium	mg/kg	101.	98.0	102.	75-125	3.00	20	L714612-09	WG736743
Silver	mg/kg	94.3	91.7	94.4	75-125	3.00	20	L714612-09	WG736743
1,4-Dichlorobenzene	mg/l	0.178	0.194	71.1	14-104	8.54	36.4	L714150-01	WG736322
2,4,5-Trichlorophenol	mg/l	0.251	0.275	100.	30.6-120	9.14	33.8	L714150-01	WG736322
2,4,6-Trichlorophenol	mg/l	0.218	0.241	87.2	19.1-114	10.1	29.9	L714150-01	WG736322
2,4-Dinitrotoluene	mg/l	0.267	0.285	107.	16.2-135	6.28	20.6	L714150-01	WG736322
2-Methylphenol	mg/l	0.198	0.216	79.0	10-133	8.75	40	L714150-01	WG736322
3&4-Methyl Phenol	mg/l	0.244	0.278	81.5	17.4-100	13.2	27.7	L714150-01	WG736322
Hexachloro-1,3-butadiene	mg/l	0.168	0.173	67.1	15.7-109	2.97	37.6	L714150-01	WG736322
Hexachlorobenzene	mg/l	0.208	0.213	83.3	31.9-135	2.17	20	L714150-01	WG736322
Hexachloroethane	mg/l	0.204	0.213	81.7	10.4-105	4.07	40	L714150-01	WG736322
Nitrobenzene	mg/l	0.226	0.236	90.5	23.1-121	4.33	29	L714150-01	WG736322
Pentachlorophenol	mg/l	0.216	0.238	86.6	10-108	9.33	40	L714150-01	WG736322
Pyridine	mg/l	0.114	0.128	45.6	10-77.8	11.6	38.8	L714150-01	WG736322
2,4,6-Tribromophenol				84.60	11.2-130				WG736322
2-Fluorobiphenyl				88.40	29.5-131				WG736322
2-Fluorophenol				51.50	10-77.9				WG736322
Nitrobenzene-d5				96.40	21.8-123				WG736322
Phenol-d5				43.00	5-70.1				WG736322
p-Terphenyl-d14				85.20	29.3-137				WG736322
1,2,4-Trichlorobenzene	mg/kg	0.232	0.238	69.6	36.5-114	2.59	28.4	L714071-02	WG736532
2,4,6-Trichlorophenol	mg/kg	0.297	0.312	89.2	33.8-133	4.96	28.1	L714071-02	WG736532

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L714612

August 13, 2014

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
2,4-Dichlorophenol	mg/kg	0.278	0.292	83.5	34.8-134	4.76	27.3	L714071-02	WG736532
2,4-Dimethylphenol	mg/kg	0.323	0.325	97.0	12.3-149	0.660	32.3	L714071-02	WG736532
2,4-Dinitrophenol	mg/kg	0.286	0.310	85.9	10-121	7.91	39.4	L714071-02	WG736532
2,4-Dinitrotoluene	mg/kg	0.316	0.331	94.9	27.8-147	4.46	29.7	L714071-02	WG736532
2,6-Dinitrotoluene	mg/kg	0.308	0.320	92.5	36.5-137	3.64	29.7	L714071-02	WG736532
2-Chloronaphthalene	mg/kg	0.280	0.280	84.2	37.5-123	0.0100	26.5	L714071-02	WG736532
2-Chlorophenol	mg/kg	0.250	0.243	75.1	33.2-121	2.88	29.3	L714071-02	WG736532
2-Nitrophenol	mg/kg	0.316	0.329	94.8	29.5-144	3.99	29.9	L714071-02	WG736532
3,3-Dichlorobenzidine	mg/kg	0.231	0.262	69.3	10-129	12.5	40	L714071-02	WG736532
4,6-Dinitro-2-methylphenol	mg/kg	0.328	0.365	98.5	10-144	10.6	32.7	L714071-02	WG736532
4-Bromophenyl-phenylether	mg/kg	0.276	0.291	82.9	39-130	5.22	26	L714071-02	WG736532
4-Chloro-3-methylphenol	mg/kg	0.345	0.352	104.	27-154	1.95	26.6	L714071-02	WG736532
4-Chlorophenyl-phenylether	mg/kg	0.268	0.275	80.5	37.9-123	2.45	25.9	L714071-02	WG736532
4-Nitrophenol	mg/kg	0.286	0.280	85.9	20-133	2.25	30.2	L714071-02	WG736532
Acenaphthene	mg/kg	0.267	0.279	80.1	32.2-134	4.46	27.3	L714071-02	WG736532
Acenaphthylene	mg/kg	0.250	0.260	75.2	38.7-129	3.64	25.9	L714071-02	WG736532
Anthracene	mg/kg	0.271	0.282	81.4	32.3-137	4.08	28.4	L714071-02	WG736532
Benzidine	mg/kg	0.0229	0.0243	6.88	0-49.9	6.10	40	L714071-02	WG736532
Benzo(a)anthracene	mg/kg	0.279	0.288	83.8	33.3-124	3.07	29	L714071-02	WG736532
Benzo(a)pyrene	mg/kg	0.247	0.252	74.2	28.2-128	1.83	28.4	L714071-02	WG736532
Benzo(b)fluoranthene	mg/kg	0.264	0.266	79.3	23.3-133	0.730	30.3	L714071-02	WG736532
Benzo(g,h,i)perylene	mg/kg	0.283	0.285	85.0	10-127	0.590	31.9	L714071-02	WG736532
Benzo(k)fluoranthene	mg/kg	0.262	0.267	78.7	31-129	1.83	26.7	L714071-02	WG736532
Benzylbutyl phthalate	mg/kg	0.317	0.320	95.2	33.4-128	0.810	28.5	L714071-02	WG736532
Bis(2-chlorethoxy)methane	mg/kg	0.267	0.284	80.2	35-132	6.06	26.1	L714071-02	WG736532
Bis(2-chloroethyl)ether	mg/kg	0.229	0.230	68.7	28.8-128	0.500	33.6	L714071-02	WG736532
Bis(2-chloroisopropyl)ether	mg/kg	0.235	0.238	70.5	31.8-118	1.28	31.7	L714071-02	WG736532
Bis(2-ethylhexyl)phthalate	mg/kg	0.298	0.309	86.4	21.8-141	3.80	35.2	L714071-02	WG736532
Chrysene	mg/kg	0.289	0.291	86.9	36.3-129	0.710	28	L714071-02	WG736532
Di-n-butyl phthalate	mg/kg	0.289	0.284	84.3	32.2-133	1.92	25.9	L714071-02	WG736532
Di-n-octyl phthalate	mg/kg	0.318	0.321	95.6	28.5-128	0.750	32.5	L714071-02	WG736532
Dibenz(a,h)anthracene	mg/kg	0.286	0.280	86.0	10.5-128	2.21	29.5	L714071-02	WG736532
Diethyl phthalate	mg/kg	0.278	0.283	83.4	39.4-136	1.85	25.5	L714071-02	WG736532
Dimethyl phthalate	mg/kg	0.280	0.290	84.1	35.8-137	3.40	25.4	L714071-02	WG736532
Fluoranthene	mg/kg	0.269	0.274	80.8	27.9-138	1.95	26.9	L714071-02	WG736532
Fluorene	mg/kg	0.284	0.291	85.2	34-133	2.57	27.1	L714071-02	WG736532
Hexachloro-1,3-butadiene	mg/kg	0.239	0.242	71.8	36.5-125	1.35	29.7	L714071-02	WG736532
Hexachlorobenzene	mg/kg	0.264	0.279	79.3	34.4-116	5.43	25.4	L714071-02	WG736532
Hexachlorocyclopentadiene	mg/kg	0.101	0.0961	30.5	10-124	5.47	37.5	L714071-02	WG736532
Hexachloroethane	mg/kg	0.239	0.238	71.8	11.3-143	0.490	31.9	L714071-02	WG736532
Indeno(1,2,3-cd)pyrene	mg/kg	0.284	0.286	85.2	10-128	0.670	31.5	L714071-02	WG736532
Isophorone	mg/kg	0.323	0.332	97.1	25.7-116	2.71	27.7	L714071-02	WG736532
n-Nitrosodi-n-propylamine	mg/kg	0.298	0.287	89.5	33-134	3.83	28.2	L714071-02	WG736532
n-Nitrosodimethylamine	mg/kg	0.222	0.226	66.7	19.2-127	1.79	32	L714071-02	WG736532
n-Nitrosodiphenylamine	mg/kg	0.276	0.282	82.9	26.8-133	2.20	25.9	L714071-02	WG736532
Naphthalene	mg/kg	0.239	0.251	71.8	36.4-121	4.96	27.2	L714071-02	WG736532
Nitrobenzene	mg/kg	0.286	0.295	85.9	30.9-134	3.13	27.8	L714071-02	WG736532
Pentachlorophenol	mg/kg	0.310	0.324	93.2	10-139	4.33	28.3	L714071-02	WG736532
Phenanthrene	mg/kg	0.265	0.285	79.6	30.8-137	7.39	26.5	L714071-02	WG736532
Phenol	mg/kg	0.251	0.254	75.4	25.1-130	1.28	29.6	L714071-02	WG736532
Pyrene	mg/kg	0.285	0.288	85.7	24.1-130	0.780	29.9	L714071-02	WG736532
2,4,6-Tribromophenol				105.0	21.6-142				WG736532
2-Fluorobiphenyl				76.40	34.9-129				WG736532
2-Fluorophenol				67.80	21.1-116				WG736532
Nitrobenzene-d5				83.60	21.9-129				WG736532
Phenol-d5				73.30	26.3-121				WG736532
p-Terphenyl-d14				70.40	21.5-128				WG736532

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L714612

August 13, 2014

Post Spike

Serial Dilution

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L714612

August 13, 2014

Batch number /Run number / Sample number cross reference

WG736335: R2974054: L714612-02 03 04 05 06 07 09 11 13
WG736443: R2974086: L714612-08 10 12 15
WG736524: R2974347: L714612-08 10 12 15
WG736294: R2974420: L714612-08 10 12 15
WG736295: R2974422: L714612-08 10 12 15
WG736431: R2974591: L714612-08 10 12 15
WG736458: R2974867: L714612-09 11 13
WG736457: R2974868: L714612-02 03 04 05 06 07
WG736531: R2974931: L714612-02 03 04 05 06 08 10 12 13 15
WG736558: R2974932: L714612-02 03 04 05 06 08 10 12 13 15
WG736661: R2975028: L714612-02 03 04 05 06 07 11 13
WG736743: R2975109: L714612-09
WG736679: R2975171: L714612-08
WG736322: R2975488: L714612-08 10 12 15
WG736532: R2975494 R2975648: L714612-02 03 04 05 06 07 09 11 13 14

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L714612

August 13, 2014

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 11, 2014

Dan Frank
Ahtna Engineering Services LLC
305 34th Avenue
Fairbanks, AK 99701

Re: Analytical Data for Project 20275.002.05
Laboratory Reference No. 1408-059

Dear Dan:

Enclosed are the analytical results and associated quality control data for samples submitted on August 8, 2014.

CS Laboratory Approval Number: UST-039

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

Case Narrative

Samples were collected on July 29, August 5, 6, and 7, 2014 and received by the laboratory on August 8, 2014. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Volatiles EPA 8260C Analysis

The samples were received in pre-weighed 4 ounce jars preserved with 25 millileters of Methanol.

GRO AK101 Analysis Analysis

The samples were received in pre-weighed 4 ounce jars preserved with 25 millileters of Methanol.

Soil samples were not field extracted with methanol containing surrogate as per Method AK 101 requirements. Addition of surrogate standard directly to the sample container was not possible due to potential interferences to subsequent Method 8260C analysis. Surrogate was therefore added to an aliquot of the sample prior to analysis.

Please note that any other QA/QC issues associated with these extractions and analyses will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

Analyst's Signature

Stacey Duran, GC/MS Volatiles Chemist

8-12-14
Date

Analyst's Signature

Eileen Merk, Gas/BTEX Chemist

8-12-14
Date

Analyst's Signature

Zeus Thornton, GC Semivolatiles Chemist

8-13-14
Date

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-EX01-SO**					
Laboratory ID:	08-059-01					
Dichlorodifluoromethane	ND	0.041	EPA 8260C	8-5-14	8-8-14	
Chloromethane	ND	0.17	EPA 8260C	8-5-14	8-8-14	
Vinyl Chloride	ND	0.027	EPA 8260C	8-5-14	8-8-14	
Bromomethane	ND	0.027	EPA 8260C	8-5-14	8-8-14	
Chloroethane	ND	0.14	EPA 8260C	8-5-14	8-8-14	
Trichlorofluoromethane	ND	0.027	EPA 8260C	8-5-14	8-8-14	
1,1-Dichloroethene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
Acetone	ND	0.14	EPA 8260C	8-5-14	8-8-14	
Iodomethane	ND	0.14	EPA 8260C	8-5-14	8-8-14	
Carbon Disulfide	ND	0.027	EPA 8260C	8-5-14	8-8-14	
Methylene Chloride	ND	0.14	EPA 8260C	8-5-14	8-8-14	
(trans) 1,2-Dichloroethene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
Methyl t-Butyl Ether	ND	0.027	EPA 8260C	8-5-14	8-8-14	
1,1-Dichloroethane	ND	0.027	EPA 8260C	8-5-14	8-8-14	
Vinyl Acetate	ND	0.14	EPA 8260C	8-5-14	8-8-14	
2,2-Dichloropropane	ND	0.027	EPA 8260C	8-5-14	8-8-14	
(cis) 1,2-Dichloroethene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
2-Butanone	ND	0.14	EPA 8260C	8-5-14	8-8-14	
Bromochloromethane	ND	0.027	EPA 8260C	8-5-14	8-8-14	
Chloroform	ND	0.027	EPA 8260C	8-5-14	8-8-14	
1,1,1-Trichloroethane	ND	0.0025	EPA 8260C/SIM	8-5-14	8-11-14	
Carbon Tetrachloride	ND	0.027	EPA 8260C	8-5-14	8-8-14	
1,1-Dichloropropene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
Benzene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
1,2-Dichloroethane	ND	0.027	EPA 8260C	8-5-14	8-8-14	
Trichloroethene	ND	0.0025	EPA 8260C/SIM	8-5-14	8-11-14	
1,2-Dichloropropane	ND	0.027	EPA 8260C	8-5-14	8-8-14	
Dibromomethane	ND	0.027	EPA 8260C	8-5-14	8-8-14	
Bromodichloromethane	ND	0.027	EPA 8260C	8-5-14	8-8-14	
2-Chloroethyl Vinyl Ether	ND	0.14	EPA 8260C	8-5-14	8-8-14	
(cis) 1,3-Dichloropropene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
Methyl Isobutyl Ketone	ND	0.14	EPA 8260C	8-5-14	8-8-14	
Toluene	ND	0.14	EPA 8260C	8-5-14	8-8-14	
(trans) 1,3-Dichloropropene	ND	0.027	EPA 8260C	8-5-14	8-8-14	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-EX01-SO**					
Laboratory ID:	08-059-01					
1,1,2-Trichloroethane	ND	0.027	EPA 8260C	8-5-14	8-8-14	
Tetrachloroethene	ND	0.0025	EPA 8260C/SIM	8-5-14	8-11-14	
1,3-Dichloropropane	ND	0.027	EPA 8260C	8-5-14	8-8-14	
2-Hexanone	ND	0.14	EPA 8260C	8-5-14	8-8-14	
Dibromochloromethane	ND	0.027	EPA 8260C	8-5-14	8-8-14	
1,2-Dibromoethane	ND	0.027	EPA 8260C	8-5-14	8-8-14	
Chlorobenzene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
1,1,1,2-Tetrachloroethane	ND	0.027	EPA 8260C	8-5-14	8-8-14	
Ethylbenzene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
m,p-Xylene	ND	0.055	EPA 8260C	8-5-14	8-8-14	
o-Xylene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
Styrene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
Bromoform	ND	0.027	EPA 8260C	8-5-14	8-8-14	
Isopropylbenzene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
Bromobenzene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
1,1,2,2-Tetrachloroethane	ND	0.027	EPA 8260C	8-5-14	8-8-14	
1,2,3-Trichloropropane	ND	0.027	EPA 8260C	8-5-14	8-8-14	
n-Propylbenzene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
2-Chlorotoluene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
4-Chlorotoluene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
1,3,5-Trimethylbenzene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
tert-Butylbenzene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
1,2,4-Trimethylbenzene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
sec-Butylbenzene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
1,3-Dichlorobenzene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
p-Isopropyltoluene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
1,4-Dichlorobenzene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
1,2-Dichlorobenzene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
n-Butylbenzene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
1,2-Dibromo-3-chloropropane	ND	0.14	EPA 8260C	8-5-14	8-8-14	
1,2,4-Trichlorobenzene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
Hexachlorobutadiene	ND	0.14	EPA 8260C	8-5-14	8-8-14	
Naphthalene	ND	0.14	EPA 8260C	8-5-14	8-8-14	
1,2,3-Trichlorobenzene	ND	0.027	EPA 8260C	8-5-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*109*	*65-129*				
Toluene-d8	*108*	*77-122*				
4-Bromofluorobenzene	*106*	*73-124*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-EX02-SO**					
Laboratory ID:	08-059-02					
Dichlorodifluoromethane	ND	0.053	EPA 8260C	8-6-14	8-8-14	
Chloromethane	ND	0.22	EPA 8260C	8-6-14	8-8-14	
Vinyl Chloride	ND	0.035	EPA 8260C	8-6-14	8-8-14	
Bromomethane	ND	0.035	EPA 8260C	8-6-14	8-8-14	
Chloroethane	ND	0.18	EPA 8260C	8-6-14	8-8-14	
Trichlorofluoromethane	ND	0.035	EPA 8260C	8-6-14	8-8-14	
1,1-Dichloroethene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
Acetone	ND	0.18	EPA 8260C	8-6-14	8-8-14	
Iodomethane	ND	0.18	EPA 8260C	8-6-14	8-8-14	
Carbon Disulfide	ND	0.035	EPA 8260C	8-6-14	8-8-14	
Methylene Chloride	ND	0.18	EPA 8260C	8-6-14	8-8-14	
(trans) 1,2-Dichloroethene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
Methyl t-Butyl Ether	ND	0.035	EPA 8260C	8-6-14	8-8-14	
1,1-Dichloroethane	ND	0.035	EPA 8260C	8-6-14	8-8-14	
Vinyl Acetate	ND	0.18	EPA 8260C	8-6-14	8-8-14	
2,2-Dichloropropane	ND	0.035	EPA 8260C	8-6-14	8-8-14	
(cis) 1,2-Dichloroethene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
2-Butanone	ND	0.18	EPA 8260C	8-6-14	8-8-14	
Bromochloromethane	ND	0.035	EPA 8260C	8-6-14	8-8-14	
Chloroform	ND	0.035	EPA 8260C	8-6-14	8-8-14	
1,1,1-Trichloroethane	ND	0.0025	EPA 8260C/SIM	8-6-14	8-11-14	
Carbon Tetrachloride	ND	0.035	EPA 8260C	8-6-14	8-8-14	
1,1-Dichloropropene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
Benzene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
1,2-Dichloroethane	ND	0.035	EPA 8260C	8-6-14	8-8-14	
Trichloroethene	0.0054	0.0025	EPA 8260C/SIM	8-6-14	8-11-14	
1,2-Dichloropropane	ND	0.035	EPA 8260C	8-6-14	8-8-14	
Dibromomethane	ND	0.035	EPA 8260C	8-6-14	8-8-14	
Bromodichloromethane	ND	0.035	EPA 8260C	8-6-14	8-8-14	
2-Chloroethyl Vinyl Ether	ND	0.18	EPA 8260C	8-6-14	8-8-14	
(cis) 1,3-Dichloropropene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
Methyl Isobutyl Ketone	ND	0.18	EPA 8260C	8-6-14	8-8-14	
Toluene	ND	0.18	EPA 8260C	8-6-14	8-8-14	
(trans) 1,3-Dichloropropene	ND	0.035	EPA 8260C	8-6-14	8-8-14	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-EX02-SO**					
Laboratory ID:	08-059-02					
1,1,2-Trichloroethane	ND	0.035	EPA 8260C	8-6-14	8-8-14	
Tetrachloroethene	0.0034	0.0025	EPA 8260C/SIM	8-6-14	8-11-14	
1,3-Dichloropropane	ND	0.035	EPA 8260C	8-6-14	8-8-14	
2-Hexanone	ND	0.18	EPA 8260C	8-6-14	8-8-14	
Dibromochloromethane	ND	0.035	EPA 8260C	8-6-14	8-8-14	
1,2-Dibromoethane	ND	0.035	EPA 8260C	8-6-14	8-8-14	
Chlorobenzene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
1,1,1,2-Tetrachloroethane	ND	0.035	EPA 8260C	8-6-14	8-8-14	
Ethylbenzene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
m,p-Xylene	ND	0.070	EPA 8260C	8-6-14	8-8-14	
o-Xylene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
Styrene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
Bromoform	ND	0.035	EPA 8260C	8-6-14	8-8-14	
Isopropylbenzene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
Bromobenzene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
1,1,2,2-Tetrachloroethane	ND	0.035	EPA 8260C	8-6-14	8-8-14	
1,2,3-Trichloropropane	ND	0.035	EPA 8260C	8-6-14	8-8-14	
n-Propylbenzene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
2-Chlorotoluene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
4-Chlorotoluene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
1,3,5-Trimethylbenzene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
tert-Butylbenzene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
1,2,4-Trimethylbenzene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
sec-Butylbenzene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
1,3-Dichlorobenzene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
p-Isopropyltoluene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
1,4-Dichlorobenzene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
1,2-Dichlorobenzene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
n-Butylbenzene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
1,2-Dibromo-3-chloropropane	ND	0.18	EPA 8260C	8-6-14	8-8-14	
1,2,4-Trichlorobenzene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
Hexachlorobutadiene	ND	0.18	EPA 8260C	8-6-14	8-8-14	
Naphthalene	ND	0.18	EPA 8260C	8-6-14	8-8-14	
1,2,3-Trichlorobenzene	ND	0.035	EPA 8260C	8-6-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*113*	*65-129*				
Toluene-d8	*115*	*77-122*				
4-Bromofluorobenzene	*106*	*73-124*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-EX03-SO**					
Laboratory ID:	08-059-03					
Dichlorodifluoromethane	ND	0.045	EPA 8260C	8-6-14	8-8-14	
Chloromethane	ND	0.19	EPA 8260C	8-6-14	8-8-14	
Vinyl Chloride	ND	0.030	EPA 8260C	8-6-14	8-8-14	
Bromomethane	ND	0.030	EPA 8260C	8-6-14	8-8-14	
Chloroethane	ND	0.15	EPA 8260C	8-6-14	8-8-14	
Trichlorofluoromethane	ND	0.030	EPA 8260C	8-6-14	8-8-14	
1,1-Dichloroethene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
Acetone	ND	0.15	EPA 8260C	8-6-14	8-8-14	
Iodomethane	ND	0.15	EPA 8260C	8-6-14	8-8-14	
Carbon Disulfide	ND	0.030	EPA 8260C	8-6-14	8-8-14	
Methylene Chloride	ND	0.15	EPA 8260C	8-6-14	8-8-14	
(trans) 1,2-Dichloroethene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
Methyl t-Butyl Ether	ND	0.030	EPA 8260C	8-6-14	8-8-14	
1,1-Dichloroethane	ND	0.030	EPA 8260C	8-6-14	8-8-14	
Vinyl Acetate	ND	0.15	EPA 8260C	8-6-14	8-8-14	
2,2-Dichloropropane	ND	0.030	EPA 8260C	8-6-14	8-8-14	
(cis) 1,2-Dichloroethene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
2-Butanone	ND	0.15	EPA 8260C	8-6-14	8-8-14	
Bromochloromethane	ND	0.030	EPA 8260C	8-6-14	8-8-14	
Chloroform	ND	0.030	EPA 8260C	8-6-14	8-8-14	
1,1,1-Trichloroethane	ND	0.0025	EPA 8260C/SIM	8-6-14	8-11-14	
Carbon Tetrachloride	ND	0.030	EPA 8260C	8-6-14	8-8-14	
1,1-Dichloropropene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
Benzene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
1,2-Dichloroethane	ND	0.030	EPA 8260C	8-6-14	8-8-14	
Trichloroethene	0.0041	0.0025	EPA 8260C/SIM	8-6-14	8-11-14	
1,2-Dichloropropane	ND	0.030	EPA 8260C	8-6-14	8-8-14	
Dibromomethane	ND	0.030	EPA 8260C	8-6-14	8-8-14	
Bromodichloromethane	ND	0.030	EPA 8260C	8-6-14	8-8-14	
2-Chloroethyl Vinyl Ether	ND	0.15	EPA 8260C	8-6-14	8-8-14	
(cis) 1,3-Dichloropropene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
Methyl Isobutyl Ketone	ND	0.15	EPA 8260C	8-6-14	8-8-14	
Toluene	ND	0.15	EPA 8260C	8-6-14	8-8-14	
(trans) 1,3-Dichloropropene	ND	0.030	EPA 8260C	8-6-14	8-8-14	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-EX03-SO**					
Laboratory ID:	08-059-03					
1,1,2-Trichloroethane	ND	0.030	EPA 8260C	8-6-14	8-8-14	
Tetrachloroethene	ND	0.0025	EPA 8260C/SIM	8-6-14	8-11-14	
1,3-Dichloropropane	ND	0.030	EPA 8260C	8-6-14	8-8-14	
2-Hexanone	ND	0.15	EPA 8260C	8-6-14	8-8-14	
Dibromochloromethane	ND	0.030	EPA 8260C	8-6-14	8-8-14	
1,2-Dibromoethane	ND	0.030	EPA 8260C	8-6-14	8-8-14	
Chlorobenzene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
1,1,1,2-Tetrachloroethane	ND	0.030	EPA 8260C	8-6-14	8-8-14	
Ethylbenzene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
m,p-Xylene	ND	0.060	EPA 8260C	8-6-14	8-8-14	
o-Xylene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
Styrene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
Bromoform	ND	0.030	EPA 8260C	8-6-14	8-8-14	
Isopropylbenzene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
Bromobenzene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
1,1,2,2-Tetrachloroethane	ND	0.030	EPA 8260C	8-6-14	8-8-14	
1,2,3-Trichloropropane	ND	0.030	EPA 8260C	8-6-14	8-8-14	
n-Propylbenzene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
2-Chlorotoluene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
4-Chlorotoluene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
1,3,5-Trimethylbenzene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
tert-Butylbenzene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
1,2,4-Trimethylbenzene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
sec-Butylbenzene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
1,3-Dichlorobenzene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
p-Isopropyltoluene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
1,4-Dichlorobenzene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
1,2-Dichlorobenzene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
n-Butylbenzene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
1,2-Dibromo-3-chloropropane	ND	0.15	EPA 8260C	8-6-14	8-8-14	
1,2,4-Trichlorobenzene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
Hexachlorobutadiene	ND	0.15	EPA 8260C	8-6-14	8-8-14	
Naphthalene	ND	0.15	EPA 8260C	8-6-14	8-8-14	
1,2,3-Trichlorobenzene	ND	0.030	EPA 8260C	8-6-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*108*	*65-129*				
Toluene-d8	*108*	*77-122*				
4-Bromofluorobenzene	*106*	*73-124*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-EX04-SO**					
Laboratory ID:	08-059-04					
Dichlorodifluoromethane	ND	0.050	EPA 8260C	8-6-14	8-8-14	
Chloromethane	ND	0.21	EPA 8260C	8-6-14	8-8-14	
Vinyl Chloride	ND	0.034	EPA 8260C	8-6-14	8-8-14	
Bromomethane	ND	0.034	EPA 8260C	8-6-14	8-8-14	
Chloroethane	ND	0.17	EPA 8260C	8-6-14	8-8-14	
Trichlorofluoromethane	ND	0.034	EPA 8260C	8-6-14	8-8-14	
1,1-Dichloroethene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
Acetone	ND	0.17	EPA 8260C	8-6-14	8-8-14	
Iodomethane	ND	0.17	EPA 8260C	8-6-14	8-8-14	
Carbon Disulfide	ND	0.034	EPA 8260C	8-6-14	8-8-14	
Methylene Chloride	ND	0.17	EPA 8260C	8-6-14	8-8-14	
(trans) 1,2-Dichloroethene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
Methyl t-Butyl Ether	ND	0.034	EPA 8260C	8-6-14	8-8-14	
1,1-Dichloroethane	ND	0.034	EPA 8260C	8-6-14	8-8-14	
Vinyl Acetate	ND	0.17	EPA 8260C	8-6-14	8-8-14	
2,2-Dichloropropane	ND	0.034	EPA 8260C	8-6-14	8-8-14	
(cis) 1,2-Dichloroethene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
2-Butanone	ND	0.17	EPA 8260C	8-6-14	8-8-14	
Bromochloromethane	ND	0.034	EPA 8260C	8-6-14	8-8-14	
Chloroform	ND	0.034	EPA 8260C	8-6-14	8-8-14	
1,1,1-Trichloroethane	ND	0.0025	EPA 8260C/SIM	8-6-14	8-11-14	
Carbon Tetrachloride	ND	0.034	EPA 8260C	8-6-14	8-8-14	
1,1-Dichloropropene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
Benzene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
1,2-Dichloroethane	ND	0.034	EPA 8260C	8-6-14	8-8-14	
Trichloroethene	ND	0.0025	EPA 8260C/SIM	8-6-14	8-11-14	
1,2-Dichloropropane	ND	0.034	EPA 8260C	8-6-14	8-8-14	
Dibromomethane	ND	0.034	EPA 8260C	8-6-14	8-8-14	
Bromodichloromethane	ND	0.034	EPA 8260C	8-6-14	8-8-14	
2-Chloroethyl Vinyl Ether	ND	0.17	EPA 8260C	8-6-14	8-8-14	
(cis) 1,3-Dichloropropene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
Methyl Isobutyl Ketone	ND	0.17	EPA 8260C	8-6-14	8-8-14	
Toluene	ND	0.17	EPA 8260C	8-6-14	8-8-14	
(trans) 1,3-Dichloropropene	ND	0.034	EPA 8260C	8-6-14	8-8-14	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-EX04-SO**					
Laboratory ID:	08-059-04					
1,1,2-Trichloroethane	ND	0.034	EPA 8260C	8-6-14	8-8-14	
Tetrachloroethene	ND	0.0025	EPA 8260C/SIM	8-6-14	8-11-14	
1,3-Dichloropropane	ND	0.034	EPA 8260C	8-6-14	8-8-14	
2-Hexanone	ND	0.17	EPA 8260C	8-6-14	8-8-14	
Dibromochloromethane	ND	0.034	EPA 8260C	8-6-14	8-8-14	
1,2-Dibromoethane	ND	0.034	EPA 8260C	8-6-14	8-8-14	
Chlorobenzene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
1,1,1,2-Tetrachloroethane	ND	0.034	EPA 8260C	8-6-14	8-8-14	
Ethylbenzene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
m,p-Xylene	ND	0.067	EPA 8260C	8-6-14	8-8-14	
o-Xylene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
Styrene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
Bromoform	ND	0.034	EPA 8260C	8-6-14	8-8-14	
Isopropylbenzene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
Bromobenzene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
1,1,2,2-Tetrachloroethane	ND	0.034	EPA 8260C	8-6-14	8-8-14	
1,2,3-Trichloropropane	ND	0.034	EPA 8260C	8-6-14	8-8-14	
n-Propylbenzene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
2-Chlorotoluene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
4-Chlorotoluene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
1,3,5-Trimethylbenzene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
tert-Butylbenzene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
1,2,4-Trimethylbenzene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
sec-Butylbenzene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
1,3-Dichlorobenzene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
p-Isopropyltoluene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
1,4-Dichlorobenzene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
1,2-Dichlorobenzene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
n-Butylbenzene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
1,2-Dibromo-3-chloropropane	ND	0.17	EPA 8260C	8-6-14	8-8-14	
1,2,4-Trichlorobenzene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
Hexachlorobutadiene	ND	0.17	EPA 8260C	8-6-14	8-8-14	
Naphthalene	ND	0.17	EPA 8260C	8-6-14	8-8-14	
1,2,3-Trichlorobenzene	ND	0.034	EPA 8260C	8-6-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*105*	*65-129*				
Toluene-d8	*108*	*77-122*				
4-Bromofluorobenzene	*103*	*73-124*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-EX05-SO**					
Laboratory ID:	08-059-05					
Dichlorodifluoromethane	ND	0.069	EPA 8260C	8-6-14	8-8-14	
Chloromethane	ND	0.29	EPA 8260C	8-6-14	8-8-14	
Vinyl Chloride	ND	0.046	EPA 8260C	8-6-14	8-8-14	
Bromomethane	ND	0.046	EPA 8260C	8-6-14	8-8-14	
Chloroethane	ND	0.23	EPA 8260C	8-6-14	8-8-14	
Trichlorofluoromethane	ND	0.046	EPA 8260C	8-6-14	8-8-14	
1,1-Dichloroethene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
Acetone	ND	0.23	EPA 8260C	8-6-14	8-8-14	
Iodomethane	ND	0.23	EPA 8260C	8-6-14	8-8-14	
Carbon Disulfide	ND	0.046	EPA 8260C	8-6-14	8-8-14	
Methylene Chloride	ND	0.23	EPA 8260C	8-6-14	8-8-14	
(trans) 1,2-Dichloroethene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
Methyl t-Butyl Ether	ND	0.046	EPA 8260C	8-6-14	8-8-14	
1,1-Dichloroethane	ND	0.046	EPA 8260C	8-6-14	8-8-14	
Vinyl Acetate	ND	0.23	EPA 8260C	8-6-14	8-8-14	
2,2-Dichloropropane	ND	0.046	EPA 8260C	8-6-14	8-8-14	
(cis) 1,2-Dichloroethene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
2-Butanone	ND	0.23	EPA 8260C	8-6-14	8-8-14	
Bromochloromethane	ND	0.046	EPA 8260C	8-6-14	8-8-14	
Chloroform	ND	0.046	EPA 8260C	8-6-14	8-8-14	
1,1,1-Trichloroethane	ND	0.0025	EPA 8260C/SIM	8-6-14	8-11-14	
Carbon Tetrachloride	ND	0.046	EPA 8260C	8-6-14	8-8-14	
1,1-Dichloropropene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
Benzene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
1,2-Dichloroethane	ND	0.046	EPA 8260C	8-6-14	8-8-14	
Trichloroethene	ND	0.0025	EPA 8260C/SIM	8-6-14	8-11-14	
1,2-Dichloropropane	ND	0.046	EPA 8260C	8-6-14	8-8-14	
Dibromomethane	ND	0.046	EPA 8260C	8-6-14	8-8-14	
Bromodichloromethane	ND	0.046	EPA 8260C	8-6-14	8-8-14	
2-Chloroethyl Vinyl Ether	ND	0.23	EPA 8260C	8-6-14	8-8-14	
(cis) 1,3-Dichloropropene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
Methyl Isobutyl Ketone	ND	0.23	EPA 8260C	8-6-14	8-8-14	
Toluene	ND	0.23	EPA 8260C	8-6-14	8-8-14	
(trans) 1,3-Dichloropropene	ND	0.046	EPA 8260C	8-6-14	8-8-14	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-EX05-SO**					
Laboratory ID:	08-059-05					
1,1,2-Trichloroethane	ND	0.046	EPA 8260C	8-6-14	8-8-14	
Tetrachloroethene	ND	0.0025	EPA 8260C/SIM	8-6-14	8-11-14	
1,3-Dichloropropane	ND	0.046	EPA 8260C	8-6-14	8-8-14	
2-Hexanone	ND	0.23	EPA 8260C	8-6-14	8-8-14	
Dibromochloromethane	ND	0.046	EPA 8260C	8-6-14	8-8-14	
1,2-Dibromoethane	ND	0.046	EPA 8260C	8-6-14	8-8-14	
Chlorobenzene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
1,1,1,2-Tetrachloroethane	ND	0.046	EPA 8260C	8-6-14	8-8-14	
Ethylbenzene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
m,p-Xylene	ND	0.093	EPA 8260C	8-6-14	8-8-14	
o-Xylene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
Styrene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
Bromoform	ND	0.046	EPA 8260C	8-6-14	8-8-14	
Isopropylbenzene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
Bromobenzene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
1,1,2,2-Tetrachloroethane	ND	0.046	EPA 8260C	8-6-14	8-8-14	
1,2,3-Trichloropropane	ND	0.046	EPA 8260C	8-6-14	8-8-14	
n-Propylbenzene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
2-Chlorotoluene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
4-Chlorotoluene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
1,3,5-Trimethylbenzene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
tert-Butylbenzene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
1,2,4-Trimethylbenzene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
sec-Butylbenzene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
1,3-Dichlorobenzene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
p-Isopropyltoluene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
1,4-Dichlorobenzene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
1,2-Dichlorobenzene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
n-Butylbenzene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
1,2-Dibromo-3-chloropropane	ND	0.23	EPA 8260C	8-6-14	8-8-14	
1,2,4-Trichlorobenzene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
Hexachlorobutadiene	ND	0.23	EPA 8260C	8-6-14	8-8-14	
Naphthalene	ND	0.23	EPA 8260C	8-6-14	8-8-14	
1,2,3-Trichlorobenzene	ND	0.046	EPA 8260C	8-6-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*108*	*65-129*				
Toluene-d8	*109*	*77-122*				
4-Bromofluorobenzene	*103*	*73-124*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-EX06-SO**					
Laboratory ID:	08-059-06					
Dichlorodifluoromethane	ND	0.036	EPA 8260C	8-6-14	8-8-14	
Chloromethane	ND	0.15	EPA 8260C	8-6-14	8-8-14	
Vinyl Chloride	ND	0.024	EPA 8260C	8-6-14	8-8-14	
Bromomethane	ND	0.024	EPA 8260C	8-6-14	8-8-14	
Chloroethane	ND	0.12	EPA 8260C	8-6-14	8-8-14	
Trichlorofluoromethane	ND	0.024	EPA 8260C	8-6-14	8-8-14	
1,1-Dichloroethene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
Acetone	ND	0.12	EPA 8260C	8-6-14	8-8-14	
Iodomethane	ND	0.12	EPA 8260C	8-6-14	8-8-14	
Carbon Disulfide	ND	0.024	EPA 8260C	8-6-14	8-8-14	
Methylene Chloride	ND	0.12	EPA 8260C	8-6-14	8-8-14	
(trans) 1,2-Dichloroethene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
Methyl t-Butyl Ether	ND	0.024	EPA 8260C	8-6-14	8-8-14	
1,1-Dichloroethane	ND	0.024	EPA 8260C	8-6-14	8-8-14	
Vinyl Acetate	ND	0.12	EPA 8260C	8-6-14	8-8-14	
2,2-Dichloropropane	ND	0.024	EPA 8260C	8-6-14	8-8-14	
(cis) 1,2-Dichloroethene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
2-Butanone	ND	0.12	EPA 8260C	8-6-14	8-8-14	
Bromochloromethane	ND	0.024	EPA 8260C	8-6-14	8-8-14	
Chloroform	ND	0.024	EPA 8260C	8-6-14	8-8-14	
1,1,1-Trichloroethane	ND	0.0025	EPA 8260C/SIM	8-6-14	8-11-14	
Carbon Tetrachloride	ND	0.024	EPA 8260C	8-6-14	8-8-14	
1,1-Dichloropropene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
Benzene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
1,2-Dichloroethane	ND	0.024	EPA 8260C	8-6-14	8-8-14	
Trichloroethene	ND	0.0025	EPA 8260C/SIM	8-6-14	8-11-14	
1,2-Dichloropropane	ND	0.024	EPA 8260C	8-6-14	8-8-14	
Dibromomethane	ND	0.024	EPA 8260C	8-6-14	8-8-14	
Bromodichloromethane	ND	0.024	EPA 8260C	8-6-14	8-8-14	
2-Chloroethyl Vinyl Ether	ND	0.12	EPA 8260C	8-6-14	8-8-14	
(cis) 1,3-Dichloropropene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
Methyl Isobutyl Ketone	ND	0.12	EPA 8260C	8-6-14	8-8-14	
Toluene	ND	0.12	EPA 8260C	8-6-14	8-8-14	
(trans) 1,3-Dichloropropene	ND	0.024	EPA 8260C	8-6-14	8-8-14	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-EX06-SO**					
Laboratory ID:	08-059-06					
1,1,2-Trichloroethane	ND	0.024	EPA 8260C	8-6-14	8-8-14	
Tetrachloroethene	0.0055	0.0025	EPA 8260C/SIM	8-6-14	8-11-14	
1,3-Dichloropropane	ND	0.024	EPA 8260C	8-6-14	8-8-14	
2-Hexanone	ND	0.12	EPA 8260C	8-6-14	8-8-14	
Dibromochloromethane	ND	0.024	EPA 8260C	8-6-14	8-8-14	
1,2-Dibromoethane	ND	0.024	EPA 8260C	8-6-14	8-8-14	
Chlorobenzene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
1,1,1,2-Tetrachloroethane	ND	0.024	EPA 8260C	8-6-14	8-8-14	
Ethylbenzene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
m,p-Xylene	ND	0.048	EPA 8260C	8-6-14	8-8-14	
o-Xylene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
Styrene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
Bromoform	ND	0.024	EPA 8260C	8-6-14	8-8-14	
Isopropylbenzene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
Bromobenzene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
1,1,2,2-Tetrachloroethane	ND	0.024	EPA 8260C	8-6-14	8-8-14	
1,2,3-Trichloropropane	ND	0.024	EPA 8260C	8-6-14	8-8-14	
n-Propylbenzene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
2-Chlorotoluene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
4-Chlorotoluene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
1,3,5-Trimethylbenzene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
tert-Butylbenzene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
1,2,4-Trimethylbenzene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
sec-Butylbenzene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
1,3-Dichlorobenzene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
p-Isopropyltoluene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
1,4-Dichlorobenzene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
1,2-Dichlorobenzene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
n-Butylbenzene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
1,2-Dibromo-3-chloropropane	ND	0.12	EPA 8260C	8-6-14	8-8-14	
1,2,4-Trichlorobenzene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
Hexachlorobutadiene	ND	0.12	EPA 8260C	8-6-14	8-8-14	
Naphthalene	ND	0.12	EPA 8260C	8-6-14	8-8-14	
1,2,3-Trichlorobenzene	ND	0.024	EPA 8260C	8-6-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*110*	*65-129*				
Toluene-d8	*113*	*77-122*				
4-Bromofluorobenzene	*106*	*73-124*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 1 of 2

Matrix: Sludge
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-DR01-SL**					
Laboratory ID:	08-059-07					
Dichlorodifluoromethane	ND	0.16	EPA 8260C	8-5-14	8-8-14	
Chloromethane	ND	0.67	EPA 8260C	8-5-14	8-8-14	
Vinyl Chloride	ND	0.11	EPA 8260C	8-5-14	8-8-14	
Bromomethane	ND	0.11	EPA 8260C	8-5-14	8-8-14	
Chloroethane	ND	0.53	EPA 8260C	8-5-14	8-8-14	
Trichlorofluoromethane	ND	0.11	EPA 8260C	8-5-14	8-8-14	
1,1-Dichloroethene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
Acetone	0.70	0.53	EPA 8260C	8-5-14	8-8-14	Y
Iodomethane	ND	0.53	EPA 8260C	8-5-14	8-8-14	
Carbon Disulfide	ND	0.11	EPA 8260C	8-5-14	8-8-14	
Methylene Chloride	ND	0.53	EPA 8260C	8-5-14	8-8-14	
(trans) 1,2-Dichloroethene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
Methyl t-Butyl Ether	ND	0.11	EPA 8260C	8-5-14	8-8-14	
1,1-Dichloroethane	ND	0.11	EPA 8260C	8-5-14	8-8-14	
Vinyl Acetate	ND	0.53	EPA 8260C	8-5-14	8-8-14	
2,2-Dichloropropane	ND	0.11	EPA 8260C	8-5-14	8-8-14	
(cis) 1,2-Dichloroethene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
2-Butanone	ND	0.53	EPA 8260C	8-5-14	8-8-14	
Bromochloromethane	ND	0.11	EPA 8260C	8-5-14	8-8-14	
Chloroform	ND	0.11	EPA 8260C	8-5-14	8-8-14	
1,1,1-Trichloroethane	ND	0.11	EPA 8260C	8-5-14	8-8-14	
Carbon Tetrachloride	ND	0.11	EPA 8260C	8-5-14	8-8-14	
1,1-Dichloropropene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
Benzene	0.34	0.11	EPA 8260C	8-5-14	8-8-14	
1,2-Dichloroethane	ND	0.11	EPA 8260C	8-5-14	8-8-14	
Trichloroethene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
1,2-Dichloropropane	ND	0.11	EPA 8260C	8-5-14	8-8-14	
Dibromomethane	ND	0.11	EPA 8260C	8-5-14	8-8-14	
Bromodichloromethane	ND	0.11	EPA 8260C	8-5-14	8-8-14	
2-Chloroethyl Vinyl Ether	ND	0.53	EPA 8260C	8-5-14	8-8-14	
(cis) 1,3-Dichloropropene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
Methyl Isobutyl Ketone	ND	0.53	EPA 8260C	8-5-14	8-8-14	
Toluene	ND	0.53	EPA 8260C	8-5-14	8-8-14	
(trans) 1,3-Dichloropropene	ND	0.11	EPA 8260C	8-5-14	8-8-14	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-DR01-SL**					
Laboratory ID:	08-059-07					
1,1,2-Trichloroethane	ND	0.11	EPA 8260C	8-5-14	8-8-14	
Tetrachloroethene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
1,3-Dichloropropane	ND	0.11	EPA 8260C	8-5-14	8-8-14	
2-Hexanone	ND	0.53	EPA 8260C	8-5-14	8-8-14	
Dibromochloromethane	ND	0.11	EPA 8260C	8-5-14	8-8-14	
1,2-Dibromoethane	ND	0.11	EPA 8260C	8-5-14	8-8-14	
Chlorobenzene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
1,1,1,2-Tetrachloroethane	ND	0.11	EPA 8260C	8-5-14	8-8-14	
Ethylbenzene	0.99	0.11	EPA 8260C	8-5-14	8-8-14	
m,p-Xylene	4.3	0.21	EPA 8260C	8-5-14	8-8-14	
o-Xylene	2.0	0.11	EPA 8260C	8-5-14	8-8-14	
Styrene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
Bromoform	ND	0.11	EPA 8260C	8-5-14	8-8-14	
Isopropylbenzene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
Bromobenzene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
1,1,2,2-Tetrachloroethane	ND	0.11	EPA 8260C	8-5-14	8-8-14	
1,2,3-Trichloropropane	ND	0.11	EPA 8260C	8-5-14	8-8-14	
n-Propylbenzene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
2-Chlorotoluene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
4-Chlorotoluene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
1,3,5-Trimethylbenzene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
tert-Butylbenzene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
1,2,4-Trimethylbenzene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
sec-Butylbenzene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
1,3-Dichlorobenzene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
p-Isopropyltoluene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
1,4-Dichlorobenzene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
1,2-Dichlorobenzene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
n-Butylbenzene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
1,2-Dibromo-3-chloropropane	ND	0.53	EPA 8260C	8-5-14	8-8-14	
1,2,4-Trichlorobenzene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
Hexachlorobutadiene	ND	0.53	EPA 8260C	8-5-14	8-8-14	
Naphthalene	ND	0.53	EPA 8260C	8-5-14	8-8-14	
1,2,3-Trichlorobenzene	ND	0.11	EPA 8260C	8-5-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*82*	*65-129*				
Toluene-d8	*102*	*77-122*				
4-Bromofluorobenzene	*99*	*73-124*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-SP01-SO**					
Laboratory ID:	08-059-08					
Dichlorodifluoromethane	ND	0.050	EPA 8260C	8-7-14	8-8-14	
Chloromethane	ND	0.21	EPA 8260C	8-7-14	8-8-14	
Vinyl Chloride	ND	0.033	EPA 8260C	8-7-14	8-8-14	
Bromomethane	ND	0.033	EPA 8260C	8-7-14	8-8-14	
Chloroethane	ND	0.17	EPA 8260C	8-7-14	8-8-14	
Trichlorofluoromethane	ND	0.033	EPA 8260C	8-7-14	8-8-14	
1,1-Dichloroethene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
Acetone	0.19	0.17	EPA 8260C	8-7-14	8-8-14	Y
Iodomethane	ND	0.17	EPA 8260C	8-7-14	8-8-14	
Carbon Disulfide	ND	0.033	EPA 8260C	8-7-14	8-8-14	
Methylene Chloride	ND	0.17	EPA 8260C	8-7-14	8-8-14	
(trans) 1,2-Dichloroethene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
Methyl t-Butyl Ether	ND	0.033	EPA 8260C	8-7-14	8-8-14	
1,1-Dichloroethane	ND	0.033	EPA 8260C	8-7-14	8-8-14	
Vinyl Acetate	ND	0.17	EPA 8260C	8-7-14	8-8-14	
2,2-Dichloropropane	ND	0.033	EPA 8260C	8-7-14	8-8-14	
(cis) 1,2-Dichloroethene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
2-Butanone	ND	0.17	EPA 8260C	8-7-14	8-8-14	
Bromochloromethane	ND	0.033	EPA 8260C	8-7-14	8-8-14	
Chloroform	ND	0.033	EPA 8260C	8-7-14	8-8-14	
1,1,1-Trichloroethane	ND	0.0025	EPA 8260C/SIM	8-7-14	8-11-14	
Carbon Tetrachloride	ND	0.033	EPA 8260C	8-7-14	8-8-14	
1,1-Dichloropropene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
Benzene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
1,2-Dichloroethane	ND	0.033	EPA 8260C	8-7-14	8-8-14	
Trichloroethene	ND	0.0025	EPA 8260C/SIM	8-7-14	8-11-14	
1,2-Dichloropropane	ND	0.033	EPA 8260C	8-7-14	8-8-14	
Dibromomethane	ND	0.033	EPA 8260C	8-7-14	8-8-14	
Bromodichloromethane	ND	0.033	EPA 8260C	8-7-14	8-8-14	
2-Chloroethyl Vinyl Ether	ND	0.17	EPA 8260C	8-7-14	8-8-14	
(cis) 1,3-Dichloropropene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
Methyl Isobutyl Ketone	ND	0.17	EPA 8260C	8-7-14	8-8-14	
Toluene	ND	0.17	EPA 8260C	8-7-14	8-8-14	
(trans) 1,3-Dichloropropene	ND	0.033	EPA 8260C	8-7-14	8-8-14	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-SP01-SO**					
Laboratory ID:	08-059-08					
1,1,2-Trichloroethane	ND	0.033	EPA 8260C	8-7-14	8-8-14	
Tetrachloroethene	ND	0.0025	EPA 8260C/SIM	8-7-14	8-11-14	
1,3-Dichloropropane	ND	0.033	EPA 8260C	8-7-14	8-8-14	
2-Hexanone	ND	0.17	EPA 8260C	8-7-14	8-8-14	
Dibromochloromethane	ND	0.033	EPA 8260C	8-7-14	8-8-14	
1,2-Dibromoethane	ND	0.033	EPA 8260C	8-7-14	8-8-14	
Chlorobenzene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
1,1,1,2-Tetrachloroethane	ND	0.033	EPA 8260C	8-7-14	8-8-14	
Ethylbenzene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
m,p-Xylene	ND	0.066	EPA 8260C	8-7-14	8-8-14	
o-Xylene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
Styrene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
Bromoform	ND	0.033	EPA 8260C	8-7-14	8-8-14	
Isopropylbenzene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
Bromobenzene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
1,1,2,2-Tetrachloroethane	ND	0.033	EPA 8260C	8-7-14	8-8-14	
1,2,3-Trichloropropane	ND	0.033	EPA 8260C	8-7-14	8-8-14	
n-Propylbenzene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
2-Chlorotoluene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
4-Chlorotoluene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
1,3,5-Trimethylbenzene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
tert-Butylbenzene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
1,2,4-Trimethylbenzene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
sec-Butylbenzene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
1,3-Dichlorobenzene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
p-Isopropyltoluene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
1,4-Dichlorobenzene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
1,2-Dichlorobenzene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
n-Butylbenzene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
1,2-Dibromo-3-chloropropane	ND	0.17	EPA 8260C	8-7-14	8-8-14	
1,2,4-Trichlorobenzene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
Hexachlorobutadiene	ND	0.17	EPA 8260C	8-7-14	8-8-14	
Naphthalene	ND	0.17	EPA 8260C	8-7-14	8-8-14	
1,2,3-Trichlorobenzene	ND	0.033	EPA 8260C	8-7-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*84*	*65-129*				
Toluene-d8	*109*	*77-122*				
4-Bromofluorobenzene	*108*	*73-124*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-SP02-SO**					
Laboratory ID:	08-059-09					
Dichlorodifluoromethane	ND	0.048	EPA 8260C	8-7-14	8-8-14	
Chloromethane	ND	0.20	EPA 8260C	8-7-14	8-8-14	
Vinyl Chloride	ND	0.032	EPA 8260C	8-7-14	8-8-14	
Bromomethane	ND	0.032	EPA 8260C	8-7-14	8-8-14	
Chloroethane	ND	0.16	EPA 8260C	8-7-14	8-8-14	
Trichlorofluoromethane	ND	0.032	EPA 8260C	8-7-14	8-8-14	
1,1-Dichloroethene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
Acetone	ND	0.16	EPA 8260C	8-7-14	8-8-14	
Iodomethane	ND	0.16	EPA 8260C	8-7-14	8-8-14	
Carbon Disulfide	ND	0.032	EPA 8260C	8-7-14	8-8-14	
Methylene Chloride	ND	0.16	EPA 8260C	8-7-14	8-8-14	
(trans) 1,2-Dichloroethene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
Methyl t-Butyl Ether	ND	0.032	EPA 8260C	8-7-14	8-8-14	
1,1-Dichloroethane	ND	0.032	EPA 8260C	8-7-14	8-8-14	
Vinyl Acetate	ND	0.16	EPA 8260C	8-7-14	8-8-14	
2,2-Dichloropropane	ND	0.032	EPA 8260C	8-7-14	8-8-14	
(cis) 1,2-Dichloroethene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
2-Butanone	ND	0.16	EPA 8260C	8-7-14	8-8-14	
Bromochloromethane	ND	0.032	EPA 8260C	8-7-14	8-8-14	
Chloroform	ND	0.032	EPA 8260C	8-7-14	8-8-14	
1,1,1-Trichloroethane	ND	0.0025	EPA 8260C/SIM	8-7-14	8-11-14	
Carbon Tetrachloride	ND	0.032	EPA 8260C	8-7-14	8-8-14	
1,1-Dichloropropene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
Benzene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
1,2-Dichloroethane	ND	0.032	EPA 8260C	8-7-14	8-8-14	
Trichloroethene	ND	0.0025	EPA 8260C/SIM	8-7-14	8-11-14	
1,2-Dichloropropane	ND	0.032	EPA 8260C	8-7-14	8-8-14	
Dibromomethane	ND	0.032	EPA 8260C	8-7-14	8-8-14	
Bromodichloromethane	ND	0.032	EPA 8260C	8-7-14	8-8-14	
2-Chloroethyl Vinyl Ether	ND	0.16	EPA 8260C	8-7-14	8-8-14	
(cis) 1,3-Dichloropropene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
Methyl Isobutyl Ketone	ND	0.16	EPA 8260C	8-7-14	8-8-14	
Toluene	ND	0.16	EPA 8260C	8-7-14	8-8-14	
(trans) 1,3-Dichloropropene	ND	0.032	EPA 8260C	8-7-14	8-8-14	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-SP02-SO**					
Laboratory ID:	08-059-09					
1,1,2-Trichloroethane	ND	0.032	EPA 8260C	8-7-14	8-8-14	
Tetrachloroethene	ND	0.0025	EPA 8260C/SIM	8-7-14	8-11-14	
1,3-Dichloropropane	ND	0.032	EPA 8260C	8-7-14	8-8-14	
2-Hexanone	ND	0.16	EPA 8260C	8-7-14	8-8-14	
Dibromochloromethane	ND	0.032	EPA 8260C	8-7-14	8-8-14	
1,2-Dibromoethane	ND	0.032	EPA 8260C	8-7-14	8-8-14	
Chlorobenzene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
1,1,1,2-Tetrachloroethane	ND	0.032	EPA 8260C	8-7-14	8-8-14	
Ethylbenzene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
m,p-Xylene	ND	0.063	EPA 8260C	8-7-14	8-8-14	
o-Xylene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
Styrene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
Bromoform	ND	0.032	EPA 8260C	8-7-14	8-8-14	
Isopropylbenzene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
Bromobenzene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
1,1,2,2-Tetrachloroethane	ND	0.032	EPA 8260C	8-7-14	8-8-14	
1,2,3-Trichloropropane	ND	0.032	EPA 8260C	8-7-14	8-8-14	
n-Propylbenzene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
2-Chlorotoluene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
4-Chlorotoluene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
1,3,5-Trimethylbenzene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
tert-Butylbenzene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
1,2,4-Trimethylbenzene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
sec-Butylbenzene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
1,3-Dichlorobenzene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
p-Isopropyltoluene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
1,4-Dichlorobenzene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
1,2-Dichlorobenzene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
n-Butylbenzene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
1,2-Dibromo-3-chloropropane	ND	0.16	EPA 8260C	8-7-14	8-8-14	
1,2,4-Trichlorobenzene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
Hexachlorobutadiene	ND	0.16	EPA 8260C	8-7-14	8-8-14	
Naphthalene	ND	0.16	EPA 8260C	8-7-14	8-8-14	
1,2,3-Trichlorobenzene	ND	0.032	EPA 8260C	8-7-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*103*	*65-129*				
Toluene-d8	*106*	*77-122*				
4-Bromofluorobenzene	*104*	*73-124*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-WS01-SO**					
Laboratory ID:	08-059-10					
Dichlorodifluoromethane	ND	0.046	EPA 8260C	8-7-14	8-8-14	
Chloromethane	ND	0.19	EPA 8260C	8-7-14	8-8-14	
Vinyl Chloride	ND	0.030	EPA 8260C	8-7-14	8-8-14	
Bromomethane	ND	0.030	EPA 8260C	8-7-14	8-8-14	
Chloroethane	ND	0.15	EPA 8260C	8-7-14	8-8-14	
Trichlorofluoromethane	ND	0.030	EPA 8260C	8-7-14	8-8-14	
1,1-Dichloroethene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
Acetone	ND	0.15	EPA 8260C	8-7-14	8-8-14	
Iodomethane	ND	0.15	EPA 8260C	8-7-14	8-8-14	
Carbon Disulfide	ND	0.030	EPA 8260C	8-7-14	8-8-14	
Methylene Chloride	ND	0.15	EPA 8260C	8-7-14	8-8-14	
(trans) 1,2-Dichloroethene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
Methyl t-Butyl Ether	ND	0.030	EPA 8260C	8-7-14	8-8-14	
1,1-Dichloroethane	ND	0.030	EPA 8260C	8-7-14	8-8-14	
Vinyl Acetate	ND	0.15	EPA 8260C	8-7-14	8-8-14	
2,2-Dichloropropane	ND	0.030	EPA 8260C	8-7-14	8-8-14	
(cis) 1,2-Dichloroethene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
2-Butanone	ND	0.15	EPA 8260C	8-7-14	8-8-14	
Bromochloromethane	ND	0.030	EPA 8260C	8-7-14	8-8-14	
Chloroform	ND	0.030	EPA 8260C	8-7-14	8-8-14	
1,1,1-Trichloroethane	ND	0.0025	EPA 8260C/SIM	8-7-14	8-11-14	
Carbon Tetrachloride	ND	0.030	EPA 8260C	8-7-14	8-8-14	
1,1-Dichloropropene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
Benzene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
1,2-Dichloroethane	ND	0.030	EPA 8260C	8-7-14	8-8-14	
Trichloroethene	ND	0.0025	EPA 8260C/SIM	8-7-14	8-11-14	
1,2-Dichloropropane	ND	0.030	EPA 8260C	8-7-14	8-8-14	
Dibromomethane	ND	0.030	EPA 8260C	8-7-14	8-8-14	
Bromodichloromethane	ND	0.030	EPA 8260C	8-7-14	8-8-14	
2-Chloroethyl Vinyl Ether	ND	0.15	EPA 8260C	8-7-14	8-8-14	
(cis) 1,3-Dichloropropene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
Methyl Isobutyl Ketone	ND	0.15	EPA 8260C	8-7-14	8-8-14	
Toluene	ND	0.15	EPA 8260C	8-7-14	8-8-14	
(trans) 1,3-Dichloropropene	ND	0.030	EPA 8260C	8-7-14	8-8-14	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-WS01-SO**					
Laboratory ID:	08-059-10					
1,1,2-Trichloroethane	ND	0.030	EPA 8260C	8-7-14	8-8-14	
Tetrachloroethene	ND	0.0025	EPA 8260C/SIM	8-7-14	8-11-14	
1,3-Dichloropropane	ND	0.030	EPA 8260C	8-7-14	8-8-14	
2-Hexanone	ND	0.15	EPA 8260C	8-7-14	8-8-14	
Dibromochloromethane	ND	0.030	EPA 8260C	8-7-14	8-8-14	
1,2-Dibromoethane	ND	0.030	EPA 8260C	8-7-14	8-8-14	
Chlorobenzene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
1,1,1,2-Tetrachloroethane	ND	0.030	EPA 8260C	8-7-14	8-8-14	
Ethylbenzene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
m,p-Xylene	ND	0.061	EPA 8260C	8-7-14	8-8-14	
o-Xylene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
Styrene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
Bromoform	ND	0.030	EPA 8260C	8-7-14	8-8-14	
Isopropylbenzene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
Bromobenzene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
1,1,2,2-Tetrachloroethane	ND	0.030	EPA 8260C	8-7-14	8-8-14	
1,2,3-Trichloropropane	ND	0.030	EPA 8260C	8-7-14	8-8-14	
n-Propylbenzene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
2-Chlorotoluene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
4-Chlorotoluene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
1,3,5-Trimethylbenzene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
tert-Butylbenzene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
1,2,4-Trimethylbenzene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
sec-Butylbenzene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
1,3-Dichlorobenzene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
p-Isopropyltoluene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
1,4-Dichlorobenzene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
1,2-Dichlorobenzene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
n-Butylbenzene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
1,2-Dibromo-3-chloropropane	ND	0.15	EPA 8260C	8-7-14	8-8-14	
1,2,4-Trichlorobenzene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
Hexachlorobutadiene	ND	0.15	EPA 8260C	8-7-14	8-8-14	
Naphthalene	ND	0.15	EPA 8260C	8-7-14	8-8-14	
1,2,3-Trichlorobenzene	ND	0.030	EPA 8260C	8-7-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*103*	*65-129*				
Toluene-d8	*104*	*77-122*				
4-Bromofluorobenzene	*100*	*73-124*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 1 of 2

Matrix: Sludge
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-TA01-SL**					
Laboratory ID:	08-059-11					
Dichlorodifluoromethane	ND	0.038	EPA 8260C	8-6-14	8-8-14	
Chloromethane	ND	0.16	EPA 8260C	8-6-14	8-8-14	
Vinyl Chloride	ND	0.025	EPA 8260C	8-6-14	8-8-14	
Bromomethane	ND	0.025	EPA 8260C	8-6-14	8-8-14	
Chloroethane	ND	0.13	EPA 8260C	8-6-14	8-8-14	
Trichlorofluoromethane	ND	0.025	EPA 8260C	8-6-14	8-8-14	
1,1-Dichloroethene	ND	0.025	EPA 8260C	8-6-14	8-8-14	
Acetone	1.2	0.13	EPA 8260C	8-6-14	8-8-14	Y
Iodomethane	ND	0.13	EPA 8260C	8-6-14	8-8-14	
Carbon Disulfide	ND	0.025	EPA 8260C	8-6-14	8-8-14	
Methylene Chloride	ND	0.13	EPA 8260C	8-6-14	8-8-14	
(trans) 1,2-Dichloroethene	ND	0.025	EPA 8260C	8-6-14	8-8-14	
Methyl t-Butyl Ether	ND	0.025	EPA 8260C	8-6-14	8-8-14	
1,1-Dichloroethane	ND	0.025	EPA 8260C	8-6-14	8-8-14	
Vinyl Acetate	ND	0.13	EPA 8260C	8-6-14	8-8-14	
2,2-Dichloropropane	ND	0.025	EPA 8260C	8-6-14	8-8-14	
(cis) 1,2-Dichloroethene	0.028	0.025	EPA 8260C	8-6-14	8-8-14	
2-Butanone	0.14	0.13	EPA 8260C	8-6-14	8-8-14	Y
Bromochloromethane	ND	0.025	EPA 8260C	8-6-14	8-8-14	
Chloroform	ND	0.025	EPA 8260C	8-6-14	8-8-14	
1,1,1-Trichloroethane	ND	0.025	EPA 8260C	8-6-14	8-8-14	
Carbon Tetrachloride	ND	0.025	EPA 8260C	8-6-14	8-8-14	
1,1-Dichloropropene	ND	0.025	EPA 8260C	8-6-14	8-8-14	
Benzene	0.042	0.025	EPA 8260C	8-6-14	8-8-14	
1,2-Dichloroethane	ND	0.025	EPA 8260C	8-6-14	8-8-14	
Trichloroethene	0.054	0.025	EPA 8260C	8-6-14	8-8-14	
1,2-Dichloropropane	ND	0.025	EPA 8260C	8-6-14	8-8-14	
Dibromomethane	ND	0.025	EPA 8260C	8-6-14	8-8-14	
Bromodichloromethane	ND	0.025	EPA 8260C	8-6-14	8-8-14	
2-Chloroethyl Vinyl Ether	ND	0.13	EPA 8260C	8-6-14	8-8-14	
(cis) 1,3-Dichloropropene	ND	0.025	EPA 8260C	8-6-14	8-8-14	
Methyl Isobutyl Ketone	1.0	0.13	EPA 8260C	8-6-14	8-8-14	
Toluene	12	0.64	EPA 8260C	8-6-14	8-8-14	
(trans) 1,3-Dichloropropene	ND	0.025	EPA 8260C	8-6-14	8-8-14	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-TA01-SL**					
Laboratory ID:	08-059-11					
1,1,2-Trichloroethane	ND	0.025	EPA 8260C	8-6-14	8-8-14	
Tetrachloroethene	ND	0.025	EPA 8260C	8-6-14	8-8-14	
1,3-Dichloropropane	ND	0.025	EPA 8260C	8-6-14	8-8-14	
2-Hexanone	ND	0.13	EPA 8260C	8-6-14	8-8-14	
Dibromochloromethane	ND	0.025	EPA 8260C	8-6-14	8-8-14	
1,2-Dibromoethane	ND	0.025	EPA 8260C	8-6-14	8-8-14	
Chlorobenzene	ND	0.025	EPA 8260C	8-6-14	8-8-14	
1,1,1,2-Tetrachloroethane	ND	0.025	EPA 8260C	8-6-14	8-8-14	
Ethylbenzene	0.53	0.025	EPA 8260C	8-6-14	8-8-14	
m,p-Xylene	2.1	0.051	EPA 8260C	8-6-14	8-8-14	
o-Xylene	1.0	0.025	EPA 8260C	8-6-14	8-8-14	
Styrene	ND	0.025	EPA 8260C	8-6-14	8-8-14	
Bromoform	ND	0.025	EPA 8260C	8-6-14	8-8-14	
Isopropylbenzene	0.25	0.025	EPA 8260C	8-6-14	8-8-14	
Bromobenzene	ND	0.025	EPA 8260C	8-6-14	8-8-14	
1,1,2,2-Tetrachloroethane	ND	0.025	EPA 8260C	8-6-14	8-8-14	
1,2,3-Trichloropropane	ND	0.025	EPA 8260C	8-6-14	8-8-14	
n-Propylbenzene	0.65	0.025	EPA 8260C	8-6-14	8-8-14	
2-Chlorotoluene	ND	0.025	EPA 8260C	8-6-14	8-8-14	
4-Chlorotoluene	ND	0.025	EPA 8260C	8-6-14	8-8-14	
1,3,5-Trimethylbenzene	1.4	0.025	EPA 8260C	8-6-14	8-8-14	
tert-Butylbenzene	ND	0.025	EPA 8260C	8-6-14	8-8-14	
1,2,4-Trimethylbenzene	5.2	0.13	EPA 8260C	8-6-14	8-8-14	
sec-Butylbenzene	0.19	0.025	EPA 8260C	8-6-14	8-8-14	
1,3-Dichlorobenzene	ND	0.025	EPA 8260C	8-6-14	8-8-14	
p-Isopropyltoluene	6.1	0.13	EPA 8260C	8-6-14	8-8-14	
1,4-Dichlorobenzene	ND	0.025	EPA 8260C	8-6-14	8-8-14	
1,2-Dichlorobenzene	ND	0.025	EPA 8260C	8-6-14	8-8-14	
n-Butylbenzene	0.72	0.025	EPA 8260C	8-6-14	8-8-14	
1,2-Dibromo-3-chloropropane	ND	0.13	EPA 8260C	8-6-14	8-8-14	
1,2,4-Trichlorobenzene	ND	0.025	EPA 8260C	8-6-14	8-8-14	
Hexachlorobutadiene	ND	0.13	EPA 8260C	8-6-14	8-8-14	
Naphthalene	3.4	0.13	EPA 8260C	8-6-14	8-8-14	
1,2,3-Trichlorobenzene	ND	0.025	EPA 8260C	8-6-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*113*	*65-129*				
Toluene-d8	*114*	*77-122*				
4-Bromofluorobenzene	*109*	*73-124*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**Trip Blank 1**					
Laboratory ID:	08-059-12					
Dichlorodifluoromethane	ND	0.075	EPA 8260C	7-29-14	8-8-14	
Chloromethane	ND	0.32	EPA 8260C	7-29-14	8-8-14	
Vinyl Chloride	ND	0.050	EPA 8260C	7-29-14	8-8-14	
Bromomethane	ND	0.050	EPA 8260C	7-29-14	8-8-14	
Chloroethane	ND	0.25	EPA 8260C	7-29-14	8-8-14	
Trichlorofluoromethane	ND	0.050	EPA 8260C	7-29-14	8-8-14	
1,1-Dichloroethene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
Acetone	ND	0.25	EPA 8260C	7-29-14	8-8-14	
Iodomethane	ND	0.25	EPA 8260C	7-29-14	8-8-14	
Carbon Disulfide	ND	0.050	EPA 8260C	7-29-14	8-8-14	
Methylene Chloride	ND	0.25	EPA 8260C	7-29-14	8-8-14	
(trans) 1,2-Dichloroethene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
Methyl t-Butyl Ether	ND	0.050	EPA 8260C	7-29-14	8-8-14	
1,1-Dichloroethane	ND	0.050	EPA 8260C	7-29-14	8-8-14	
Vinyl Acetate	ND	0.25	EPA 8260C	7-29-14	8-8-14	
2,2-Dichloropropane	ND	0.050	EPA 8260C	7-29-14	8-8-14	
(cis) 1,2-Dichloroethene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
2-Butanone	ND	0.25	EPA 8260C	7-29-14	8-8-14	
Bromochloromethane	ND	0.050	EPA 8260C	7-29-14	8-8-14	
Chloroform	ND	0.050	EPA 8260C	7-29-14	8-8-14	
1,1,1-Trichloroethane	ND	0.0025	EPA 8260C/SIM	7-29-14	8-11-14	
Carbon Tetrachloride	ND	0.050	EPA 8260C	7-29-14	8-8-14	
1,1-Dichloropropene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
Benzene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
1,2-Dichloroethane	ND	0.050	EPA 8260C	7-29-14	8-8-14	
Trichloroethene	ND	0.0025	EPA 8260C/SIM	7-29-14	8-11-14	
1,2-Dichloropropane	ND	0.050	EPA 8260C	7-29-14	8-8-14	
Dibromomethane	ND	0.050	EPA 8260C	7-29-14	8-8-14	
Bromodichloromethane	ND	0.050	EPA 8260C	7-29-14	8-8-14	
2-Chloroethyl Vinyl Ether	ND	0.25	EPA 8260C	7-29-14	8-8-14	
(cis) 1,3-Dichloropropene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
Methyl Isobutyl Ketone	ND	0.25	EPA 8260C	7-29-14	8-8-14	
Toluene	ND	0.25	EPA 8260C	7-29-14	8-8-14	
(trans) 1,3-Dichloropropene	ND	0.050	EPA 8260C	7-29-14	8-8-14	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES EPA 8260C
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**Trip Blank 1**					
Laboratory ID:	08-059-12					
1,1,2-Trichloroethane	ND	0.050	EPA 8260C	7-29-14	8-8-14	
Tetrachloroethene	ND	0.0025	EPA 8260C/SIM	7-29-14	8-11-14	
1,3-Dichloropropane	ND	0.050	EPA 8260C	7-29-14	8-8-14	
2-Hexanone	ND	0.25	EPA 8260C	7-29-14	8-8-14	
Dibromochloromethane	ND	0.050	EPA 8260C	7-29-14	8-8-14	
1,2-Dibromoethane	ND	0.050	EPA 8260C	7-29-14	8-8-14	
Chlorobenzene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
1,1,1,2-Tetrachloroethane	ND	0.050	EPA 8260C	7-29-14	8-8-14	
Ethylbenzene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
m,p-Xylene	ND	0.10	EPA 8260C	7-29-14	8-8-14	
o-Xylene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
Styrene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
Bromoform	ND	0.050	EPA 8260C	7-29-14	8-8-14	
Isopropylbenzene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
Bromobenzene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
1,1,2,2-Tetrachloroethane	ND	0.050	EPA 8260C	7-29-14	8-8-14	
1,2,3-Trichloropropane	ND	0.050	EPA 8260C	7-29-14	8-8-14	
n-Propylbenzene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
2-Chlorotoluene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
4-Chlorotoluene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
1,3,5-Trimethylbenzene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
tert-Butylbenzene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
1,2,4-Trimethylbenzene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
sec-Butylbenzene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
1,3-Dichlorobenzene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
p-Isopropyltoluene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
1,4-Dichlorobenzene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
1,2-Dichlorobenzene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
n-Butylbenzene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
1,2-Dibromo-3-chloropropane	ND	0.25	EPA 8260C	7-29-14	8-8-14	
1,2,4-Trichlorobenzene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
Hexachlorobutadiene	ND	0.25	EPA 8260C	7-29-14	8-8-14	
Naphthalene	ND	0.25	EPA 8260C	7-29-14	8-8-14	
1,2,3-Trichlorobenzene	ND	0.050	EPA 8260C	7-29-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*104*	*65-129*				
Toluene-d8	*108*	*77-122*				
4-Bromofluorobenzene	*102*	*73-124*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0808S1					
Dichlorodifluoromethane	ND	0.075	EPA 8260C	8-8-14	8-8-14	
Chloromethane	ND	0.32	EPA 8260C	8-8-14	8-8-14	
Vinyl Chloride	ND	0.050	EPA 8260C	8-8-14	8-8-14	
Bromomethane	ND	0.050	EPA 8260C	8-8-14	8-8-14	
Chloroethane	ND	0.25	EPA 8260C	8-8-14	8-8-14	
Trichlorofluoromethane	ND	0.050	EPA 8260C	8-8-14	8-8-14	
1,1-Dichloroethene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
Acetone	ND	0.25	EPA 8260C	8-8-14	8-8-14	
Iodomethane	ND	0.25	EPA 8260C	8-8-14	8-8-14	
Carbon Disulfide	ND	0.050	EPA 8260C	8-8-14	8-8-14	
Methylene Chloride	ND	0.25	EPA 8260C	8-8-14	8-8-14	
(trans) 1,2-Dichloroethene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
Methyl t-Butyl Ether	ND	0.050	EPA 8260C	8-8-14	8-8-14	
1,1-Dichloroethane	ND	0.050	EPA 8260C	8-8-14	8-8-14	
Vinyl Acetate	ND	0.25	EPA 8260C	8-8-14	8-8-14	
2,2-Dichloropropane	ND	0.050	EPA 8260C	8-8-14	8-8-14	
(cis) 1,2-Dichloroethene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
2-Butanone	ND	0.25	EPA 8260C	8-8-14	8-8-14	
Bromochloromethane	ND	0.050	EPA 8260C	8-8-14	8-8-14	
Chloroform	ND	0.050	EPA 8260C	8-8-14	8-8-14	
1,1,1-Trichloroethane	ND	0.050	EPA 8260C	8-8-14	8-8-14	
Carbon Tetrachloride	ND	0.050	EPA 8260C	8-8-14	8-8-14	
1,1-Dichloropropene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
Benzene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
1,2-Dichloroethane	ND	0.050	EPA 8260C	8-8-14	8-8-14	
Trichloroethene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
1,2-Dichloropropane	ND	0.050	EPA 8260C	8-8-14	8-8-14	
Dibromomethane	ND	0.050	EPA 8260C	8-8-14	8-8-14	
Bromodichloromethane	ND	0.050	EPA 8260C	8-8-14	8-8-14	
2-Chloroethyl Vinyl Ether	ND	0.25	EPA 8260C	8-8-14	8-8-14	
(cis) 1,3-Dichloropropene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
Methyl Isobutyl Ketone	ND	0.25	EPA 8260C	8-8-14	8-8-14	
Toluene	ND	0.25	EPA 8260C	8-8-14	8-8-14	
(trans) 1,3-Dichloropropene	ND	0.050	EPA 8260C	8-8-14	8-8-14	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0808S1					
1,1,2-Trichloroethane	ND	0.050	EPA 8260C	8-8-14	8-8-14	
Tetrachloroethene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
1,3-Dichloropropane	ND	0.050	EPA 8260C	8-8-14	8-8-14	
2-Hexanone	ND	0.25	EPA 8260C	8-8-14	8-8-14	
Dibromochloromethane	ND	0.050	EPA 8260C	8-8-14	8-8-14	
1,2-Dibromoethane	ND	0.050	EPA 8260C	8-8-14	8-8-14	
Chlorobenzene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
1,1,1,2-Tetrachloroethane	ND	0.050	EPA 8260C	8-8-14	8-8-14	
Ethylbenzene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
m,p-Xylene	ND	0.10	EPA 8260C	8-8-14	8-8-14	
o-Xylene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
Styrene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
Bromoform	ND	0.050	EPA 8260C	8-8-14	8-8-14	
Isopropylbenzene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
Bromobenzene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
1,1,2,2-Tetrachloroethane	ND	0.050	EPA 8260C	8-8-14	8-8-14	
1,2,3-Trichloropropane	ND	0.050	EPA 8260C	8-8-14	8-8-14	
n-Propylbenzene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
2-Chlorotoluene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
4-Chlorotoluene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
1,3,5-Trimethylbenzene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
tert-Butylbenzene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
1,2,4-Trimethylbenzene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
sec-Butylbenzene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
1,3-Dichlorobenzene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
p-Isopropyltoluene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
1,4-Dichlorobenzene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
1,2-Dichlorobenzene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
n-Butylbenzene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
1,2-Dibromo-3-chloropropane	ND	0.25	EPA 8260C	8-8-14	8-8-14	
1,2,4-Trichlorobenzene	ND	0.050	EPA 8260C	8-8-14	8-8-14	
Hexachlorobutadiene	ND	0.25	EPA 8260C	8-8-14	8-8-14	
Naphthalene	ND	0.25	EPA 8260C	8-8-14	8-8-14	
1,2,3-Trichlorobenzene	ND	0.050	EPA 8260C	8-8-14	8-8-14	

Surrogate:	*Percent Recovery*	*Control Limits*
Dibromofluoromethane	*110*	*65-129*
Toluene-d8	*115*	*77-122*
4-Bromofluorobenzene	*107*	*73-124*

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0811S1					
1,1,1-Trichloroethane	ND	0.0025	EPA 8260C/SIM	8-11-14	8-11-14	
Trichloroethene	ND	0.0025	EPA 8260C/SIM	8-11-14	8-11-14	
Tetrachloroethene	ND	0.0025	EPA 8260C/SIM	8-11-14	8-11-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*94*	*65-129*				
Toluene-d8	*89*	*77-122*				
4-Bromofluorobenzene	*97*	*73-124*				

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES by EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0808S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0508**	**0.0501**	0.0500	0.0500	102	100	56-141	1	15	
Benzene	**0.0521**	**0.0526**	0.0500	0.0500	104	105	70-121	1	15	
Trichloroethene	**0.0510**	**0.0517**	0.0500	0.0500	102	103	74-118	1	15	
Toluene	**0.0511**	**0.0510**	0.0500	0.0500	102	102	75-120	0	15	
Chlorobenzene	**0.0487**	**0.0483**	0.0500	0.0500	97	97	75-120	1	15	
Surrogate:										
Dibromofluoromethane					*104*	*108*	*65-129*			
Toluene-d8					*105*	*112*	*77-122*			
4-Bromofluorobenzene					*99*	*104*	*73-124*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

VOLATILES by EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0811SIM									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0429**	**0.0396**	0.0500	0.0500	86	79	56-141	8	15	
Benzene	**0.0437**	**0.0408**	0.0500	0.0500	87	82	70-121	7	15	
Trichloroethene	**0.0489**	**0.0449**	0.0500	0.0500	98	90	74-118	9	15	
Toluene	**0.0454**	**0.0417**	0.0500	0.0500	91	83	75-120	8	15	
Chlorobenzene	**0.0503**	**0.0450**	0.0500	0.0500	101	90	75-120	11	15	
Surrogate:										
Dibromofluoromethane					*95*	*93*	*65-129*			
Toluene-d8					*94*	*90*	*77-122*			
4-Bromofluorobenzene					*101*	*98*	*73-124*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

GRO
AK101

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-EX01-SO**					
Laboratory ID:	08-059-01					
Alaska GRO	**ND**	2.7	AK 101	8-8-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*95*	*50-150*				
Client ID:	**14-BH1-EX02-SO**					
Laboratory ID:	08-059-02					
Alaska GRO	**ND**	3.5	AK 101	8-8-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*93*	*50-150*				
Client ID:	**14-BH1-EX03-SO**					
Laboratory ID:	08-059-03					
Alaska GRO	**ND**	3.0	AK 101	8-8-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*93*	*50-150*				
Client ID:	**14-BH1-EX04-SO**					
Laboratory ID:	08-059-04					
Alaska GRO	**ND**	3.4	AK 101	8-8-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*93*	*50-150*				
Client ID:	**14-BH1-EX05-SO**					
Laboratory ID:	08-059-05					
Alaska GRO	**ND**	4.6	AK 101	8-8-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*50-150*				
Client ID:	**14-BH1-EX06-SO**					
Laboratory ID:	08-059-06					
Alaska GRO	**ND**	2.4	AK 101	8-8-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*99*	*50-150*				

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

GRO
AK101

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-DR01-SL**					
Laboratory ID:	08-059-07					
Alaska GRO	**16**	11	AK 101	8-8-14	8-8-14	O
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*50-150*				
Client ID:	**14-BH1-SP01-SO**					
Laboratory ID:	08-059-08					
Alaska GRO	**ND**	3.3	AK 101	8-8-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*50-150*				
Client ID:	**14-BH1-SP02-SO**					
Laboratory ID:	08-059-09					
Alaska GRO	**ND**	3.2	AK 101	8-8-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*50-150*				
Client ID:	**14-BH1-WS01-SO**					
Laboratory ID:	08-059-10					
Alaska GRO	**ND**	3.0	AK 101	8-8-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*95*	*50-150*				
Client ID:	**14-BH1-TA01-SL**					
Laboratory ID:	08-059-11					
Alaska GRO	**47**	5.1	AK 101	8-8-14	8-8-14	O
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*50-150*				
Client ID:	**Trip Blank 1**					
Laboratory ID:	08-059-12					
Alaska GRO	**ND**	5.0	AK 101	8-8-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*95*	*50-150*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

GRO
AK101
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0808S1					
Alaska GRO	**ND**	5.0	AK 101	8-8-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*95*	*60-120*				
Laboratory ID:	MB0808S2					
Alaska GRO	**ND**	5.0	AK 101	8-8-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*60-120*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-059-01										
	ORIG	DUP									
Alaska GRO	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*95*	*95*	*50-150*			
Laboratory ID:	08-059-02										
	ORIG	DUP									
Alaska GRO	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*93*	*97*	*50-150*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

DRO/RRO
AK102/AK103

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-EX01-SO**					
Laboratory ID:	08-059-01					
Diesel Range Organics	**100**	11	AK102	8-8-14	8-8-14	
Residual Range Organics	**350**	22	AK103	8-8-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*108*	*50-150*				
Client ID:	**14-BH1-EX02-SO**					
Laboratory ID:	08-059-02					
Diesel Range Organics	**740**	110	AK102	8-8-14	8-8-14	
Residual Range Organics	**2200**	220	AK103	8-8-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*---*	*50-150*				S
Client ID:	**14-BH1-EX03-SO**					
Laboratory ID:	08-059-03					
Diesel Range Organics	**120**	53	AK102	8-8-14	8-8-14	
Residual Range Organics	**350**	110	AK103	8-8-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*50*	*50-150*				
Client ID:	**14-BH1-EX04-SO**					
Laboratory ID:	08-059-04					
Diesel Range Organics	**29**	11	AK102	8-8-14	8-8-14	
Residual Range Organics	**120**	22	AK103	8-8-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*102*	*50-150*				
Client ID:	**14-BH1-EX05-SO**					
Laboratory ID:	08-059-05					
Diesel Range Organics	**14**	11	AK102	8-8-14	8-8-14	
Residual Range Organics	**55**	22	AK103	8-8-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*98*	*50-150*				
Client ID:	**14-BH1-EX06-SO**					
Laboratory ID:	08-059-06					
Diesel Range Organics	**94**	53	AK102	8-8-14	8-8-14	
Residual Range Organics	**290**	110	AK103	8-8-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*54*	*50-150*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

DRO/RRO
AK102/AK103

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BH1-DR01-SL**					
Laboratory ID:	08-059-07					
Diesel Range Organics	**17000**	3300	AK102	8-8-14	8-11-14	
Residual Range Organics	**33000**	6600	AK103	8-8-14	8-11-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*---*	*50-150*				S
Client ID:	**14-BH1-SP01-SO**					
Laboratory ID:	08-059-08					
Diesel Range Organics	**190**	11	AK102	8-8-14	8-8-14	
Residual Range Organics	**430**	21	AK103	8-8-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*108*	*50-150*				
Client ID:	**14-BH1-SP02-SO**					
Laboratory ID:	08-059-09					
Diesel Range Organics	**78**	53	AK102	8-8-14	8-8-14	
Residual Range Organics	**250**	110	AK103	8-8-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*52*	*50-150*				
Client ID:	**14-BH1-WS01-SO**					
Laboratory ID:	08-059-10					
Diesel Range Organics	**18**	11	AK102	8-8-14	8-8-14	
Residual Range Organics	**59**	21	AK103	8-8-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*102*	*50-150*				
Client ID:	**14-BH1-TA01-SL**					
Laboratory ID:	08-059-11					
Diesel Range Organics	**6800**	2300	AK102	8-8-14	8-11-14	
Residual Range Organics	**7300**	4500	AK103	8-8-14	8-11-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*---*	*50-150*				S

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

DRO/RRO
AK102/AK103
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0808S2					
Diesel Range Organics	**ND**	10	AK102	8-8-14	8-8-14	
Residual Range Organics	**ND**	20	AK103	8-8-14	8-8-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*91*	*60-120*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	SB0808S2										
	ORIG	DUP									
Diesel Range Organics	**96.3**	**102**	100	100		96	102	75-120	6	20	
Residual Range Organics	**90.6**	**95.6**	100	100		91	96	75-120	5	20	
Surrogate:											
o-Terphenyl						*97*	*100*	*50-150*			

Date of Report: August 11, 2014
Samples Submitted: August 8, 2014
Laboratory Reference: 1408-059
Project: 20275.002.05

% MOISTURE

Date Analyzed: 8-8-14

Client ID	Lab ID	% Moisture
14-BH1-EX01-SO	08-059-01	11
14-BH1-EX02-SO	08-059-02	9
14-BH1-EX03-SO	08-059-03	6
14-BH1-EX04-SO	08-059-04	10
14-BH1-EX05-SO	08-059-05	8
14-BH1-EX06-SO	08-059-06	5
14-BH1-DR01-S2	08-059-07	40
14-BH1-SP01-SO	08-059-08	6
14-BH1-SP02-SO	08-059-09	5
14-BH1-WS01-SO	08-059-10	6
14-BH1-TA01-SL	08-059-11	12

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Chain of Custody

Company: Ahtna
Project Number: 20275.002.05
Project Name: Nikiski
Project Manager: Dan Frank
Sampled by: Dan Frank

Turnaround Request (in working days)
(Check One)
☐ Same Day ☒ 1 Day
☐ 2 Days ☐ 3 Days
☐ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Laboratory Number: 08-059

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	AK101	AK102/103				% Moisture
1	14-BM1-EX01-SO	8/5/14	1500	Soil	2					X												X	X				X
2	14-BM1-EX-02-SO	8/6/14	1730		2					X												X	X				X
3	14-BM1-EX-03-SO		1735		2					X												X	X				X
4	14-BM1-EX04-SO		1740		2					X												X	X				X
5	14-BM1-EX05-SO		1745		2					X												X	X				X
6	14-BM1-EX06-SO		1750		2					X												X	X				X
7	14-BM1-~~EX~~ DR DR01-SL	8/5/14	1450	sludge	2					X												X	X				X
8	14-BM1-SP01-SO	8/7/14	0805	Soil	2					X												X	X				X
9	14-BM1-SP02-SO		0815		2					X												X	X				X
10	14-BM1-WS01-SO		0820		2					X												X	X				X

	Signature	Company	Date	Time
Relinquished	[signature]	Ahtna	8/7/14	1050
Received	[signature]	OnSite Env	8/8/14	830
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions: Please Rush all analytes

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Chain of Custody

Company: Ahtna
Project Number: 20275-002.05
Project Name: Nikiski
Project Manager: Dan Frank
Sampled by: Dan Frank

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☐ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Laboratory Number: 08-059

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	AK101	AK102/103				% Moisture
11	14-BMI-TA01-SL	8/6/14	1630	Slug	2					X	/											X	X				X
12	TRIP BLANK 1	7/29/14	1050	Soil	1					X												X					

8/7/14

	Signature	Company	Date	Time
Relinquished		Ahtna	8/7/14	1050
Received		Cascade	8/8/14	830
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 29, 2014

Dan Frank
Ahtna Engineering Services LLC
305 34th Avenue
Fairbanks, AK 99701

Re: Analytical Data for Project 20275.002.05
Laboratory Reference No. 1408-200

Dear Dan:

Enclosed are the analytical results and associated quality control data for samples submitted on August 22, 2014.

CS Laboratory Approval Number: UST-039

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

Case Narrative

Samples were collected on August 19, 2014 and received by the laboratory on August 22, 2014. They were maintained at the laboratory at a temperature of 2°C to 6°C.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Volatiles EPA 8260C Analysis

Some project-requested PQLs are non-achievable for samples 14-BHI-SP-03-SO and 14-BHI-IP-03-SO due to the low weight of the provided samples.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

Analyst's Signature

Stacey Duran, GC/MS Volatiles Chemist

9-2-14
Date

Analyst's Signature

Eileen Merk, GRO Chemist

9-2-14
Date

Analyst's Signature

Zeus Thornton, DRO Chemist

9-2-14
Date

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

VOLATILES EPA 8260C/SIM
Page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BHI-EX-07-SO**					
Laboratory ID:	08-200-01					
Dichlorodifluoromethane	ND	0.028	EPA 8260C	8-19-14	8-26-14	
Chloromethane	ND	0.14	EPA 8260C	8-19-14	8-26-14	
Vinyl Chloride	ND	0.028	EPA 8260C	8-19-14	8-26-14	
Bromomethane	ND	0.028	EPA 8260C	8-19-14	8-26-14	
Chloroethane	ND	0.14	EPA 8260C	8-19-14	8-26-14	
Trichlorofluoromethane	ND	0.028	EPA 8260C	8-19-14	8-26-14	
1,1-Dichloroethene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
Acetone	ND	0.14	EPA 8260C	8-19-14	8-26-14	
Iodomethane	ND	0.14	EPA 8260C	8-19-14	8-26-14	
Carbon Disulfide	ND	0.028	EPA 8260C	8-19-14	8-26-14	
Methylene Chloride	ND	0.14	EPA 8260C	8-19-14	8-26-14	
(trans) 1,2-Dichloroethene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
Methyl t-Butyl Ether	ND	0.028	EPA 8260C	8-19-14	8-26-14	
1,1-Dichloroethane	ND	0.028	EPA 8260C	8-19-14	8-26-14	
Vinyl Acetate	ND	0.14	EPA 8260C	8-19-14	8-26-14	
2,2-Dichloropropane	ND	0.028	EPA 8260C	8-19-14	8-26-14	
(cis) 1,2-Dichloroethene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
2-Butanone	ND	0.14	EPA 8260C	8-19-14	8-26-14	
Bromochloromethane	ND	0.028	EPA 8260C	8-19-14	8-26-14	
Chloroform	ND	0.028	EPA 8260C	8-19-14	8-26-14	
1,1,1-Trichloroethane	ND	0.0025	EPA 8260C/SIM	8-19-14	8-26-14	
Carbon Tetrachloride	ND	0.028	EPA 8260C	8-19-14	8-26-14	
1,1-Dichloropropene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
Benzene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
1,2-Dichloroethane	ND	0.028	EPA 8260C	8-19-14	8-26-14	
Trichloroethene	ND	0.0025	EPA 8260C/SIM	8-19-14	8-26-14	
1,2-Dichloropropane	ND	0.028	EPA 8260C	8-19-14	8-26-14	
Dibromomethane	ND	0.028	EPA 8260C	8-19-14	8-26-14	
Bromodichloromethane	ND	0.028	EPA 8260C	8-19-14	8-26-14	
2-Chloroethyl Vinyl Ether	ND	0.14	EPA 8260C	8-19-14	8-26-14	
(cis) 1,3-Dichloropropene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
Methyl Isobutyl Ketone	ND	0.14	EPA 8260C	8-19-14	8-26-14	
Toluene	ND	0.14	EPA 8260C	8-19-14	8-26-14	
(trans) 1,3-Dichloropropene	ND	0.028	EPA 8260C	8-19-14	8-26-14	

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

VOLATILES EPA 8260C/SIM
Page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BHI-EX-07-SO**					
Laboratory ID:	08-200-01					
1,1,2-Trichloroethane	ND	0.028	EPA 8260C	8-19-14	8-26-14	
Tetrachloroethene	ND	0.0025	EPA 8260C/SIM	8-19-14	8-26-14	
1,3-Dichloropropane	ND	0.028	EPA 8260C	8-19-14	8-26-14	
2-Hexanone	ND	0.14	EPA 8260C	8-19-14	8-26-14	
Dibromochloromethane	ND	0.028	EPA 8260C	8-19-14	8-26-14	
1,2-Dibromoethane	ND	0.028	EPA 8260C	8-19-14	8-26-14	
Chlorobenzene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
1,1,1,2-Tetrachloroethane	ND	0.028	EPA 8260C	8-19-14	8-26-14	
Ethylbenzene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
m,p-Xylene	ND	0.056	EPA 8260C	8-19-14	8-26-14	
o-Xylene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
Styrene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
Bromoform	ND	0.028	EPA 8260C	8-19-14	8-26-14	
Isopropylbenzene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
Bromobenzene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
1,1,2,2-Tetrachloroethane	ND	0.028	EPA 8260C	8-19-14	8-26-14	
1,2,3-Trichloropropane	ND	0.028	EPA 8260C	8-19-14	8-26-14	
n-Propylbenzene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
2-Chlorotoluene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
4-Chlorotoluene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
1,3,5-Trimethylbenzene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
tert-Butylbenzene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
1,2,4-Trimethylbenzene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
sec-Butylbenzene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
1,3-Dichlorobenzene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
p-Isopropyltoluene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
1,4-Dichlorobenzene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
1,2-Dichlorobenzene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
n-Butylbenzene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
1,2-Dibromo-3-chloropropane	ND	0.14	EPA 8260C	8-19-14	8-26-14	
1,2,4-Trichlorobenzene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
Hexachlorobutadiene	ND	0.14	EPA 8260C	8-19-14	8-26-14	
Naphthalene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
1,2,3-Trichlorobenzene	ND	0.028	EPA 8260C	8-19-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*100*	*65-129*				
Toluene-d8	*100*	*77-122*				
4-Bromofluorobenzene	*106*	*73-124*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

VOLATILES EPA 8260C/SIM
Page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BHI-SP-03-SO**					
Laboratory ID:	08-200-02					
Dichlorodifluoromethane	ND	0.16	EPA 8260C	8-19-14	8-26-14	
Chloromethane	ND	0.80	EPA 8260C	8-19-14	8-26-14	
Vinyl Chloride	ND	0.16	EPA 8260C	8-19-14	8-26-14	
Bromomethane	ND	0.16	EPA 8260C	8-19-14	8-26-14	
Chloroethane	ND	0.80	EPA 8260C	8-19-14	8-26-14	
Trichlorofluoromethane	ND	0.16	EPA 8260C	8-19-14	8-26-14	
1,1-Dichloroethene	ND	0.16	EPA 8260C	8-19-14	8-26-14	
Acetone	ND	0.80	EPA 8260C	8-19-14	8-26-14	
Iodomethane	ND	0.80	EPA 8260C	8-19-14	8-26-14	
Carbon Disulfide	ND	0.16	EPA 8260C	8-19-14	8-26-14	
Methylene Chloride	ND	0.80	EPA 8260C	8-19-14	8-26-14	
(trans) 1,2-Dichloroethene	ND	0.16	EPA 8260C	8-19-14	8-26-14	
Methyl t-Butyl Ether	ND	0.16	EPA 8260C	8-19-14	8-26-14	
1,1-Dichloroethane	ND	0.16	EPA 8260C	8-19-14	8-26-14	
Vinyl Acetate	ND	0.80	EPA 8260C	8-19-14	8-26-14	
2,2-Dichloropropane	ND	0.16	EPA 8260C	8-19-14	8-26-14	
(cis) 1,2-Dichloroethene	ND	0.16	EPA 8260C	8-19-14	8-26-14	
2-Butanone	ND	0.80	EPA 8260C	8-19-14	8-26-14	
Bromochloromethane	ND	0.16	EPA 8260C	8-19-14	8-26-14	
Chloroform	ND	0.16	EPA 8260C	8-19-14	8-26-14	
1,1,1-Trichloroethane	ND	0.0080	EPA 8260C/SIM	8-19-14	8-26-14	
Carbon Tetrachloride	ND	0.16	EPA 8260C	8-19-14	8-26-14	
1,1-Dichloropropene	ND	0.16	EPA 8260C	8-19-14	8-26-14	
Benzene	ND	0.16	EPA 8260C	8-19-14	8-26-14	
1,2-Dichloroethane	ND	0.16	EPA 8260C	8-19-14	8-26-14	
Trichloroethene	2.7	0.16	EPA 8260C	8-19-14	8-26-14	
1,2-Dichloropropane	ND	0.16	EPA 8260C	8-19-14	8-26-14	
Dibromomethane	ND	0.16	EPA 8260C	8-19-14	8-26-14	
Bromodichloromethane	ND	0.16	EPA 8260C	8-19-14	8-26-14	
2-Chloroethyl Vinyl Ether	ND	0.80	EPA 8260C	8-19-14	8-26-14	
(cis) 1,3-Dichloropropene	ND	0.16	EPA 8260C	8-19-14	8-26-14	
Methyl Isobutyl Ketone	ND	0.80	EPA 8260C	8-19-14	8-26-14	
Toluene	26	0.80	EPA 8260C	8-19-14	8-26-14	
(trans) 1,3-Dichloropropene	ND	0.16	EPA 8260C	8-19-14	8-26-14	

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

VOLATILES EPA 8260C/SIM
Page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BHI-SP-03-SO**					
Laboratory ID:	08-200-02					
1,1,2-Trichloroethane	ND	0.16	EPA 8260C	8-19-14	8-26-14	
Tetrachloroethene	0.13	0.0080	EPA 8260C/SIM	8-19-14	8-26-14	
1,3-Dichloropropane	ND	0.16	EPA 8260C	8-19-14	8-26-14	
2-Hexanone	ND	0.80	EPA 8260C	8-19-14	8-26-14	
Dibromochloromethane	ND	0.16	EPA 8260C	8-19-14	8-26-14	
1,2-Dibromoethane	ND	0.16	EPA 8260C	8-19-14	8-26-14	
Chlorobenzene	ND	0.16	EPA 8260C	8-19-14	8-26-14	
1,1,1,2-Tetrachloroethane	ND	0.16	EPA 8260C	8-19-14	8-26-14	
Ethylbenzene	13	0.16	EPA 8260C	8-19-14	8-26-14	
m,p-Xylene	39	0.32	EPA 8260C	8-19-14	8-26-14	
o-Xylene	12	0.16	EPA 8260C	8-19-14	8-26-14	
Styrene	ND	0.16	EPA 8260C	8-19-14	8-26-14	
Bromoform	ND	0.16	EPA 8260C	8-19-14	8-26-14	
Isopropylbenzene	0.79	0.16	EPA 8260C	8-19-14	8-26-14	
Bromobenzene	ND	0.16	EPA 8260C	8-19-14	8-26-14	
1,1,2,2-Tetrachloroethane	ND	0.16	EPA 8260C	8-19-14	8-26-14	
1,2,3-Trichloropropane	ND	0.16	EPA 8260C	8-19-14	8-26-14	
n-Propylbenzene	1.6	0.16	EPA 8260C	8-19-14	8-26-14	
2-Chlorotoluene	ND	0.16	EPA 8260C	8-19-14	8-26-14	
4-Chlorotoluene	ND	0.16	EPA 8260C	8-19-14	8-26-14	
1,3,5-Trimethylbenzene	4.2	0.16	EPA 8260C	8-19-14	8-26-14	
tert-Butylbenzene	ND	0.16	EPA 8260C	8-19-14	8-26-14	
1,2,4-Trimethylbenzene	13	0.16	EPA 8260C	8-19-14	8-26-14	
sec-Butylbenzene	0.94	0.16	EPA 8260C	8-19-14	8-26-14	
1,3-Dichlorobenzene	ND	0.16	EPA 8260C	8-19-14	8-26-14	
p-Isopropyltoluene	4.9	0.16	EPA 8260C	8-19-14	8-26-14	
1,4-Dichlorobenzene	ND	0.16	EPA 8260C	8-19-14	8-26-14	
1,2-Dichlorobenzene	ND	0.16	EPA 8260C	8-19-14	8-26-14	
n-Butylbenzene	4.0	0.16	EPA 8260C	8-19-14	8-26-14	
1,2-Dibromo-3-chloropropane	ND	0.80	EPA 8260C	8-19-14	8-26-14	
1,2,4-Trichlorobenzene	ND	0.16	EPA 8260C	8-19-14	8-26-14	
Hexachlorobutadiene	ND	0.80	EPA 8260C	8-19-14	8-26-14	
Naphthalene	5.7	0.16	EPA 8260C	8-19-14	8-26-14	
1,2,3-Trichlorobenzene	ND	0.16	EPA 8260C	8-19-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*100*	*65-129*				
Toluene-d8	*100*	*77-122*				
4-Bromofluorobenzene	*104*	*73-124*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

VOLATILES EPA 8260C/SIM
Page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BHI-IP-01-SO**					
Laboratory ID:	08-200-03					
Dichlorodifluoromethane	ND	0.034	EPA 8260C	8-19-14	8-26-14	
Chloromethane	ND	0.17	EPA 8260C	8-19-14	8-26-14	
Vinyl Chloride	ND	0.034	EPA 8260C	8-19-14	8-26-14	
Bromomethane	ND	0.034	EPA 8260C	8-19-14	8-26-14	
Chloroethane	ND	0.17	EPA 8260C	8-19-14	8-26-14	
Trichlorofluoromethane	ND	0.034	EPA 8260C	8-19-14	8-26-14	
1,1-Dichloroethene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
Acetone	ND	0.17	EPA 8260C	8-19-14	8-26-14	
Iodomethane	ND	0.17	EPA 8260C	8-19-14	8-26-14	
Carbon Disulfide	ND	0.034	EPA 8260C	8-19-14	8-26-14	
Methylene Chloride	ND	0.17	EPA 8260C	8-19-14	8-26-14	
(trans) 1,2-Dichloroethene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
Methyl t-Butyl Ether	ND	0.034	EPA 8260C	8-19-14	8-26-14	
1,1-Dichloroethane	ND	0.034	EPA 8260C	8-19-14	8-26-14	
Vinyl Acetate	ND	0.17	EPA 8260C	8-19-14	8-26-14	
2,2-Dichloropropane	ND	0.034	EPA 8260C	8-19-14	8-26-14	
(cis) 1,2-Dichloroethene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
2-Butanone	ND	0.17	EPA 8260C	8-19-14	8-26-14	
Bromochloromethane	ND	0.034	EPA 8260C	8-19-14	8-26-14	
Chloroform	ND	0.034	EPA 8260C	8-19-14	8-26-14	
1,1,1-Trichloroethane	ND	0.0025	EPA 8260C/SIM	8-19-14	8-26-14	
Carbon Tetrachloride	ND	0.034	EPA 8260C	8-19-14	8-26-14	
1,1-Dichloropropene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
Benzene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
1,2-Dichloroethane	ND	0.034	EPA 8260C	8-19-14	8-26-14	
Trichloroethene	0.0035	0.0025	EPA 8260C/SIM	8-19-14	8-26-14	
1,2-Dichloropropane	ND	0.034	EPA 8260C	8-19-14	8-26-14	
Dibromomethane	ND	0.034	EPA 8260C	8-19-14	8-26-14	
Bromodichloromethane	ND	0.034	EPA 8260C	8-19-14	8-26-14	
2-Chloroethyl Vinyl Ether	ND	0.17	EPA 8260C	8-19-14	8-26-14	
(cis) 1,3-Dichloropropene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
Methyl Isobutyl Ketone	ND	0.17	EPA 8260C	8-19-14	8-26-14	
Toluene	ND	0.17	EPA 8260C	8-19-14	8-26-14	
(trans) 1,3-Dichloropropene	ND	0.034	EPA 8260C	8-19-14	8-26-14	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

VOLATILES EPA 8260C/SIM
Page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BHI-IP-01-SO**					
Laboratory ID:	08-200-03					
1,1,2-Trichloroethane	ND	0.034	EPA 8260C	8-19-14	8-26-14	
Tetrachloroethene	ND	0.0025	EPA 8260C/SIM	8-19-14	8-26-14	
1,3-Dichloropropane	ND	0.034	EPA 8260C	8-19-14	8-26-14	
2-Hexanone	ND	0.17	EPA 8260C	8-19-14	8-26-14	
Dibromochloromethane	ND	0.034	EPA 8260C	8-19-14	8-26-14	
1,2-Dibromoethane	ND	0.034	EPA 8260C	8-19-14	8-26-14	
Chlorobenzene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
1,1,1,2-Tetrachloroethane	ND	0.034	EPA 8260C	8-19-14	8-26-14	
Ethylbenzene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
m,p-Xylene	ND	0.068	EPA 8260C	8-19-14	8-26-14	
o-Xylene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
Styrene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
Bromoform	ND	0.034	EPA 8260C	8-19-14	8-26-14	
Isopropylbenzene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
Bromobenzene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
1,1,2,2-Tetrachloroethane	ND	0.034	EPA 8260C	8-19-14	8-26-14	
1,2,3-Trichloropropane	ND	0.034	EPA 8260C	8-19-14	8-26-14	
n-Propylbenzene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
2-Chlorotoluene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
4-Chlorotoluene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
1,3,5-Trimethylbenzene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
tert-Butylbenzene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
1,2,4-Trimethylbenzene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
sec-Butylbenzene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
1,3-Dichlorobenzene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
p-Isopropyltoluene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
1,4-Dichlorobenzene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
1,2-Dichlorobenzene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
n-Butylbenzene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
1,2-Dibromo-3-chloropropane	ND	0.17	EPA 8260C	8-19-14	8-26-14	
1,2,4-Trichlorobenzene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
Hexachlorobutadiene	ND	0.17	EPA 8260C	8-19-14	8-26-14	
Naphthalene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
1,2,3-Trichlorobenzene	ND	0.034	EPA 8260C	8-19-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*101*	*65-129*				
Toluene-d8	*99*	*77-122*				
4-Bromofluorobenzene	*105*	*73-124*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

VOLATILES EPA 8260C/SIM
Page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BHI-IP-02-SO**					
Laboratory ID:	08-200-04					
Dichlorodifluoromethane	ND	0.038	EPA 8260C	8-19-14	8-26-14	
Chloromethane	ND	0.19	EPA 8260C	8-19-14	8-26-14	
Vinyl Chloride	ND	0.038	EPA 8260C	8-19-14	8-26-14	
Bromomethane	ND	0.038	EPA 8260C	8-19-14	8-26-14	
Chloroethane	ND	0.19	EPA 8260C	8-19-14	8-26-14	
Trichlorofluoromethane	ND	0.038	EPA 8260C	8-19-14	8-26-14	
1,1-Dichloroethene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
Acetone	ND	0.19	EPA 8260C	8-19-14	8-26-14	
Iodomethane	ND	0.19	EPA 8260C	8-19-14	8-26-14	
Carbon Disulfide	ND	0.038	EPA 8260C	8-19-14	8-26-14	
Methylene Chloride	ND	0.19	EPA 8260C	8-19-14	8-26-14	
(trans) 1,2-Dichloroethene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
Methyl t-Butyl Ether	ND	0.038	EPA 8260C	8-19-14	8-26-14	
1,1-Dichloroethane	ND	0.038	EPA 8260C	8-19-14	8-26-14	
Vinyl Acetate	ND	0.19	EPA 8260C	8-19-14	8-26-14	
2,2-Dichloropropane	ND	0.038	EPA 8260C	8-19-14	8-26-14	
(cis) 1,2-Dichloroethene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
2-Butanone	ND	0.19	EPA 8260C	8-19-14	8-26-14	
Bromochloromethane	ND	0.038	EPA 8260C	8-19-14	8-26-14	
Chloroform	ND	0.038	EPA 8260C	8-19-14	8-26-14	
1,1,1-Trichloroethane	ND	0.0025	EPA 8260C/SIM	8-19-14	8-26-14	
Carbon Tetrachloride	ND	0.038	EPA 8260C	8-19-14	8-26-14	
1,1-Dichloropropene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
Benzene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
1,2-Dichloroethane	ND	0.038	EPA 8260C	8-19-14	8-26-14	
Trichloroethene	0.0031	0.0025	EPA 8260C/SIM	8-19-14	8-26-14	
1,2-Dichloropropane	ND	0.038	EPA 8260C	8-19-14	8-26-14	
Dibromomethane	ND	0.038	EPA 8260C	8-19-14	8-26-14	
Bromodichloromethane	ND	0.038	EPA 8260C	8-19-14	8-26-14	
2-Chloroethyl Vinyl Ether	ND	0.19	EPA 8260C	8-19-14	8-26-14	
(cis) 1,3-Dichloropropene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
Methyl Isobutyl Ketone	ND	0.19	EPA 8260C	8-19-14	8-26-14	
Toluene	ND	0.19	EPA 8260C	8-19-14	8-26-14	
(trans) 1,3-Dichloropropene	ND	0.038	EPA 8260C	8-19-14	8-26-14	

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

VOLATILES EPA 8260C/SIM
Page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BHI-IP-02-SO**					
Laboratory ID:	08-200-04					
1,1,2-Trichloroethane	ND	0.038	EPA 8260C	8-19-14	8-26-14	
Tetrachloroethene	ND	0.0025	EPA 8260C/SIM	8-19-14	8-26-14	
1,3-Dichloropropane	ND	0.038	EPA 8260C	8-19-14	8-26-14	
2-Hexanone	ND	0.19	EPA 8260C	8-19-14	8-26-14	
Dibromochloromethane	ND	0.038	EPA 8260C	8-19-14	8-26-14	
1,2-Dibromoethane	ND	0.038	EPA 8260C	8-19-14	8-26-14	
Chlorobenzene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
1,1,1,2-Tetrachloroethane	ND	0.038	EPA 8260C	8-19-14	8-26-14	
Ethylbenzene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
m,p-Xylene	ND	0.076	EPA 8260C	8-19-14	8-26-14	
o-Xylene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
Styrene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
Bromoform	ND	0.038	EPA 8260C	8-19-14	8-26-14	
Isopropylbenzene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
Bromobenzene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
1,1,2,2-Tetrachloroethane	ND	0.038	EPA 8260C	8-19-14	8-26-14	
1,2,3-Trichloropropane	ND	0.038	EPA 8260C	8-19-14	8-26-14	
n-Propylbenzene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
2-Chlorotoluene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
4-Chlorotoluene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
1,3,5-Trimethylbenzene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
tert-Butylbenzene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
1,2,4-Trimethylbenzene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
sec-Butylbenzene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
1,3-Dichlorobenzene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
p-Isopropyltoluene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
1,4-Dichlorobenzene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
1,2-Dichlorobenzene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
n-Butylbenzene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
1,2-Dibromo-3-chloropropane	ND	0.19	EPA 8260C	8-19-14	8-26-14	
1,2,4-Trichlorobenzene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
Hexachlorobutadiene	ND	0.19	EPA 8260C	8-19-14	8-26-14	
Naphthalene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
1,2,3-Trichlorobenzene	ND	0.038	EPA 8260C	8-19-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*98*	*65-129*				
Toluene-d8	*96*	*77-122*				
4-Bromofluorobenzene	*99*	*73-124*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

VOLATILES EPA 8260C/SIM
Page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BHI-IP-03-SO**					
Laboratory ID:	08-200-05					
Dichlorodifluoromethane	ND	0.067	EPA 8260C	8-20-14	8-26-14	
Chloromethane	ND	0.34	EPA 8260C	8-20-14	8-26-14	
Vinyl Chloride	ND	0.067	EPA 8260C	8-20-14	8-26-14	
Bromomethane	ND	0.067	EPA 8260C	8-20-14	8-26-14	
Chloroethane	ND	0.34	EPA 8260C	8-20-14	8-26-14	
Trichlorofluoromethane	ND	0.067	EPA 8260C	8-20-14	8-26-14	
1,1-Dichloroethene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
Acetone	ND	0.34	EPA 8260C	8-20-14	8-26-14	
Iodomethane	ND	0.34	EPA 8260C	8-20-14	8-26-14	
Carbon Disulfide	ND	0.067	EPA 8260C	8-20-14	8-26-14	
Methylene Chloride	ND	0.34	EPA 8260C	8-20-14	8-26-14	
(trans) 1,2-Dichloroethene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
Methyl t-Butyl Ether	ND	0.067	EPA 8260C	8-20-14	8-26-14	
1,1-Dichloroethane	ND	0.067	EPA 8260C	8-20-14	8-26-14	
Vinyl Acetate	ND	0.34	EPA 8260C	8-20-14	8-26-14	
2,2-Dichloropropane	ND	0.067	EPA 8260C	8-20-14	8-26-14	
(cis) 1,2-Dichloroethene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
2-Butanone	ND	0.34	EPA 8260C	8-20-14	8-26-14	
Bromochloromethane	ND	0.067	EPA 8260C	8-20-14	8-26-14	
Chloroform	ND	0.067	EPA 8260C	8-20-14	8-26-14	
1,1,1-Trichloroethane	ND	0.0044	EPA 8260C/SIM	8-20-14	8-26-14	
Carbon Tetrachloride	ND	0.067	EPA 8260C	8-20-14	8-26-14	
1,1-Dichloropropene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
Benzene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
1,2-Dichloroethane	ND	0.067	EPA 8260C	8-20-14	8-26-14	
Trichloroethene	ND	0.0044	EPA 8260C/SIM	8-20-14	8-26-14	
1,2-Dichloropropane	ND	0.067	EPA 8260C	8-20-14	8-26-14	
Dibromomethane	ND	0.067	EPA 8260C	8-20-14	8-26-14	
Bromodichloromethane	ND	0.067	EPA 8260C	8-20-14	8-26-14	
2-Chloroethyl Vinyl Ether	ND	0.34	EPA 8260C	8-20-14	8-26-14	
(cis) 1,3-Dichloropropene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
Methyl Isobutyl Ketone	ND	0.34	EPA 8260C	8-20-14	8-26-14	
Toluene	ND	0.34	EPA 8260C	8-20-14	8-26-14	
(trans) 1,3-Dichloropropene	ND	0.067	EPA 8260C	8-20-14	8-26-14	

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

VOLATILES EPA 8260C/SIM
Page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BHI-IP-03-SO**					
Laboratory ID:	08-200-05					
1,1,2-Trichloroethane	ND	0.067	EPA 8260C	8-20-14	8-26-14	
Tetrachloroethene	0.071	0.0044	EPA 8260C/SIM	8-20-14	8-26-14	
1,3-Dichloropropane	ND	0.067	EPA 8260C	8-20-14	8-26-14	
2-Hexanone	ND	0.34	EPA 8260C	8-20-14	8-26-14	
Dibromochloromethane	ND	0.067	EPA 8260C	8-20-14	8-26-14	
1,2-Dibromoethane	ND	0.067	EPA 8260C	8-20-14	8-26-14	
Chlorobenzene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
1,1,1,2-Tetrachloroethane	ND	0.067	EPA 8260C	8-20-14	8-26-14	
Ethylbenzene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
m,p-Xylene	ND	0.13	EPA 8260C	8-20-14	8-26-14	
o-Xylene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
Styrene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
Bromoform	ND	0.067	EPA 8260C	8-20-14	8-26-14	
Isopropylbenzene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
Bromobenzene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
1,1,2,2-Tetrachloroethane	ND	0.067	EPA 8260C	8-20-14	8-26-14	
1,2,3-Trichloropropane	ND	0.067	EPA 8260C	8-20-14	8-26-14	
n-Propylbenzene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
2-Chlorotoluene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
4-Chlorotoluene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
1,3,5-Trimethylbenzene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
tert-Butylbenzene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
1,2,4-Trimethylbenzene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
sec-Butylbenzene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
1,3-Dichlorobenzene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
p-Isopropyltoluene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
1,4-Dichlorobenzene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
1,2-Dichlorobenzene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
n-Butylbenzene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
1,2-Dibromo-3-chloropropane	ND	0.34	EPA 8260C	8-20-14	8-26-14	
1,2,4-Trichlorobenzene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
Hexachlorobutadiene	ND	0.34	EPA 8260C	8-20-14	8-26-14	
Naphthalene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
1,2,3-Trichlorobenzene	ND	0.067	EPA 8260C	8-20-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*100*	*65-129*				
Toluene-d8	*96*	*77-122*				
4-Bromofluorobenzene	*101*	*73-124*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

VOLATILES EPA 8260C/SIM
Page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BHI-UT-01-SO**					
Laboratory ID:	08-200-06					
Dichlorodifluoromethane	ND	0.049	EPA 8260C	8-20-14	8-26-14	
Chloromethane	ND	0.25	EPA 8260C	8-20-14	8-26-14	
Vinyl Chloride	ND	0.049	EPA 8260C	8-20-14	8-26-14	
Bromomethane	ND	0.049	EPA 8260C	8-20-14	8-26-14	
Chloroethane	ND	0.25	EPA 8260C	8-20-14	8-26-14	
Trichlorofluoromethane	ND	0.049	EPA 8260C	8-20-14	8-26-14	
1,1-Dichloroethene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
Acetone	ND	0.25	EPA 8260C	8-20-14	8-26-14	
Iodomethane	ND	0.25	EPA 8260C	8-20-14	8-26-14	
Carbon Disulfide	ND	0.049	EPA 8260C	8-20-14	8-26-14	
Methylene Chloride	ND	0.25	EPA 8260C	8-20-14	8-26-14	
(trans) 1,2-Dichloroethene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
Methyl t-Butyl Ether	ND	0.049	EPA 8260C	8-20-14	8-26-14	
1,1-Dichloroethane	ND	0.049	EPA 8260C	8-20-14	8-26-14	
Vinyl Acetate	ND	0.25	EPA 8260C	8-20-14	8-26-14	
2,2-Dichloropropane	ND	0.049	EPA 8260C	8-20-14	8-26-14	
(cis) 1,2-Dichloroethene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
2-Butanone	ND	0.25	EPA 8260C	8-20-14	8-26-14	
Bromochloromethane	ND	0.049	EPA 8260C	8-20-14	8-26-14	
Chloroform	ND	0.049	EPA 8260C	8-20-14	8-26-14	
1,1,1-Trichloroethane	ND	0.0025	EPA 8260C/SIM	8-20-14	8-26-14	
Carbon Tetrachloride	ND	0.049	EPA 8260C	8-20-14	8-26-14	
1,1-Dichloropropene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
Benzene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
1,2-Dichloroethane	ND	0.049	EPA 8260C	8-20-14	8-26-14	
Trichloroethene	ND	0.0025	EPA 8260C/SIM	8-20-14	8-26-14	
1,2-Dichloropropane	ND	0.049	EPA 8260C	8-20-14	8-26-14	
Dibromomethane	ND	0.049	EPA 8260C	8-20-14	8-26-14	
Bromodichloromethane	ND	0.049	EPA 8260C	8-20-14	8-26-14	
2-Chloroethyl Vinyl Ether	ND	0.25	EPA 8260C	8-20-14	8-26-14	
(cis) 1,3-Dichloropropene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
Methyl Isobutyl Ketone	ND	0.25	EPA 8260C	8-20-14	8-26-14	
Toluene	ND	0.25	EPA 8260C	8-20-14	8-26-14	
(trans) 1,3-Dichloropropene	ND	0.049	EPA 8260C	8-20-14	8-26-14	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

VOLATILES EPA 8260C/SIM
Page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BHI-UT-01-SO**					
Laboratory ID:	08-200-06					
1,1,2-Trichloroethane	ND	0.049	EPA 8260C	8-20-14	8-26-14	
Tetrachloroethene	0.0030	0.0025	EPA 8260C/SIM	8-20-14	8-26-14	
1,3-Dichloropropane	ND	0.049	EPA 8260C	8-20-14	8-26-14	
2-Hexanone	ND	0.25	EPA 8260C	8-20-14	8-26-14	
Dibromochloromethane	ND	0.049	EPA 8260C	8-20-14	8-26-14	
1,2-Dibromoethane	ND	0.049	EPA 8260C	8-20-14	8-26-14	
Chlorobenzene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
1,1,1,2-Tetrachloroethane	ND	0.049	EPA 8260C	8-20-14	8-26-14	
Ethylbenzene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
m,p-Xylene	ND	0.099	EPA 8260C	8-20-14	8-26-14	
o-Xylene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
Styrene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
Bromoform	ND	0.049	EPA 8260C	8-20-14	8-26-14	
Isopropylbenzene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
Bromobenzene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
1,1,2,2-Tetrachloroethane	ND	0.049	EPA 8260C	8-20-14	8-26-14	
1,2,3-Trichloropropane	ND	0.049	EPA 8260C	8-20-14	8-26-14	
n-Propylbenzene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
2-Chlorotoluene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
4-Chlorotoluene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
1,3,5-Trimethylbenzene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
tert-Butylbenzene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
1,2,4-Trimethylbenzene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
sec-Butylbenzene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
1,3-Dichlorobenzene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
p-Isopropyltoluene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
1,4-Dichlorobenzene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
1,2-Dichlorobenzene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
n-Butylbenzene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
1,2-Dibromo-3-chloropropane	ND	0.25	EPA 8260C	8-20-14	8-26-14	
1,2,4-Trichlorobenzene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
Hexachlorobutadiene	ND	0.25	EPA 8260C	8-20-14	8-26-14	
Naphthalene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
1,2,3-Trichlorobenzene	ND	0.049	EPA 8260C	8-20-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*96*	*65-129*				
Toluene-d8	*95*	*77-122*				
4-Bromofluorobenzene	*98*	*73-124*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

VOLATILES EPA 8260C/SIM
Page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BHI-UT-02-SO**					
Laboratory ID:	08-200-07					
Dichlorodifluoromethane	ND	0.046	EPA 8260C	8-20-14	8-26-14	
Chloromethane	ND	0.23	EPA 8260C	8-20-14	8-26-14	
Vinyl Chloride	ND	0.046	EPA 8260C	8-20-14	8-26-14	
Bromomethane	ND	0.046	EPA 8260C	8-20-14	8-26-14	
Chloroethane	ND	0.23	EPA 8260C	8-20-14	8-26-14	
Trichlorofluoromethane	ND	0.046	EPA 8260C	8-20-14	8-26-14	
1,1-Dichloroethene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
Acetone	ND	0.23	EPA 8260C	8-20-14	8-26-14	
Iodomethane	ND	0.23	EPA 8260C	8-20-14	8-26-14	
Carbon Disulfide	ND	0.046	EPA 8260C	8-20-14	8-26-14	
Methylene Chloride	ND	0.23	EPA 8260C	8-20-14	8-26-14	
(trans) 1,2-Dichloroethene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
Methyl t-Butyl Ether	ND	0.046	EPA 8260C	8-20-14	8-26-14	
1,1-Dichloroethane	ND	0.046	EPA 8260C	8-20-14	8-26-14	
Vinyl Acetate	ND	0.23	EPA 8260C	8-20-14	8-26-14	
2,2-Dichloropropane	ND	0.046	EPA 8260C	8-20-14	8-26-14	
(cis) 1,2-Dichloroethene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
2-Butanone	ND	0.23	EPA 8260C	8-20-14	8-26-14	
Bromochloromethane	ND	0.046	EPA 8260C	8-20-14	8-26-14	
Chloroform	ND	0.046	EPA 8260C	8-20-14	8-26-14	
1,1,1-Trichloroethane	ND	0.0025	EPA 8260C/SIM	8-20-14	8-26-14	
Carbon Tetrachloride	ND	0.046	EPA 8260C	8-20-14	8-26-14	
1,1-Dichloropropene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
Benzene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
1,2-Dichloroethane	ND	0.046	EPA 8260C	8-20-14	8-26-14	
Trichloroethene	ND	0.0025	EPA 8260C/SIM	8-20-14	8-26-14	
1,2-Dichloropropane	ND	0.046	EPA 8260C	8-20-14	8-26-14	
Dibromomethane	ND	0.046	EPA 8260C	8-20-14	8-26-14	
Bromodichloromethane	ND	0.046	EPA 8260C	8-20-14	8-26-14	
2-Chloroethyl Vinyl Ether	ND	0.23	EPA 8260C	8-20-14	8-26-14	
(cis) 1,3-Dichloropropene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
Methyl Isobutyl Ketone	ND	0.23	EPA 8260C	8-20-14	8-26-14	
Toluene	ND	0.23	EPA 8260C	8-20-14	8-26-14	
(trans) 1,3-Dichloropropene	ND	0.046	EPA 8260C	8-20-14	8-26-14	

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

VOLATILES EPA 8260C/SIM
Page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BHI-UT-02-SO**					
Laboratory ID:	08-200-07					
1,1,2-Trichloroethane	ND	0.046	EPA 8260C	8-20-14	8-26-14	
Tetrachloroethene	0.0094	0.0025	EPA 8260C/SIM	8-20-14	8-26-14	
1,3-Dichloropropane	ND	0.046	EPA 8260C	8-20-14	8-26-14	
2-Hexanone	ND	0.23	EPA 8260C	8-20-14	8-26-14	
Dibromochloromethane	ND	0.046	EPA 8260C	8-20-14	8-26-14	
1,2-Dibromoethane	ND	0.046	EPA 8260C	8-20-14	8-26-14	
Chlorobenzene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
1,1,1,2-Tetrachloroethane	ND	0.046	EPA 8260C	8-20-14	8-26-14	
Ethylbenzene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
m,p-Xylene	ND	0.093	EPA 8260C	8-20-14	8-26-14	
o-Xylene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
Styrene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
Bromoform	ND	0.046	EPA 8260C	8-20-14	8-26-14	
Isopropylbenzene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
Bromobenzene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
1,1,2,2-Tetrachloroethane	ND	0.046	EPA 8260C	8-20-14	8-26-14	
1,2,3-Trichloropropane	ND	0.046	EPA 8260C	8-20-14	8-26-14	
n-Propylbenzene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
2-Chlorotoluene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
4-Chlorotoluene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
1,3,5-Trimethylbenzene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
tert-Butylbenzene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
1,2,4-Trimethylbenzene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
sec-Butylbenzene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
1,3-Dichlorobenzene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
p-Isopropyltoluene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
1,4-Dichlorobenzene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
1,2-Dichlorobenzene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
n-Butylbenzene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
1,2-Dibromo-3-chloropropane	ND	0.23	EPA 8260C	8-20-14	8-26-14	
1,2,4-Trichlorobenzene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
Hexachlorobutadiene	ND	0.23	EPA 8260C	8-20-14	8-26-14	
Naphthalene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
1,2,3-Trichlorobenzene	ND	0.046	EPA 8260C	8-20-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*98*	*65-129*				
Toluene-d8	*95*	*77-122*				
4-Bromofluorobenzene	*122*	*73-124*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

VOLATILES EPA 8260C/SIM
Page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BHI-UT-03-SO**					
Laboratory ID:	08-200-08					
Dichlorodifluoromethane	ND	0.040	EPA 8260C	8-20-14	8-26-14	
Chloromethane	ND	0.20	EPA 8260C	8-20-14	8-26-14	
Vinyl Chloride	ND	0.040	EPA 8260C	8-20-14	8-26-14	
Bromomethane	ND	0.040	EPA 8260C	8-20-14	8-26-14	
Chloroethane	ND	0.20	EPA 8260C	8-20-14	8-26-14	
Trichlorofluoromethane	ND	0.040	EPA 8260C	8-20-14	8-26-14	
1,1-Dichloroethene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
Acetone	ND	0.20	EPA 8260C	8-20-14	8-26-14	
Iodomethane	ND	0.20	EPA 8260C	8-20-14	8-26-14	
Carbon Disulfide	ND	0.040	EPA 8260C	8-20-14	8-26-14	
Methylene Chloride	ND	0.20	EPA 8260C	8-20-14	8-26-14	
(trans) 1,2-Dichloroethene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
Methyl t-Butyl Ether	ND	0.040	EPA 8260C	8-20-14	8-26-14	
1,1-Dichloroethane	ND	0.040	EPA 8260C	8-20-14	8-26-14	
Vinyl Acetate	ND	0.20	EPA 8260C	8-20-14	8-26-14	
2,2-Dichloropropane	ND	0.040	EPA 8260C	8-20-14	8-26-14	
(cis) 1,2-Dichloroethene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
2-Butanone	ND	0.20	EPA 8260C	8-20-14	8-26-14	
Bromochloromethane	ND	0.040	EPA 8260C	8-20-14	8-26-14	
Chloroform	ND	0.040	EPA 8260C	8-20-14	8-26-14	
1,1,1-Trichloroethane	ND	0.0025	EPA 8260C/SIM	8-20-14	8-26-14	
Carbon Tetrachloride	ND	0.040	EPA 8260C	8-20-14	8-26-14	
1,1-Dichloropropene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
Benzene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
1,2-Dichloroethane	ND	0.040	EPA 8260C	8-20-14	8-26-14	
Trichloroethene	ND	0.0025	EPA 8260C/SIM	8-20-14	8-26-14	
1,2-Dichloropropane	ND	0.040	EPA 8260C	8-20-14	8-26-14	
Dibromomethane	ND	0.040	EPA 8260C	8-20-14	8-26-14	
Bromodichloromethane	ND	0.040	EPA 8260C	8-20-14	8-26-14	
2-Chloroethyl Vinyl Ether	ND	0.20	EPA 8260C	8-20-14	8-26-14	
(cis) 1,3-Dichloropropene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
Methyl Isobutyl Ketone	ND	0.20	EPA 8260C	8-20-14	8-26-14	
Toluene	ND	0.20	EPA 8260C	8-20-14	8-26-14	
(trans) 1,3-Dichloropropene	ND	0.040	EPA 8260C	8-20-14	8-26-14	

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

VOLATILES EPA 8260C/SIM
Page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BHI-UT-03-SO**					
Laboratory ID:	08-200-08					
1,1,2-Trichloroethane	ND	0.040	EPA 8260C	8-20-14	8-26-14	
Tetrachloroethene	0.0049	0.0025	EPA 8260C/SIM	8-20-14	8-26-14	
1,3-Dichloropropane	ND	0.040	EPA 8260C	8-20-14	8-26-14	
2-Hexanone	ND	0.20	EPA 8260C	8-20-14	8-26-14	
Dibromochloromethane	ND	0.040	EPA 8260C	8-20-14	8-26-14	
1,2-Dibromoethane	ND	0.040	EPA 8260C	8-20-14	8-26-14	
Chlorobenzene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
1,1,1,2-Tetrachloroethane	ND	0.040	EPA 8260C	8-20-14	8-26-14	
Ethylbenzene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
m,p-Xylene	ND	0.081	EPA 8260C	8-20-14	8-26-14	
o-Xylene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
Styrene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
Bromoform	ND	0.040	EPA 8260C	8-20-14	8-26-14	
Isopropylbenzene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
Bromobenzene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
1,1,2,2-Tetrachloroethane	ND	0.040	EPA 8260C	8-20-14	8-26-14	
1,2,3-Trichloropropane	ND	0.040	EPA 8260C	8-20-14	8-26-14	
n-Propylbenzene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
2-Chlorotoluene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
4-Chlorotoluene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
1,3,5-Trimethylbenzene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
tert-Butylbenzene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
1,2,4-Trimethylbenzene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
sec-Butylbenzene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
1,3-Dichlorobenzene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
p-Isopropyltoluene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
1,4-Dichlorobenzene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
1,2-Dichlorobenzene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
n-Butylbenzene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
1,2-Dibromo-3-chloropropane	ND	0.20	EPA 8260C	8-20-14	8-26-14	
1,2,4-Trichlorobenzene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
Hexachlorobutadiene	ND	0.20	EPA 8260C	8-20-14	8-26-14	
Naphthalene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
1,2,3-Trichlorobenzene	ND	0.040	EPA 8260C	8-20-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*100*	*65-129*				
Toluene-d8	*98*	*77-122*				
4-Bromofluorobenzene	*103*	*73-124*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

VOLATILES EPA 8260C/SIM
Page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**Trip Blank-VOC**					
Laboratory ID:	08-200-10					
Dichlorodifluoromethane	ND	0.050	EPA 8260C	8-13-14	8-26-14	
Chloromethane	ND	0.25	EPA 8260C	8-13-14	8-26-14	
Vinyl Chloride	ND	0.050	EPA 8260C	8-13-14	8-26-14	
Bromomethane	ND	0.050	EPA 8260C	8-13-14	8-26-14	
Chloroethane	ND	0.25	EPA 8260C	8-13-14	8-26-14	
Trichlorofluoromethane	ND	0.050	EPA 8260C	8-13-14	8-26-14	
1,1-Dichloroethene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
Acetone	ND	0.25	EPA 8260C	8-13-14	8-26-14	
Iodomethane	ND	0.25	EPA 8260C	8-13-14	8-26-14	
Carbon Disulfide	ND	0.050	EPA 8260C	8-13-14	8-26-14	
Methylene Chloride	ND	0.25	EPA 8260C	8-13-14	8-26-14	
(trans) 1,2-Dichloroethene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
Methyl t-Butyl Ether	ND	0.050	EPA 8260C	8-13-14	8-26-14	
1,1-Dichloroethane	ND	0.050	EPA 8260C	8-13-14	8-26-14	
Vinyl Acetate	ND	0.25	EPA 8260C	8-13-14	8-26-14	
2,2-Dichloropropane	ND	0.050	EPA 8260C	8-13-14	8-26-14	
(cis) 1,2-Dichloroethene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
2-Butanone	ND	0.25	EPA 8260C	8-13-14	8-26-14	
Bromochloromethane	ND	0.050	EPA 8260C	8-13-14	8-26-14	
Chloroform	ND	0.050	EPA 8260C	8-13-14	8-26-14	
1,1,1-Trichloroethane	ND	0.0025	EPA 8260C/SIM	8-13-14	8-26-14	
Carbon Tetrachloride	ND	0.050	EPA 8260C	8-13-14	8-26-14	
1,1-Dichloropropene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
Benzene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
1,2-Dichloroethane	ND	0.050	EPA 8260C	8-13-14	8-26-14	
Trichloroethene	ND	0.0025	EPA 8260C/SIM	8-13-14	8-26-14	
1,2-Dichloropropane	ND	0.050	EPA 8260C	8-13-14	8-26-14	
Dibromomethane	ND	0.050	EPA 8260C	8-13-14	8-26-14	
Bromodichloromethane	ND	0.050	EPA 8260C	8-13-14	8-26-14	
2-Chloroethyl Vinyl Ether	ND	0.25	EPA 8260C	8-13-14	8-26-14	
(cis) 1,3-Dichloropropene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
Methyl Isobutyl Ketone	ND	0.25	EPA 8260C	8-13-14	8-26-14	
Toluene	ND	0.25	EPA 8260C	8-13-14	8-26-14	
(trans) 1,3-Dichloropropene	ND	0.050	EPA 8260C	8-13-14	8-26-14	

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

VOLATILES EPA 8260C/SIM
Page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**Trip Blank-VOC**					
Laboratory ID:	08-200-10					
1,1,2-Trichloroethane	ND	0.050	EPA 8260C	8-13-14	8-26-14	
Tetrachloroethene	ND	0.0025	EPA 8260C/SIM	8-13-14	8-26-14	
1,3-Dichloropropane	ND	0.050	EPA 8260C	8-13-14	8-26-14	
2-Hexanone	ND	0.25	EPA 8260C	8-13-14	8-26-14	
Dibromochloromethane	ND	0.050	EPA 8260C	8-13-14	8-26-14	
1,2-Dibromoethane	ND	0.050	EPA 8260C	8-13-14	8-26-14	
Chlorobenzene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
1,1,1,2-Tetrachloroethane	ND	0.050	EPA 8260C	8-13-14	8-26-14	
Ethylbenzene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
m,p-Xylene	ND	0.10	EPA 8260C	8-13-14	8-26-14	
o-Xylene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
Styrene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
Bromoform	ND	0.050	EPA 8260C	8-13-14	8-26-14	
Isopropylbenzene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
Bromobenzene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
1,1,2,2-Tetrachloroethane	ND	0.050	EPA 8260C	8-13-14	8-26-14	
1,2,3-Trichloropropane	ND	0.050	EPA 8260C	8-13-14	8-26-14	
n-Propylbenzene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
2-Chlorotoluene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
4-Chlorotoluene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
1,3,5-Trimethylbenzene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
tert-Butylbenzene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
1,2,4-Trimethylbenzene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
sec-Butylbenzene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
1,3-Dichlorobenzene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
p-Isopropyltoluene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
1,4-Dichlorobenzene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
1,2-Dichlorobenzene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
n-Butylbenzene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
1,2-Dibromo-3-chloropropane	ND	0.25	EPA 8260C	8-13-14	8-26-14	
1,2,4-Trichlorobenzene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
Hexachlorobutadiene	ND	0.25	EPA 8260C	8-13-14	8-26-14	
Naphthalene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
1,2,3-Trichlorobenzene	ND	0.050	EPA 8260C	8-13-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*95*	*65-129*				
Toluene-d8	*94*	*77-122*				
4-Bromofluorobenzene	*98*	*73-124*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

VOLATILES EPA 8260C/SIM
METHOD BLANK QUALITY CONTROL
Page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0826S2					
Dichlorodifluoromethane	ND	0.050	EPA 8260C	8-26-14	8-26-14	
Chloromethane	ND	0.25	EPA 8260C	8-26-14	8-26-14	
Vinyl Chloride	ND	0.050	EPA 8260C	8-26-14	8-26-14	
Bromomethane	ND	0.050	EPA 8260C	8-26-14	8-26-14	
Chloroethane	ND	0.25	EPA 8260C	8-26-14	8-26-14	
Trichlorofluoromethane	ND	0.050	EPA 8260C	8-26-14	8-26-14	
1,1-Dichloroethene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
Acetone	ND	0.25	EPA 8260C	8-26-14	8-26-14	
Iodomethane	ND	0.25	EPA 8260C	8-26-14	8-26-14	
Carbon Disulfide	ND	0.050	EPA 8260C	8-26-14	8-26-14	
Methylene Chloride	ND	0.25	EPA 8260C	8-26-14	8-26-14	
(trans) 1,2-Dichloroethene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
Methyl t-Butyl Ether	ND	0.050	EPA 8260C	8-26-14	8-26-14	
1,1-Dichloroethane	ND	0.050	EPA 8260C	8-26-14	8-26-14	
Vinyl Acetate	ND	0.25	EPA 8260C	8-26-14	8-26-14	
2,2-Dichloropropane	ND	0.050	EPA 8260C	8-26-14	8-26-14	
(cis) 1,2-Dichloroethene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
2-Butanone	ND	0.25	EPA 8260C	8-26-14	8-26-14	
Bromochloromethane	ND	0.050	EPA 8260C	8-26-14	8-26-14	
Chloroform	ND	0.050	EPA 8260C	8-26-14	8-26-14	
1,1,1-Trichloroethane	ND	0.0025	EPA 8260C/SIM	8-26-14	8-26-14	
Carbon Tetrachloride	ND	0.050	EPA 8260C	8-26-14	8-26-14	
1,1-Dichloropropene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
Benzene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
1,2-Dichloroethane	ND	0.050	EPA 8260C	8-26-14	8-26-14	
Trichloroethene	ND	0.0025	EPA 8260C/SIM	8-26-14	8-26-14	
1,2-Dichloropropane	ND	0.050	EPA 8260C	8-26-14	8-26-14	
Dibromomethane	ND	0.050	EPA 8260C	8-26-14	8-26-14	
Bromodichloromethane	ND	0.050	EPA 8260C	8-26-14	8-26-14	
2-Chloroethyl Vinyl Ether	ND	0.25	EPA 8260C	8-26-14	8-26-14	
(cis) 1,3-Dichloropropene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
Methyl Isobutyl Ketone	ND	0.25	EPA 8260C	8-26-14	8-26-14	
Toluene	ND	0.25	EPA 8260C	8-26-14	8-26-14	
(trans) 1,3-Dichloropropene	ND	0.050	EPA 8260C	8-26-14	8-26-14	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

VOLATILES EPA 8260C/SIM
METHOD BLANK QUALITY CONTROL
Page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0826S2					
1,1,2-Trichloroethane	ND	0.050	EPA 8260C	8-26-14	8-26-14	
Tetrachloroethene	ND	0.0025	EPA 8260C/SIM	8-26-14	8-26-14	
1,3-Dichloropropane	ND	0.050	EPA 8260C	8-26-14	8-26-14	
2-Hexanone	ND	0.25	EPA 8260C	8-26-14	8-26-14	
Dibromochloromethane	ND	0.050	EPA 8260C	8-26-14	8-26-14	
1,2-Dibromoethane	ND	0.050	EPA 8260C	8-26-14	8-26-14	
Chlorobenzene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
1,1,1,2-Tetrachloroethane	ND	0.050	EPA 8260C	8-26-14	8-26-14	
Ethylbenzene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
m,p-Xylene	ND	0.10	EPA 8260C	8-26-14	8-26-14	
o-Xylene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
Styrene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
Bromoform	ND	0.050	EPA 8260C	8-26-14	8-26-14	
Isopropylbenzene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
Bromobenzene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
1,1,2,2-Tetrachloroethane	ND	0.050	EPA 8260C	8-26-14	8-26-14	
1,2,3-Trichloropropane	ND	0.050	EPA 8260C	8-26-14	8-26-14	
n-Propylbenzene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
2-Chlorotoluene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
4-Chlorotoluene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
1,3,5-Trimethylbenzene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
tert-Butylbenzene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
1,2,4-Trimethylbenzene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
sec-Butylbenzene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
1,3-Dichlorobenzene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
p-Isopropyltoluene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
1,4-Dichlorobenzene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
1,2-Dichlorobenzene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
n-Butylbenzene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
1,2-Dibromo-3-chloropropane	ND	0.25	EPA 8260C	8-26-14	8-26-14	
1,2,4-Trichlorobenzene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
Hexachlorobutadiene	ND	0.25	EPA 8260C	8-26-14	8-26-14	
Naphthalene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
1,2,3-Trichlorobenzene	ND	0.050	EPA 8260C	8-26-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*97*	*65-129*				
Toluene-d8	*96*	*77-122*				
4-Bromofluorobenzene	*100*	*73-124*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

VOLATILES EPA 8260C/SIM
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0826S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0403**	**0.0412**	0.0500	0.0500	81	82	56-141	2	15	
Benzene	**0.0473**	**0.0470**	0.0500	0.0500	95	94	70-121	1	15	
Trichloroethene	**0.0465**	**0.0452**	0.0500	0.0500	93	90	74-118	3	15	
Toluene	**0.0459**	**0.0457**	0.0500	0.0500	92	91	75-120	0	15	
Chlorobenzene	**0.0451**	**0.0448**	0.0500	0.0500	90	90	75-120	1	15	
Surrogate:										
Dibromofluoromethane					*100*	*101*	*65-129*			
Toluene-d8					*98*	*98*	*77-122*			
4-Bromofluorobenzene					*100*	*102*	*73-124*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

GRO AK 101

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BHI-EX-07-SO**					
Laboratory ID:	08-200-01					
Alaska GRO	**ND**	2.9	AK101	8-25-14	8-28-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*50-150*				
Client ID:	**14-BHI-SP-03-SO**					
Laboratory ID:	08-200-02					
Alaska GRO	**350**	31	AK101	8-25-14	8-28-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*69*	*50-150*				
Client ID:	**14-BHI-IP-01-SO**					
Laboratory ID:	08-200-03					
Alaska GRO	**ND**	3.2	AK101	8-25-14	8-28-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*50-150*				
Client ID:	**14-BHI-IP-02-SO**					
Laboratory ID:	08-200-04					
Alaska GRO	**ND**	3.7	AK101	8-25-14	8-28-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*93*	*50-150*				
Client ID:	**14-BHI-IP-03-SO**					
Laboratory ID:	08-200-05					
Alaska GRO	**ND**	8.8	AK101	8-25-14	8-28-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*50-150*				
Client ID:	**14-BHI-UT-01-SO**					
Laboratory ID:	08-200-06					
Alaska GRO	**ND**	6.3	AK101	8-25-14	8-28-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*50-150*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

GRO AK 101

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BHI-UT-02-SO**					
Laboratory ID:	08-200-07					
Alaska GRO	**ND**	4.6	AK101	8-25-14	8-28-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*50-150*				
Client ID:	**14-BHI-UT-03-SO**					
Laboratory ID:	08-200-08					
Alaska GRO	**ND**	7.7	AK101	8-25-14	8-28-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*50-150*				
Client ID:	**Trip Blank-GRO**					
Laboratory ID:	08-200-09					
Alaska GRO	**ND**	5.0	AK101	8-25-14	8-28-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*86*	*50-150*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

GRO AK 101
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0825S1					
Alaska GRO	**ND**	5.0	AK101	8-25-14	8-28-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*85*	*60-120*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-200-01										
	ORIG	DUP									
Alaska GRO	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*90*	*91*	*50-150*			
SPIKE BLANKS											
Laboratory ID:	SBG0825S1										
	SB	SBD	SB	SBD		SB	SBD				
Alaska GRO	**0.200**	**0.207**	0.250	0.250		**80**	**83**	60-120	3	20	
Surrogate:											
Fluorobenzene						*94*	*97*	*50-150*			

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

DRO/RRO
AK 102/103

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BHI-EX-07-SO**					
Laboratory ID:	08-200-01					
Diesel Range Organics	**ND**	11	AK102	8-26-14	8-26-14	
Residual Range Organics	**28**	21	AK103	8-26-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*79*	*50-150*				
Client ID:	**14-BHI-SP-03-SO**					
Laboratory ID:	08-200-02					
Diesel Range Organics	**47000**	1600	AK102	8-26-14	8-27-14	N
Residual Range Organics	**83000**	3200	AK103	8-26-14	8-27-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*---*	*50-150*				S
Client ID:	**14-BHI-IP-01-SO**					
Laboratory ID:	08-200-03					
Diesel Range Organics	**320**	11	AK102	8-26-14	8-26-14	
Residual Range Organics	**970**	21	AK103	8-26-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*102*	*50-150*				
Client ID:	**14-BHI-IP-02-SO**					
Laboratory ID:	08-200-04					
Diesel Range Organics	**32**	11	AK102	8-26-14	8-26-14	
Residual Range Organics	**100**	21	AK103	8-26-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*77*	*50-150*				
Client ID:	**14-BHI-IP-03-SO**					
Laboratory ID:	08-200-05					
Diesel Range Organics	**2600**	120	AK102	8-26-14	8-27-14	
Residual Range Organics	**6200**	250	AK103	8-26-14	8-27-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*---*	*50-150*				S
Client ID:	**14-BHI-UT-01-SO**					
Laboratory ID:	08-200-06					
Diesel Range Organics	**270**	110	AK102	8-26-14	8-26-14	
Residual Range Organics	**660**	210	AK103	8-26-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*---*	*50-150*				S

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

DRO/RRO
AK 102/103

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**14-BHI-UT-02-SO**					
Laboratory ID:	08-200-07					
Diesel Range Organics	**12**	11	AK102	8-26-14	8-26-14	
Residual Range Organics	**41**	22	AK103	8-26-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*72*	*50-150*				
Client ID:	**14-BHI-UT-03-SO**					
Laboratory ID:	08-200-08					
Diesel Range Organics	**ND**	11	AK102	8-26-14	8-26-14	
Residual Range Organics	**ND**	21	AK103	8-26-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

DRO/RRO
AK 102/103
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0826S1					
Diesel Range Organics	**ND**	10	AK102	8-26-14	8-26-14	
Residual Range Organics	**ND**	20	AK103	8-26-14	8-26-14	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*82*	*60-120*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	SB0826S1										
	ORIG	DUP									
Diesel Range Organics	**88.4**	**96.6**	100	100		88	97	75-120	9	20	
Residual Range Organics	**87.9**	**90.7**	100	100		88	91	75-120	3	20	
Surrogate:											
o-Terphenyl						*107*	*112*	*60-120*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 29, 2014
Samples Submitted: August 22, 2014
Laboratory Reference: 1408-200
Project: 20275.002.05

% MOISTURE

Date Analyzed: 8-25-14

Client ID	Lab ID	% Moisture
14-BHI-EX-07-SO	08-200-01	5
14-BHI-SP-03-SO	08-200-02	37
14-BHI-IP-01-SO	08-200-03	6
14-BHI-IP-02-SO	08-200-04	6
14-BHI-IP-03-SO	08-200-05	19
14-BHI-UT-01-SO	08-200-06	5
14-BHI-UT-02-SO	08-200-07	10
14-BHI-UT-03-SO	08-200-08	5

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Chain of Custody

Page 1 of 1

Laboratory Number: 08-200

Company: Ahtna Engineering
Project Number: 20275.002.05
Project Name: Baker Hughes Nikiski
Project Manager: Dan Frank
Sampled by: Dan Frank

Turnaround Request (in working days) (Check One)
- ☐ Same Day ☐ 1 Day
- ☐ 2 Days ☐ 3 Days
- ☒ Standard (7 Days) (TPH analysis 5 Days)
- ☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	AK101	AK102/103				% Moisture
1	14-BHI-EX-07-SO	8/19/14	0910	Soil	3					X												X	X				X
2	14-BHI-SP-03-SO		1335		3					X												X	X				X
3	14-BHI-IP-01-SO		1340		3					X												X	X				X
4	14-BHI-IP-02-SO		1405		3					X												X	X				X
5	14-BHI-IP-03-SO	8/20/14	1400		3					X												X	X				X
6	14-BHI-UT-01-SO		1425		3					X(1)												X	X				X
7	14-BHI-UT-02-SO		1430		3					X(1)												X	X				X
8	14-BHI-UT-03-SO		1435		3					X(1)												X	X				X
9	Trip Blank - GRO	Lab assigned								~~X~~												X					X
10	Trip Blank - VOC	Lab assigned								X(1)																	X

	Signature	Company	Date	Time
Relinquished	[signature]	Ahtna	8/21/14	0930
Received	Alex Dermontzoff	OSE	8/22/14	955
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions:
All VOCs = low level for TCE, TCA, PCE
(1) VOCs = 1,2 DCA & EDB

Chromatograms with final report ☒

Data Package: Standard ☒ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

Laboratory Report of Analysis

To: Ahtna Engineering Svs
560 E. 34th Ave
Anchorage, AK 99503
(907)433-0727

Report Number: **1144058**

Client Project: **Nikiski**

Dear Dan Frank,

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

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

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

Sincerely,
SGS North America Inc.

_____

Justin Nelson Date
Project Manager
Justin.Nelson@sgs.com

Print Date: 09/15/2014 8:41:28AM

Case Narrative

SGS Client: **Ahtna Engineering Svs**
SGS Project: **1144058**
Project Name/Site: **Nikiski**
Project Contact: **Dan Frank**

Refer to sample receipt form for information on sample condition.

LCSD for HBN 1634768 [XXX/3189 (1231455) LCSD

8270D - LCS/LCSD RPD for several analytes does not meet QC criteria. These analytes were not detected above the LOQ in the associated samples.

LCSD for HBN 1635063 [VXX/2638 (1231541) LCSD

8260B - LCS/LCSD RPD for chloroethane does not meet QC criteria. This analyte was not detected above the LOQ in the associated samples.

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

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Member of SGS Group

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. If you have any questions regarding this report, or if we can be of any other assistance, please contact your SGS Project Manager at 907-562-2343. All work is provided under SGS general terms and conditions (<http://www.sgs.com/terms_and_conditions.htm>), unless other written agreements have been accepted by both parties.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020A, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035B, 6020, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040B, 9045C, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

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

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV	Continuing Calibration Verification
CL	Control Limit
D	The analyte concentration is the result of a dilution.
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
F	Indicates value that is greater than or equal to the DL
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
JL	The analyte was positively identified, but the quantitation is a low estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
M	A matrix effect was present.
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
Q	QC parameter out of acceptance range.
R	Rejected
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

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

SGS North America Inc. 200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Member of SGS Group

Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
14-BHI-CON-02	1144058001	08/21/2014	08/29/2014	Solid/Soil (Wet Weight)

Method	Method Description
SW6020A TCLP	Metals by ICP-MS
SW8270D TCLP	Semi-Volatile TCLP Liq/Liq
SW8260B TCLP	TCLP Volatile Organic Compounds 8260

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Member of SGS Group

Detectable Results Summary

Client Sample ID: **14-BHI-CON-02**
Lab Sample ID: 1144058001

TCLP Constituents Metals

Parameter	Result	Units
Barium	0.209	mg/L

Print Date: 09/15/2014 8:41:32AM

Results of **14-BHI-CON-02**

Client Sample ID: **14-BHI-CON-02**
Client Project ID: **Nikiski**
Lab Sample ID: 1144058001
Lab Project ID: 1144058

Collection Date: 08/21/14 09:45
Received Date: 08/29/14 15:25
Matrix: Solid/Soil (Wet Weight)
Solids (%):
Location:

Results by **TCLP Constituents Metals**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Arsenic	0.125	U	0.250	0.0750	mg/L	25	(<5)	09/04/14 08:40
Barium	0.209		0.150	0.0470	mg/L	25	(<100)	09/04/14 08:40
Cadmium	0.0500	U	0.100	0.0310	mg/L	25	(<1)	09/04/14 08:40
Chromium	0.100	U	0.200	0.0600	mg/L	25	(<5)	09/04/14 08:40
Lead	0.0250	U	0.0500	0.0155	mg/L	25	(<5)	09/04/14 08:40
Mercury	0.00500	U	0.0100	0.00310	mg/L	25	(<0.2)	09/04/14 08:40
Selenium	0.500	U	1.00	0.310	mg/L	25	(<1)	09/04/14 08:40
Silver	0.0500	U	0.100	0.0310	mg/L	25	(<5)	09/04/14 08:40

Batch Information

Analytical Batch: MMS8666
Analytical Method: SW6020A TCLP
Analyst: CDE
Analytical Date/Time: 09/04/14 08:40
Container ID: 1144058001-A

Prep Batch: MXT5119
Prep Method: SW3010A
Prep Date/Time: 09/03/14 10:55
Prep Initial Wt./Vol.: 2.5 mL
Prep Extract Vol: 25 mL

Print Date: 09/15/2014 8:41:33AM

Results of **14-BHI-CON-02**

Client Sample ID: **14-BHI-CON-02**
Client Project ID: **Nikiski**
Lab Sample ID: 1144058001
Lab Project ID: 1144058

Collection Date: 08/21/14 09:45
Received Date: 08/29/14 15:25
Matrix: Solid/Soil (Wet Weight)
Solids (%):
Location:

Results by **TCLP Semivolatile Organic GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
2,4,5-Trichlorophenol	0.00500	U	0.0100	0.00310	mg/L	1	(<400)	09/11/14 05:56
2,4,6-Trichlorophenol	0.00500	U	0.0100	0.00310	mg/L	1	(<2)	09/11/14 05:56
2,4-Dinitrotoluene	0.00500	U	0.0100	0.00310	mg/L	1	(<0.13)	09/11/14 05:56
2-Methylphenol (o-Cresol)	0.00500	U	0.0100	0.00310	mg/L	1	(<200)	09/11/14 05:56
3&4-Methylphenol (p&m-Cresol)	0.0100	U	0.0200	0.00620	mg/L	1	(<200)	09/11/14 05:56
Hexachlorobenzene	0.00500	U	0.0100	0.00310	mg/L	1	(<0.13)	09/11/14 05:56
Hexachlorobutadiene	0.00500	U	0.0100	0.00310	mg/L	1	(<0.5)	09/11/14 05:56
Hexachloroethane	0.00500	U	0.0100	0.00310	mg/L	1	(<3)	09/11/14 05:56
Nitrobenzene	0.00500	U	0.0100	0.00310	mg/L	1	(<2)	09/11/14 05:56
Pentachlorophenol	0.0250	U	0.0500	0.0150	mg/L	1	(<100)	09/11/14 05:56
Pyridine	0.0100	U	0.0200	0.00620	mg/L	1	(<5)	09/11/14 05:56
Surrogates								
2,4,6-Tribromophenol	102		40-125		%	1		09/11/14 05:56
2-Fluorobiphenyl	84.9		50-110		%	1		09/11/14 05:56
2-Fluorophenol	56.8		20-110		%	1		09/11/14 05:56
Nitrobenzene-d5	77		40-110		%	1		09/11/14 05:56
Phenol-d6	62.4		10-115		%	1		09/11/14 05:56
Terphenyl-d14	97		50-135		%	1		09/11/14 05:56

Batch Information

Analytical Batch: XMS8278
Analytical Method: SW8270D TCLP
Analyst: DSH
Analytical Date/Time: 09/11/14 05:56
Container ID: 1144058001-A

Prep Batch: XXX31897
Prep Method: SW3520C
Prep Date/Time: 09/04/14 09:05
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

Print Date: 09/15/2014 8:41:33AM

Results of **14-BHI-CON-02**

Client Sample ID: **14-BHI-CON-02**
Client Project ID: **Nikiski**
Lab Sample ID: 1144058001
Lab Project ID: 1144058

Collection Date: 08/21/14 09:45
Received Date: 08/29/14 15:25
Matrix: Solid/Soil (Wet Weight)
Solids (%):
Location:

Results by **TCLP Volatiles GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1-Dichloroethene	0.0250	U	0.0500	0.0155	mg/L	50	(<0.7)	09/03/14 21:32
1,2-Dichloroethane	0.0125	U	0.0250	0.00750	mg/L	50	(<0.5)	09/03/14 21:32
1,4-Dichlorobenzene	0.0125	U	0.0250	0.00750	mg/L	50	(<7.5)	09/03/14 21:32
2-Butanone (MEK)	0.250	U	0.500	0.155	mg/L	50	(<200)	09/03/14 21:32
Benzene	0.0100	U	0.0200	0.00600	mg/L	50	(<0.5)	09/03/14 21:32
Carbon tetrachloride	0.0250	U	0.0500	0.0155	mg/L	50	(<0.5)	09/03/14 21:32
Chlorobenzene	0.0125	U	0.0250	0.00750	mg/L	50	(<100)	09/03/14 21:32
Chloroform	0.0250	U	0.0500	0.0150	mg/L	50	(<6)	09/03/14 21:32
Hexachlorobutadiene	0.0250	U	0.0500	0.0155	mg/L	50	(<0.5)	09/03/14 21:32
Tetrachloroethene	0.0250	U	0.0500	0.0155	mg/L	50	(<0.7)	09/03/14 21:32
Trichloroethene	0.0250	U	0.0500	0.0155	mg/L	50	(<0.5)	09/03/14 21:32
Vinyl chloride	0.0250	U	0.0500	0.0155	mg/L	50	(<0.2)	09/03/14 21:32
Surrogates								
1,2-Dichloroethane-D4	102		70-120		%	50		09/03/14 21:32
4-Bromofluorobenzene	106		75-120		%	50		09/03/14 21:32
Toluene-d8	99.5		85-120		%	50		09/03/14 21:32

Batch Information

Analytical Batch: VMS14424
Analytical Method: SW8260B TCLP
Analyst: NRB
Analytical Date/Time: 09/03/14 21:32
Container ID: 1144058001-A

Prep Batch: VXX26387
Prep Method: SW5030B
Prep Date/Time: 09/03/14 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/15/2014 8:41:33AM

Method Blank

Blank ID: LB1 for HBN 1633362 [TCLP/7494
Blank Lab ID: 1231178

QC for Samples:
1144058001

Matrix: Solid/Soil (Wet Weight)

Results by **SW6020A TCLP**

Parameter	Results	LOQ/CL	DL	Units
Arsenic	0.0500U	0.100	0.0300	mg/L
Barium	0.0300U	0.0600	0.0188	mg/L
Cadmium	0.0200U	0.0400	0.0124	mg/L
Chromium	0.0400U	0.0800	0.0240	mg/L
Lead	0.0100U	0.0200	0.00620	mg/L
Mercury	0.00200U	0.00400	0.00124	mg/L
Selenium	0.200U	0.400	0.124	mg/L
Silver	0.0200U	0.0400	0.0124	mg/L

Batch Information

Analytical Batch: MMS8666
Analytical Method: SW6020A TCLP
Instrument: Perkin Elmer Sciex ICP-MS P3
Analyst: CDE
Analytical Date/Time: 9/4/2014 8:35:19AM

Prep Batch: MXT5119
Prep Method: SW3010A
Prep Date/Time: 9/3/2014 10:55:00AM
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Member of SGS Group

Method Blank

Blank ID: MB for HBN 1633462 [MXT/5119]
Blank Lab ID: 1231217

QC for Samples:
1144058001

Matrix: Water (Surface, Eff., Ground)

Results by **SW6020A TCLP**

Parameter	Results	LOQ/CL	DL	Units
Arsenic	0.0125U	0.0250	0.00750	mg/L
Barium	0.00750U	0.0150	0.00470	mg/L
Cadmium	0.00500U	0.0100	0.00300	mg/L
Chromium	0.0100U	0.0200	0.00600	mg/L
Lead	0.00250U	0.00500	0.00155	mg/L
Mercury	0.000500U	0.00100	0.000310	mg/L
Selenium	0.0500U	0.100	0.0310	mg/L
Silver	0.00500U	0.0100	0.00310	mg/L

Batch Information

Analytical Batch: MMS8666
Analytical Method: SW6020A TCLP
Instrument: Perkin Elmer Sciex ICP-MS P3
Analyst: CDE
Analytical Date/Time: 9/4/2014 8:32:57AM

Prep Batch: MXT5119
Prep Method: SW3010A
Prep Date/Time: 9/3/2014 10:55:00AM
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Member of SGS Group

Blank Spike Summary

Blank Spike ID: LCS for HBN 1144058 [MXT5119]
Blank Spike Lab ID: 1231218
Date Analyzed: 09/04/2014 08:37

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1144058001

Results by **SW6020A TCLP**

	Blank Spike (mg/L)			
Parameter	Spike	Result	Rec (%)	CL
Arsenic	1	0.999	100	(80-120)
Barium	1	1.03	103	(80-120)
Cadmium	0.1	0.105	105	(80-120)
Chromium	0.4	0.401	100	(80-120)
Lead	1	1.07	107	(80-120)
Mercury	0.01	0.00985	99	(80-120)
Selenium	1	1.03	103	(80-120)
Silver	0.1	0.0924	92	(80-120)

Batch Information

Analytical Batch: **MMS8666**
Analytical Method: **SW6020A TCLP**
Instrument: **Perkin Elmer Sciex ICP-MS P3**
Analyst: **CDE**

Prep Batch: **MXT5119**
Prep Method: **SW3010A**
Prep Date/Time: **09/03/2014 10:55**
Spike Init Wt./Vol.: 1 mg/L Extract Vol: 25 mL
Dup Init Wt./Vol.: Extract Vol:

Print Date: 09/15/2014 8:41:36AM

Matrix Spike Summary

Original Sample ID: 1144058001
MS Sample ID: 1231220 MS
MSD Sample ID: 1231221 MSD

QC for Samples: 1144058001

Analysis Date: 09/04/2014 8:40
Analysis Date: 09/04/2014 8:42
Analysis Date: 09/04/2014 8:44
Matrix: Solid/Soil (Wet Weight)

Results by **SW6020A TCLP**

		Matrix Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Arsenic	0.125U	10.0	9.94	99	10.0	10.1	101	80-120	1.39	(< 30)
Barium	0.209	10.0	10.5	102	10.0	10.6	104	80-120	1.04	(< 30)
Cadmium	0.0500U	1.00	1.06	106	1.00	1.07	107	80-120	0.89	(< 30)
Chromium	0.100U	4.00	3.97	99	4.00	4.03	101	80-120	1.58	(< 30)
Lead	0.0250U	10.0	10.7	107	10.0	10.7	107	80-120	0.38	(< 30)
Mercury	0.00500U	0.100	.0888	89	0.100	0.0983	98	80-120	10.20	(< 30)
Selenium	0.500U	10.0	10.3	103	10.0	10.2	102	80-120	0.75	(< 30)
Silver	0.0500U	1.00	.921	92	1.00	0.919	92	80-120	0.21	(< 30)

Batch Information

Analytical Batch: MMS8666
Analytical Method: SW6020A TCLP
Instrument: Perkin Elmer Sciex ICP-MS P3
Analyst: CDE
Analytical Date/Time: 9/4/2014 8:42:25AM

Prep Batch: MXT5119
Prep Method: Waters Digest for Metals by ICP-MS(TCLP)
Prep Date/Time: 9/3/2014 10:55:00AM
Prep Initial Wt./Vol.: 2.50mL
Prep Extract Vol: 25.00mL

Print Date: 09/15/2014 8:41:37AM

Method Blank

Blank ID: MB for HBN 1635063 [VXX/26387]
Blank Lab ID: 1231539

QC for Samples:
1144058001

Matrix: Water (Surface, Eff., Ground)

Results by **SW8260B TCLP**

Parameter	Results	LOQ/CL	DL	Units
1,1-Dichloroethene	0.000500U	0.00100	0.000310	mg/L
1,2-Dichloroethane	0.000250U	0.000500	0.000150	mg/L
1,4-Dichlorobenzene	0.000250U	0.000500	0.000150	mg/L
2-Butanone (MEK)	0.00500U	0.0100	0.00310	mg/L
Benzene	0.000200U	0.000400	0.000120	mg/L
Carbon tetrachloride	0.000500U	0.00100	0.000310	mg/L
Chlorobenzene	0.000250U	0.000500	0.000150	mg/L
Chloroform	0.000500U	0.00100	0.000300	mg/L
Hexachlorobutadiene	0.000500U	0.00100	0.000310	mg/L
Tetrachloroethene	0.000500U	0.00100	0.000310	mg/L
Trichloroethene	0.000500U	0.00100	0.000310	mg/L
Vinyl chloride	0.000500U	0.00100	0.000310	mg/L
Surrogates				
1,2-Dichloroethane-D4	96	70-120		%
4-Bromofluorobenzene	103	75-120		%
Toluene-d8	101	85-120		%

Batch Information

Analytical Batch: VMS14424
Analytical Method: SW8260B TCLP
Instrument: HP 5890 Series II MS3 VNA
Analyst: NRB
Analytical Date/Time: 9/3/2014 2:34:00PM

Prep Batch: VXX26387
Prep Method: SW5030B
Prep Date/Time: 9/3/2014 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Member of SGS Group

Leaching Blank

Blank ID: LB for HBN 1633561 [TCLP/7498]
Blank Lab ID: 1231237

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1144058001

Results by **SW8260B TCLP**

Parameter	Results	LOQ/CL	DL	Units
1,1-Dichloroethene	0.0250U	0.0500	0.0155	mg/L
1,2-Dichloroethane	0.0125U	0.0250	0.00750	mg/L
1,4-Dichlorobenzene	0.0125U	0.0250	0.00750	mg/L
2-Butanone (MEK)	0.250U	0.500	0.155	mg/L
Benzene	0.0100U	0.0200	0.00600	mg/L
Carbon tetrachloride	0.0250U	0.0500	0.0155	mg/L
Chlorobenzene	0.0125U	0.0250	0.00750	mg/L
Chloroform	0.0250U	0.0500	0.0150	mg/L
Hexachlorobutadiene	0.0250U	0.0500	0.0155	mg/L
Tetrachloroethene	0.0250U	0.0500	0.0155	mg/L
Trichloroethene	0.0250U	0.0500	0.0155	mg/L
Vinyl chloride	0.0250U	0.0500	0.0155	mg/L
Surrogates				
1,2-Dichloroethane-D4	104	70-120		%
4-Bromofluorobenzene	110	75-120		%
Toluene-d8	95.5	85-120		%

Batch Information

Analytical Batch: VMS14424
Analytical Method: SW8260B TCLP
Instrument: HP 5890 Series II MS3 VNA
Analyst: NRB
Analytical Date/Time: 9/3/2014 7:05:00PM

Prep Batch: VXX26387
Prep Method: SW5030B
Prep Date/Time: 9/3/2014 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Member of SGS Group

Blank Spike Summary

Blank Spike ID: LCS for HBN 1144058 [VXX26387]
Blank Spike Lab ID: 1231540
Date Analyzed: 09/03/2014 17:12

Spike Duplicate ID: LCSD for HBN 1144058 [VXX26387]
Spike Duplicate Lab ID: 1231541
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1144058001

Results by **SW8260B TCLP**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1-Dichloroethene	0.0300	0.0292	97	0.0300	0.0269	90	(70-130)	8.10	(< 20)
1,2-Dichloroethane	0.0300	0.0282	94	0.0300	0.0274	91	(70-130)	2.80	(< 20)
1,4-Dichlorobenzene	0.0300	0.0296	99	0.0300	0.0299	100	(75-125)	1.20	(< 20)
2-Butanone (MEK)	0.0900	0.0806	90	0.0900	0.0809	90	(30-150)	0.28	(< 20)
Benzene	0.0300	0.0310	103	0.0300	0.0293	98	(80-120)	5.80	(< 20)
Carbon tetrachloride	0.0300	0.0321	107	0.0300	0.0313	104	(65-140)	2.50	(< 20)
Chlorobenzene	0.0300	0.0290	97	0.0300	0.0295	98	(80-120)	1.70	(< 20)
Chloroform	0.0300	0.0288	96	0.0300	0.0288	96	(65-135)	0.04	(< 20)
Hexachlorobutadiene	0.0300	0.0319	106	0.0300	0.0298	99	(50-140)	6.60	(< 20)
Tetrachloroethene	0.0300	0.0319	106	0.0300	0.0325	108	(45-150)	2.10	(< 20)
Trichloroethene	0.0300	0.0298	99	0.0300	0.0290	97	(70-125)	2.60	(< 20)
Vinyl chloride	0.0300	0.0312	104	0.0300	0.0292	97	(50-145)	6.70	(< 20)
Surrogates									
1,2-Dichloroethane-D4	0.0300		100	0.0300		94	(70-120)	6.80	
4-Bromofluorobenzene	0.0300		92	0.0300		98	(75-120)	5.40	
Toluene-d8	0.0300		97	0.0300		98	(85-120)	1.90	

Batch Information

Analytical Batch: **VMS14424**
Analytical Method: **SW8260B TCLP**
Instrument: **HP 5890 Series II MS3 VNA**
Analyst: **NRB**

Prep Batch: **VXX26387**
Prep Method: **SW5030B**
Prep Date/Time: **09/03/2014 06:00**
Spike Init Wt./Vol.: 0.0300 mg/L Extract Vol: 5 mL
Dup Init Wt./Vol.: 0.0300 mg/L Extract Vol: 5 mL

Print Date: 09/15/2014 8:41:41AM

Method Blank

Blank ID: MB for HBN 1634768 [XXX/31897]
Blank Lab ID: 1231453

QC for Samples:
1144058001

Matrix: Water (Surface, Eff., Ground)

Results by **SW8270D TCLP**

Parameter	Results	LOQ/CL	DL	Units
2,4,5-Trichlorophenol	0.00500U	0.0100	0.00310	mg/L
2,4,6-Trichlorophenol	0.00500U	0.0100	0.00310	mg/L
2,4-Dinitrotoluene	0.00500U	0.0100	0.00310	mg/L
2-Methylphenol (o-Cresol)	0.00500U	0.0100	0.00310	mg/L
3&4-Methylphenol (p&m-Cresol)	0.0100U	0.0200	0.00620	mg/L
Hexachlorobenzene	0.00500U	0.0100	0.00310	mg/L
Hexachlorobutadiene	0.00500U	0.0100	0.00310	mg/L
Hexachloroethane	0.00500U	0.0100	0.00310	mg/L
Nitrobenzene	0.00500U	0.0100	0.00310	mg/L
Pentachlorophenol	0.0250U	0.0500	0.0150	mg/L
Pyridine	0.0100U	0.0200	0.00620	mg/L
Surrogates				
2,4,6-Tribromophenol	93.9	40-125		%
2-Fluorobiphenyl	71.5	50-110		%
2-Fluorophenol	55.3	20-110		%
Nitrobenzene-d5	65.1	40-110		%
Phenol-d6	58.1	10-115		%
Terphenyl-d14	96.4	50-135		%

Batch Information

Analytical Batch: XMS8278
Analytical Method: SW8270D TCLP
Instrument: HP 6890/5973 SSA
Analyst: DSH
Analytical Date/Time: 9/10/2014 6:58:00PM

Prep Batch: XXX31897
Prep Method: SW3520C
Prep Date/Time: 9/4/2014 9:05:44AM
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Member of SGS Group

Leaching Blank

Blank ID: LB for HBN 1634463 [TCLP/7500]
Blank Lab ID: 1231364

Matrix: Solid/Soil (Wet Weight)

QC for Samples:
1144058001

Results by **SW8270D TCLP**

Parameter	Results	LOQ/CL	DL	Units
2,4,5-Trichlorophenol	0.00515U	0.0103	0.00320	mg/L
2,4,6-Trichlorophenol	0.00515U	0.0103	0.00320	mg/L
2,4-Dinitrotoluene	0.00515U	0.0103	0.00320	mg/L
2-Methylphenol (o-Cresol)	0.00515U	0.0103	0.00320	mg/L
3&4-Methylphenol (p&m-Cresol)	0.0103U	0.0206	0.00639	mg/L
Hexachlorobenzene	0.00515U	0.0103	0.00320	mg/L
Hexachlorobutadiene	0.00515U	0.0103	0.00320	mg/L
Hexachloroethane	0.00515U	0.0103	0.00320	mg/L
Nitrobenzene	0.00515U	0.0103	0.00320	mg/L
Pentachlorophenol	0.0257U	0.0515	0.0155	mg/L
Pyridine	0.0103U	0.0206	0.00639	mg/L
Surrogates				
2,4,6-Tribromophenol	103	40-125		%
2-Fluorobiphenyl	81	50-110		%
2-Fluorophenol	56.3	20-110		%
Nitrobenzene-d5	76.1	40-110		%
Phenol-d6	52.2	10-115		%
Terphenyl-d14	103	50-135		%

Batch Information

Analytical Batch: XMS8278
Analytical Method: SW8270D TCLP
Instrument: HP 6890/5973 SSA
Analyst: DSH
Analytical Date/Time: 9/10/2014 6:41:00PM

Prep Batch: XXX31897
Prep Method: SW3520C
Prep Date/Time: 9/4/2014 9:05:44AM
Prep Initial Wt./Vol.: 970 mL
Prep Extract Vol: 1 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Member of SGS Group

Blank Spike Summary

Blank Spike ID: LCS for HBN 1144058 [XXX31897]
Blank Spike Lab ID: 1231454
Date Analyzed: 09/10/2014 20:05

Spike Duplicate ID: LCSD for HBN 1144058 [XXX31897]
Spike Duplicate Lab ID: 1231455
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1144058001

Results by **SW8270D TCLP**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
2,4,5-Trichlorophenol	0.1	0.0924	92	0.1	0.0873	87	(50-110)	5.70	(< 20)
2,4,6-Trichlorophenol	0.1	0.0881	88	0.1	0.0839	84	(50-115)	4.90	(< 20)
2,4-Dinitrotoluene	0.1	0.103	103	0.1	0.0976	98	(50-120)	5.00	(< 20)
2-Methylphenol (o-Cresol)	0.1	0.0693	69	0.1	0.0577	58	(40-110)	18.30	(< 20)
3&4-Methylphenol (p&m-Cresol)	0.14	0.115	82	0.14	0.0969	69	(30-110)	17.20	(< 20)
Hexachlorobenzene	0.1	0.0983	98	0.1	0.0987	99	(50-110)	0.41	(< 20)
Hexachlorobutadiene	0.1	0.0760	76	0.1	0.0591	59	(25-105)	25.20	* (< 20)
Hexachloroethane	0.1	0.0616	62	0.1	0.0492	49	(30-100)	22.50	* (< 20)
Nitrobenzene	0.1	0.0727	73	0.1	0.0649	65	(45-110)	11.40	(< 20)
Pentachlorophenol	0.14	0.149	107	0.14	0.144	103	(40-115)	3.80	(< 20)
Pyridine	0.1	0.0453	45	0.1	0.0337	34	(10-76)	29.50	* (< 20)
Surrogates									
2,4,6-Tribromophenol	0.2		109	0.2		105	(40-125)	3.50	
2-Fluorobiphenyl	0.1		76	0.1		73	(50-110)	4.70	
2-Fluorophenol	0.2		60	0.2		51	(20-110)	15.10	
Nitrobenzene-d5	0.1		73	0.1		64	(40-110)	13.20	
Phenol-d6	0.2		66	0.2		57	(10-115)	15.10	
Terphenyl-d14	0.1		98	0.1		103	(50-135)	4.90	

Batch Information

Analytical Batch: **XMS8278**
Analytical Method: **SW8270D TCLP**
Instrument: **HP 6890/5973 SSA**
Analyst: **DSH**

Prep Batch: **XXX31897**
Prep Method: **SW3520C**
Prep Date/Time: **09/04/2014 09:05**
Spike Init Wt./Vol.: 0.1 mg/L Extract Vol: 1 mL
Dup Init Wt./Vol.: 0.1 mg/L Extract Vol: 1 mL

Print Date: 09/15/2014 8:41:44AM

SGS

SGS North America I
CHAIN OF CUSTODY RE

1144058

Locations Nationwide
Alaska, Maryland, New Jersey, New York, North Carolina, Indiana, West Virgina, Kentucky
www.us.sgs.com

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

Page 1 of 1

Section 1

CLIENT: Ahtna

CONTACT: Dan Frank
PHONE NO: 907-350-4897

PROJECT NAME: Nikiski
PROJECT/ PWSID/ PERMIT#: BHI

REPORTS TO: Dan Frank
E-MAIL: dfrank@ahtna.net

INVOICE TO: Dan Frank
QUOTE #:
P.O. #: 20275.002.05

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	# CONTAINERS	Type C = COMP G = GRAB MI = Multi Incremental Soils	Preservative: RCRA 8	Preservative: VOCs TCLP	Preservative: SVOCs								REMARKS/ LOC ID
1 A	M-BHI-CON-02	08/21/14	0945		1												

Section 5

Relinquished By:	Date	Time	Received By:
(1) [signature]	8/25/14	1525	
(2)			
(3)			
(4)	8/25/14	1525	Received For Laboratory By: [signature]

Section 4

DOD Project? Yes No

Data Deliverable Requirements:

Cooler ID:

Requested Turnaround Time and/or Special Instructions: Standard

Temp Blank °C:
or Ambient [ ]
(See attached Sample Receipt Form)

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT
(See attached Sample Receipt Form)

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

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

SGS

1144058

SAMPLE RECEIPT FORM

Review Criteria:	Condition:	Comments/Action Taken:
Were **custody seals** intact? Note # & location, if applicable. COC accompanied samples?	Yes No N/A Yes No	☐ *Exemption permitted if sampler hand carries/delivers.*
Temperature blank compliant* (i.e., 0-6°C after CF)? *If >6°C, were samples collected <8 hours ago?* *If <0°C, were all sample containers ice free?* Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ If samples are received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "**COOLER TEMP**" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled."	Yes No Yes No N/A Yes No N/A	☐ *Exemption permitted if chilled & collected <8 hrs ago.* TCLP work *Note: Identify containers received at non-compliant temperature. Use form FS-0029 if more space is needed.*
Delivery method (specify all that apply): Client (hand carried) USPS Lynden AK Air Alert Courier UPS FedEx RAVN C&D Delivery Carlile Pen Air Warp Speed Other: _____ → *For WO# with airbills, was the WO# & airbill info recorded in the Front Counter eLog?*	Tracking/AB # or see attached or N/A Yes No N/A	
→ For samples received with payment, note amount ($) and whether cash / check / CC (**circle one**) was received. → For samples **received in FBKS**, ANCH staff will verify all criteria are reviewed. SRF initiated in FBKS by:		
Were samples received within hold time? Do samples **match COC*** (i.e., sample IDs, dates/times collected)? Were analyses requested unambiguous?	Yes No N/A Yes No N/A Yes No N/A	*Note: Refer to form F-083 "Sample Guide" for hold times.* *Note: If times differ <1hr, record details and login per COC.*
Were samples in **good condition** (no leaks/cracks/breakage)? Packing material used (specify all that apply): Bubble Wrap Separate plastic bags Vermiculite Other:	Yes No	None
Were **proper containers** (type/mass/volume/preservative*) used? Were **Trip Blanks** (i.e., VOAs, LL-Hg) in cooler with samples? Were all VOA vials **free of headspace** (i.e., bubbles ≤6 mm)? Were all soil VOAs **field extracted** with MeOH+BFB?	Yes No N/A Yes No N/A Yes No N/A Yes No N/A	☐ *Exemption permitted for metals (e.g., 200.8/6020A).*
For preserved waters (other than VOA vials, LL-Mercury or microbiological analyses), was **pH verified and compliant**? If pH was adjusted, were bottles flagged (i.e., stickers)?	Yes No N/A Yes No N/A	
For **special handling** (e.g., "MI" soils, foreign soils, lab filter for dissolved…, lab extract for volatiles, Ref Lab, limited volume), were bottles/paperwork flagged (e.g., sticker)?	Yes No N/A	SENT FOR SIZE REDUCTION
For **RUSH/SHORT Hold Time**, were COC/Bottles flagged accordingly? Was Rush/Short HT email sent, if applicable?	Yes No N/A	
For **SITE-SPECIFIC QC, e.g. BMS/BMSD/BDUP**, were containers / paperwork flagged accordingly?	Yes No N/A	
For any question answered "No," has the PM been notified and the problem resolved (or paperwork put in their bin)?	Yes No N/A	SRF Completed by: FAT PM notified: JAN N/A
Was **PEER REVIEW** of ***sample numbering/labeling completed?***	Yes No N/A	Peer Reviewed by: N/A

Additional notes (if applicable):

Received particle size reduced sp back from Dow HKM on 8/29/14. [illegible]

Note to Client: *Any "no" circled above indicates non-compliance with standard procedures and may impact data quality.*

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1144058001-A	No Preservative Required	OK			

Container Condition Glossary

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

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

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

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

Alert Expeditors Inc.
DBA/Petroleum Courier Service
Citywide Delivery • 440-3351
8421 Flamingo Drive • Anchorage, Alaska 99502

#348059

Date 8.26.14
From SGS
To Dowl HKN

Collect ☐	Prepay ☐ Account ☐	Advance Charges ☐
Job #	PO#	

1 cooler samples

1144058

Shipped Signature

Received By Evelyn Bradley

Total Charge

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

Report Summary

Friday September 05, 2014

Report Number: L717540
Samples Received: 08/22/14
Client Project: 20275.002.05

Description: Nikiski Removal/Baka Hyles

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Jarred Willis

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

This report may not be reproduced, except in full, without written approval from ESC Lab Sciences.
Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

September 05,2014

ESC Sample # : L717540-01

Site ID :

Project # : 20275.002.05

Date Received : August 22, 2014
Description : Nikiski Removal/Baka Hyles

Sample ID : 14-BHI-EX-07-SO

Collected By : Daniel Frank
Collection Date : 08/21/14 00:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	95.8	0.0333		%		2540 G-2	08/26/14	1
Mercury	0.0057	0.0028	0.021	mg/kg	J	7471	08/26/14	1
Arsenic	U	0.65	2.1	mg/kg		6010C	08/27/14	1
Barium	79.	0.17	0.52	mg/kg		6010C	08/27/14	1
Cadmium	U	0.070	0.52	mg/kg		6010C	08/27/14	1
Chromium	15.	0.14	1.0	mg/kg		6010C	08/27/14	1
Lead	4.7	0.19	0.52	mg/kg		6010C	08/27/14	1
Selenium	U	0.74	2.1	mg/kg		6010C	08/27/14	1
Silver	U	0.28	1.0	mg/kg		6010C	08/27/14	1
Base/Neutral Extractables								
Acenaphthene	U	0.0064	0.034	mg/kg		8270D	08/30/14	1
Acenaphthylene	U	0.0067	0.034	mg/kg		8270D	08/30/14	1
Anthracene	U	0.0063	0.034	mg/kg		8270D	08/30/14	1
Benzidine	U	0.064	0.35	mg/kg		8270D	08/30/14	1
Benzo(a)anthracene	U	0.0043	0.034	mg/kg		8270D	08/30/14	1
Benzo(b)fluoranthene	U	0.0070	0.034	mg/kg		8270D	08/30/14	1
Benzo(k)fluoranthene	U	0.0058	0.034	mg/kg		8270D	08/30/14	1
Benzo(g,h,i)perylene	U	0.0072	0.034	mg/kg		8270D	08/30/14	1
Benzo(a)pyrene	U	0.0055	0.034	mg/kg		8270D	08/30/14	1
Bis(2-chlorethoxy)methane	U	0.0077	0.35	mg/kg		8270D	08/30/14	1
Bis(2-chloroethyl)ether	U	0.0090	0.35	mg/kg		8270D	08/30/14	1
Bis(2-chloroisopropyl)ether	U	0.0076	0.35	mg/kg		8270D	08/30/14	1
4-Bromophenyl-phenylether	U	0.011	0.35	mg/kg		8270D	08/30/14	1
2-Chloronaphthalene	U	0.0064	0.034	mg/kg		8270D	08/30/14	1
4-Chlorophenyl-phenylether	U	0.0063	0.35	mg/kg		8270D	08/30/14	1
Chrysene	U	0.0056	0.034	mg/kg		8270D	08/30/14	1
Dibenz(a,h)anthracene	U	0.0082	0.034	mg/kg		8270D	08/30/14	1
3,3-Dichlorobenzidine	U	0.079	0.35	mg/kg		8270D	08/30/14	1
2,4-Dinitrotoluene	U	0.0061	0.35	mg/kg		8270D	08/30/14	1
2,6-Dinitrotoluene	U	0.0074	0.35	mg/kg		8270D	08/30/14	1
Fluoranthene	U	0.0050	0.034	mg/kg		8270D	08/30/14	1
Fluorene	U	0.0068	0.034	mg/kg		8270D	08/30/14	1
Hexachlorobenzene	U	0.0086	0.35	mg/kg		8270D	08/30/14	1
Hexachloro-1,3-butadiene	U	0.010	0.35	mg/kg		8270D	08/30/14	1
Hexachlorocyclopentadiene	U	0.059	0.35	mg/kg		8270D	08/30/14	1
Hexachloroethane	U	0.013	0.35	mg/kg		8270D	08/30/14	1
Indeno(1,2,3-cd)pyrene	U	0.0077	0.034	mg/kg		8270D	08/30/14	1
Isophorone	U	0.0052	0.35	mg/kg		8270D	08/30/14	1
Naphthalene	U	0.0089	0.034	mg/kg		8270D	08/30/14	1
Nitrobenzene	U	0.0070	0.35	mg/kg		8270D	08/30/14	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 09/05/14 09:38 Printed: 09/05/14 09:38

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

September 05,2014

ESC Sample # : L717540-01

Site ID :

Project # : 20275.002.05

Date Received : August 22, 2014
Description : Nikiski Removal/Baka Hyles

Sample ID : 14-BHI-EX-07-SO

Collected By : Daniel Frank
Collection Date : 08/21/14 00:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
n-Nitrosodimethylamine	U	0.065	0.35	mg/kg		8270D	08/30/14	1
n-Nitrosodiphenylamine	U	0.0059	0.35	mg/kg		8270D	08/30/14	1
n-Nitrosodi-n-propylamine	U	0.0091	0.35	mg/kg		8270D	08/30/14	1
Phenanthrene	U	0.0053	0.034	mg/kg		8270D	08/30/14	1
Benzylbutyl phthalate	U	0.010	0.35	mg/kg		8270D	08/30/14	1
Bis(2-ethylhexyl)phthalate	0.024	0.012	0.35	mg/kg	J	8270D	08/30/14	1
Di-n-butyl phthalate	U	0.011	0.35	mg/kg		8270D	08/30/14	1
Diethyl phthalate	U	0.0069	0.35	mg/kg		8270D	08/30/14	1
Dimethyl phthalate	U	0.0054	0.35	mg/kg		8270D	08/30/14	1
Di-n-octyl phthalate	U	0.0091	0.35	mg/kg	J3	8270D	08/30/14	1
Pyrene	U	0.012	0.034	mg/kg		8270D	08/30/14	1
1,2,4-Trichlorobenzene	U	0.0088	0.35	mg/kg		8270D	08/30/14	1
Acid Extractables								
4-Chloro-3-methylphenol	U	0.0048	0.35	mg/kg		8270D	08/30/14	1
2-Chlorophenol	U	0.0083	0.35	mg/kg		8270D	08/30/14	1
2,4-Dichlorophenol	U	0.0075	0.35	mg/kg		8270D	08/30/14	1
2,4-Dimethylphenol	U	0.047	0.35	mg/kg		8270D	08/30/14	1
4,6-Dinitro-2-methylphenol	U	0.12	0.35	mg/kg		8270D	08/30/14	1
2,4-Dinitrophenol	U	0.098	0.35	mg/kg		8270D	08/30/14	1
2-Nitrophenol	U	0.013	0.35	mg/kg		8270D	08/30/14	1
4-Nitrophenol	U	0.052	0.35	mg/kg		8270D	08/30/14	1
Pentachlorophenol	U	0.048	0.35	mg/kg		8270D	08/30/14	1
Phenol	U	0.0070	0.35	mg/kg		8270D	08/30/14	1
2,4,6-Trichlorophenol	U	0.0078	0.35	mg/kg		8270D	08/30/14	1
Surrogate Recovery								
2-Fluorophenol	52.0			% Rec.		8270D	08/30/14	1
Phenol-d5	55.6			% Rec.		8270D	08/30/14	1
Nitrobenzene-d5	51.8			% Rec.		8270D	08/30/14	1
2-Fluorobiphenyl	59.8			% Rec.		8270D	08/30/14	1
2,4,6-Tribromophenol	72.1			% Rec.		8270D	08/30/14	1
p-Terphenyl-d14	54.0			% Rec.		8270D	08/30/14	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 09/05/14 09:38 Printed: 09/05/14 09:38

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

September 05,2014

ESC Sample # : L717540-02

Site ID :

Project # : 20275.002.05

Date Received : August 22, 2014
Description : Nikiski Removal/Baka Hyles

Sample ID : 14-BHI-SP-03-SO

Collected By : Daniel Frank
Collection Date : 08/21/14 00:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	62.8	0.0333		%		2540 G-2	08/26/14	1
Mercury	2.4	0.014	0.16	mg/kg		7471	08/26/14	5
Arsenic	3.2	0.65	3.2	mg/kg	J	6010C	08/27/14	1
Barium	22000	0.85	4.0	mg/kg		6010C	08/27/14	5
Cadmium	33.	0.070	0.80	mg/kg		6010C	08/27/14	1
Chromium	250	0.14	1.6	mg/kg		6010C	08/27/14	1
Lead	6400	0.19	0.80	mg/kg		6010C	08/27/14	1
Selenium	U	0.74	3.2	mg/kg		6010C	08/27/14	1
Silver	3.0	0.28	1.6	mg/kg		6010C	08/27/14	1
Base/Neutral Extractables								
Acenaphthene	U	0.32	2.6	mg/kg		8270D	08/30/14	50
Acenaphthylene	1.6	0.34	2.6	mg/kg	J	8270D	08/30/14	50
Anthracene	U	0.32	2.6	mg/kg		8270D	08/30/14	50
Benzidine	U	3.2	26.	mg/kg		8270D	08/30/14	50
Benzo(a)anthracene	U	0.21	2.6	mg/kg		8270D	08/30/14	50
Benzo(b)fluoranthene	U	0.35	2.6	mg/kg		8270D	08/30/14	50
Benzo(k)fluoranthene	U	0.29	2.6	mg/kg		8270D	08/30/14	50
Benzo(g,h,i)perylene	U	0.36	2.6	mg/kg		8270D	08/30/14	50
Benzo(a)pyrene	U	0.27	2.6	mg/kg		8270D	08/30/14	50
Bis(2-chlorethoxy)methane	U	0.38	26.	mg/kg		8270D	08/30/14	50
Bis(2-chloroethyl)ether	U	0.45	26.	mg/kg		8270D	08/30/14	50
Bis(2-chloroisopropyl)ether	U	0.38	26.	mg/kg		8270D	08/30/14	50
4-Bromophenyl-phenylether	U	0.57	26.	mg/kg		8270D	08/30/14	50
2-Chloronaphthalene	U	0.32	2.6	mg/kg		8270D	08/30/14	50
4-Chlorophenyl-phenylether	U	0.31	26.	mg/kg		8270D	08/30/14	50
Chrysene	U	0.28	2.6	mg/kg		8270D	08/30/14	50
Dibenz(a,h)anthracene	U	0.41	2.6	mg/kg		8270D	08/30/14	50
3,3-Dichlorobenzidine	U	4.0	26.	mg/kg		8270D	08/30/14	50
2,4-Dinitrotoluene	U	0.30	26.	mg/kg		8270D	08/30/14	50
2,6-Dinitrotoluene	U	0.37	26.	mg/kg		8270D	08/30/14	50
Fluoranthene	U	0.25	2.6	mg/kg		8270D	08/30/14	50
Fluorene	U	0.34	2.6	mg/kg		8270D	08/30/14	50
Hexachlorobenzene	U	0.43	26.	mg/kg		8270D	08/30/14	50
Hexachloro-1,3-butadiene	U	0.50	26.	mg/kg		8270D	08/30/14	50
Hexachlorocyclopentadiene	U	2.9	26.	mg/kg		8270D	08/30/14	50
Hexachloroethane	U	0.67	26.	mg/kg		8270D	08/30/14	50
Indeno(1,2,3-cd)pyrene	U	0.39	2.6	mg/kg		8270D	08/30/14	50
Isophorone	U	0.26	26.	mg/kg		8270D	08/30/14	50
Naphthalene	1.6	0.44	2.6	mg/kg	J	8270D	08/30/14	50
Nitrobenzene	U	0.35	26.	mg/kg		8270D	08/30/14	50

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 09/05/14 09:38 Printed: 09/05/14 09:38

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

September 05,2014

ESC Sample # : L717540-02

Site ID :

Project # : 20275.002.05

Date Received : August 22, 2014
Description : Nikiski Removal/Baka Hyles

Sample ID : 14-BHI-SP-03-SO

Collected By : Daniel Frank
Collection Date : 08/21/14 00:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
n-Nitrosodimethylamine	U	3.2	26.	mg/kg		8270D	08/30/14	50
n-Nitrosodiphenylamine	U	0.30	26.	mg/kg		8270D	08/30/14	50
n-Nitrosodi-n-propylamine	U	0.45	26.	mg/kg		8270D	08/30/14	50
Phenanthrene	1.0	0.26	2.6	mg/kg	J	8270D	08/30/14	50
Benzylbutyl phthalate	U	0.52	26.	mg/kg		8270D	08/30/14	50
Bis(2-ethylhexyl)phthalate	640	6.0	260	mg/kg		8270D	09/03/14	500
Di-n-butyl phthalate	1.4	0.54	26.	mg/kg	J	8270D	08/30/14	50
Diethyl phthalate	U	0.34	26.	mg/kg		8270D	08/30/14	50
Dimethyl phthalate	U	0.27	26.	mg/kg		8270D	08/30/14	50
Di-n-octyl phthalate	U	0.45	26.	mg/kg	J3	8270D	08/30/14	50
Pyrene	U	0.62	2.6	mg/kg		8270D	08/30/14	50
1,2,4-Trichlorobenzene	U	0.44	26.	mg/kg		8270D	08/30/14	50
Acid Extractables								
4-Chloro-3-methylphenol	U	0.24	26.	mg/kg		8270D	08/30/14	50
2-Chlorophenol	U	0.42	26.	mg/kg		8270D	08/30/14	50
2,4-Dichlorophenol	U	0.37	26.	mg/kg		8270D	08/30/14	50
2,4-Dimethylphenol	U	2.4	26.	mg/kg		8270D	08/30/14	50
4,6-Dinitro-2-methylphenol	U	6.2	26.	mg/kg		8270D	08/30/14	50
2,4-Dinitrophenol	U	4.9	26.	mg/kg		8270D	08/30/14	50
2-Nitrophenol	U	0.65	26.	mg/kg		8270D	08/30/14	50
4-Nitrophenol	U	2.6	26.	mg/kg		8270D	08/30/14	50
Pentachlorophenol	U	2.4	26.	mg/kg		8270D	08/30/14	50
Phenol	U	0.35	26.	mg/kg		8270D	08/30/14	50
2,4,6-Trichlorophenol	U	0.39	26.	mg/kg		8270D	08/30/14	50
Surrogate Recovery								
2-Fluorophenol	0.00			% Rec.	J7	8270D	08/30/14	50
Phenol-d5	0.00			% Rec.	J7	8270D	08/30/14	50
Nitrobenzene-d5	0.00			% Rec.	J7	8270D	08/30/14	50
2-Fluorobiphenyl	0.00			% Rec.	J7	8270D	08/30/14	50
2,4,6-Tribromophenol	47.9			% Rec.	J7	8270D	08/30/14	50
p-Terphenyl-d14	24.1			% Rec.	J7	8270D	08/30/14	50

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 09/05/14 09:38 Printed: 09/05/14 09:38

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

September 05,2014

ESC Sample # : L717540-03

Site ID :

Project # : 20275.002.05

Date Received : August 22, 2014
Description : Nikiski Removal/Baka Hyles

Sample ID : 14-BHI-IP-01-SO

Collected By : Daniel Frank
Collection Date : 08/21/14 00:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	95.7	0.0333		%		2540 G-2	08/26/14	1
Mercury	0.0034	0.0028	0.021	mg/kg	J	7471	08/26/14	1
Arsenic	U	0.65	2.1	mg/kg		6010C	08/27/14	1
Barium	180	0.17	0.52	mg/kg		6010C	08/27/14	1
Cadmium	U	0.070	0.52	mg/kg		6010C	08/27/14	1
Chromium	26.	0.14	1.0	mg/kg		6010C	08/27/14	1
Lead	48.	0.19	0.52	mg/kg		6010C	08/27/14	1
Selenium	U	0.74	2.1	mg/kg		6010C	08/27/14	1
Silver	U	0.28	1.0	mg/kg		6010C	08/27/14	1
Base/Neutral Extractables								
Acenaphthene	U	0.032	0.17	mg/kg		8270D	08/30/14	5
Acenaphthylene	U	0.034	0.17	mg/kg		8270D	08/30/14	5
Anthracene	U	0.032	0.17	mg/kg		8270D	08/30/14	5
Benzidine	U	0.32	1.7	mg/kg		8270D	08/30/14	5
Benzo(a)anthracene	U	0.021	0.17	mg/kg		8270D	08/30/14	5
Benzo(b)fluoranthene	U	0.035	0.17	mg/kg		8270D	08/30/14	5
Benzo(k)fluoranthene	U	0.029	0.17	mg/kg		8270D	08/30/14	5
Benzo(g,h,i)perylene	U	0.036	0.17	mg/kg		8270D	08/30/14	5
Benzo(a)pyrene	U	0.027	0.17	mg/kg		8270D	08/30/14	5
Bis(2-chlorethoxy)methane	U	0.038	1.7	mg/kg		8270D	08/30/14	5
Bis(2-chloroethyl)ether	U	0.045	1.7	mg/kg		8270D	08/30/14	5
Bis(2-chloroisopropyl)ether	U	0.038	1.7	mg/kg		8270D	08/30/14	5
4-Bromophenyl-phenylether	U	0.057	1.7	mg/kg		8270D	08/30/14	5
2-Chloronaphthalene	U	0.032	0.17	mg/kg		8270D	08/30/14	5
4-Chlorophenyl-phenylether	U	0.031	1.7	mg/kg		8270D	08/30/14	5
Chrysene	U	0.028	0.17	mg/kg		8270D	08/30/14	5
Dibenz(a,h)anthracene	U	0.041	0.17	mg/kg		8270D	08/30/14	5
3,3-Dichlorobenzidine	U	0.40	1.7	mg/kg		8270D	08/30/14	5
2,4-Dinitrotoluene	U	0.030	1.7	mg/kg		8270D	08/30/14	5
2,6-Dinitrotoluene	U	0.037	1.7	mg/kg		8270D	08/30/14	5
Fluoranthene	U	0.025	0.17	mg/kg		8270D	08/30/14	5
Fluorene	U	0.034	0.17	mg/kg		8270D	08/30/14	5
Hexachlorobenzene	U	0.043	1.7	mg/kg		8270D	08/30/14	5
Hexachloro-1,3-butadiene	U	0.050	1.7	mg/kg		8270D	08/30/14	5
Hexachlorocyclopentadiene	U	0.29	1.7	mg/kg		8270D	08/30/14	5
Hexachloroethane	U	0.067	1.7	mg/kg		8270D	08/30/14	5
Indeno(1,2,3-cd)pyrene	U	0.039	0.17	mg/kg		8270D	08/30/14	5
Isophorone	U	0.026	1.7	mg/kg		8270D	08/30/14	5
Naphthalene	U	0.044	0.17	mg/kg		8270D	08/30/14	5
Nitrobenzene	U	0.035	1.7	mg/kg		8270D	08/30/14	5

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 09/05/14 09:38 Printed: 09/05/14 09:38

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

September 05,2014

ESC Sample # : L717540-03

Site ID :

Project # : 20275.002.05

Date Received : August 22, 2014
Description : Nikiski Removal/Baka Hyles

Sample ID : 14-BHI-IP-01-SO

Collected By : Daniel Frank
Collection Date : 08/21/14 00:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
n-Nitrosodimethylamine	U	0.32	1.7	mg/kg		8270D	08/30/14	5
n-Nitrosodiphenylamine	U	0.030	1.7	mg/kg		8270D	08/30/14	5
n-Nitrosodi-n-propylamine	U	0.045	1.7	mg/kg		8270D	08/30/14	5
Phenanthrene	U	0.026	0.17	mg/kg		8270D	08/30/14	5
Benzylbutyl phthalate	U	0.052	1.7	mg/kg		8270D	08/30/14	5
Bis(2-ethylhexyl)phthalate	0.15	0.060	1.7	mg/kg	J	8270D	08/30/14	5
Di-n-butyl phthalate	U	0.054	1.7	mg/kg		8270D	08/30/14	5
Diethyl phthalate	U	0.034	1.7	mg/kg		8270D	08/30/14	5
Dimethyl phthalate	U	0.027	1.7	mg/kg		8270D	08/30/14	5
Di-n-octyl phthalate	U	0.045	1.7	mg/kg	J3	8270D	08/30/14	5
Pyrene	U	0.062	0.17	mg/kg		8270D	08/30/14	5
1,2,4-Trichlorobenzene	U	0.044	1.7	mg/kg		8270D	08/30/14	5
Acid Extractables								
4-Chloro-3-methylphenol	U	0.024	1.7	mg/kg		8270D	08/30/14	5
2-Chlorophenol	U	0.042	1.7	mg/kg		8270D	08/30/14	5
2,4-Dichlorophenol	U	0.037	1.7	mg/kg		8270D	08/30/14	5
2,4-Dimethylphenol	U	0.24	1.7	mg/kg		8270D	08/30/14	5
4,6-Dinitro-2-methylphenol	U	0.62	1.7	mg/kg		8270D	08/30/14	5
2,4-Dinitrophenol	U	0.49	1.7	mg/kg		8270D	08/30/14	5
2-Nitrophenol	U	0.065	1.7	mg/kg		8270D	08/30/14	5
4-Nitrophenol	U	0.26	1.7	mg/kg		8270D	08/30/14	5
Pentachlorophenol	U	0.24	1.7	mg/kg		8270D	08/30/14	5
Phenol	U	0.035	1.7	mg/kg		8270D	08/30/14	5
2,4,6-Trichlorophenol	U	0.039	1.7	mg/kg		8270D	08/30/14	5
Surrogate Recovery								
2-Fluorophenol	52.7			% Rec.		8270D	08/30/14	5
Phenol-d5	55.5			% Rec.		8270D	08/30/14	5
Nitrobenzene-d5	42.9			% Rec.		8270D	08/30/14	5
2-Fluorobiphenyl	54.9			% Rec.		8270D	08/30/14	5
2,4,6-Tribromophenol	58.6			% Rec.		8270D	08/30/14	5
p-Terphenyl-d14	61.5			% Rec.		8270D	08/30/14	5

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 09/05/14 09:38 Printed: 09/05/14 09:38

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

September 05,2014

ESC Sample # : L717540-04

Site ID :

Project # : 20275.002.05

Date Received : August 22, 2014
Description : Nikiski Removal/Baka Hyles

Sample ID : 14-BHI-IP-02-SO

Collected By : Daniel Frank
Collection Date : 08/21/14 00:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	94.8	0.0333		%		2540 G-2	08/26/14	1
Mercury	0.0061	0.0028	0.021	mg/kg	J	7471	08/26/14	1
Arsenic	U	0.65	2.1	mg/kg		6010C	08/27/14	1
Barium	100	0.17	0.53	mg/kg		6010C	08/27/14	1
Cadmium	U	0.070	0.53	mg/kg		6010C	08/27/14	1
Chromium	13.	0.14	1.0	mg/kg		6010C	08/27/14	1
Lead	16.	0.19	0.53	mg/kg		6010C	08/27/14	1
Selenium	U	0.74	2.1	mg/kg		6010C	08/27/14	1
Silver	U	0.28	1.0	mg/kg		6010C	08/27/14	1
Base/Neutral Extractables								
Acenaphthene	U	0.0064	0.035	mg/kg		8270D	09/03/14	1
Acenaphthylene	U	0.0067	0.035	mg/kg		8270D	09/03/14	1
Anthracene	U	0.0063	0.035	mg/kg		8270D	09/03/14	1
Benzidine	U	0.064	0.35	mg/kg		8270D	09/03/14	1
Benzo(a)anthracene	U	0.0043	0.035	mg/kg		8270D	09/03/14	1
Benzo(b)fluoranthene	U	0.0070	0.035	mg/kg		8270D	09/03/14	1
Benzo(k)fluoranthene	U	0.0058	0.035	mg/kg		8270D	09/03/14	1
Benzo(g,h,i)perylene	U	0.0072	0.035	mg/kg		8270D	09/03/14	1
Benzo(a)pyrene	U	0.0055	0.035	mg/kg		8270D	09/03/14	1
Bis(2-chlorethoxy)methane	U	0.0077	0.35	mg/kg		8270D	09/03/14	1
Bis(2-chloroethyl)ether	U	0.0090	0.35	mg/kg		8270D	09/03/14	1
Bis(2-chloroisopropyl)ether	U	0.0076	0.35	mg/kg		8270D	09/03/14	1
4-Bromophenyl-phenylether	U	0.011	0.35	mg/kg		8270D	09/03/14	1
2-Chloronaphthalene	U	0.0064	0.035	mg/kg		8270D	09/03/14	1
4-Chlorophenyl-phenylether	U	0.0063	0.35	mg/kg		8270D	09/03/14	1
Chrysene	U	0.0056	0.035	mg/kg		8270D	09/03/14	1
Dibenz(a,h)anthracene	U	0.0082	0.035	mg/kg		8270D	09/03/14	1
3,3-Dichlorobenzidine	U	0.079	0.35	mg/kg		8270D	09/03/14	1
2,4-Dinitrotoluene	U	0.0061	0.35	mg/kg		8270D	09/03/14	1
2,6-Dinitrotoluene	U	0.0074	0.35	mg/kg		8270D	09/03/14	1
Fluoranthene	U	0.0050	0.035	mg/kg		8270D	09/03/14	1
Fluorene	U	0.0068	0.035	mg/kg		8270D	09/03/14	1
Hexachlorobenzene	U	0.0086	0.35	mg/kg		8270D	09/03/14	1
Hexachloro-1,3-butadiene	U	0.010	0.35	mg/kg		8270D	09/03/14	1
Hexachlorocyclopentadiene	U	0.059	0.35	mg/kg		8270D	09/03/14	1
Hexachloroethane	U	0.013	0.35	mg/kg		8270D	09/03/14	1
Indeno(1,2,3-cd)pyrene	U	0.0077	0.035	mg/kg		8270D	09/03/14	1
Isophorone	U	0.0052	0.35	mg/kg		8270D	09/03/14	1
Naphthalene	U	0.0089	0.035	mg/kg		8270D	09/03/14	1
Nitrobenzene	U	0.0070	0.35	mg/kg		8270D	09/03/14	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 09/05/14 09:38 Printed: 09/05/14 09:38

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

September 05,2014

ESC Sample # : L717540-04

Site ID :

Project # : 20275.002.05

Date Received : August 22, 2014
Description : Nikiski Removal/Baka Hyles

Sample ID : 14-BHI-IP-02-SO

Collected By : Daniel Frank
Collection Date : 08/21/14 00:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
n-Nitrosodimethylamine	U	0.065	0.35	mg/kg		8270D	09/03/14	1
n-Nitrosodiphenylamine	U	0.0059	0.35	mg/kg		8270D	09/03/14	1
n-Nitrosodi-n-propylamine	U	0.0091	0.35	mg/kg		8270D	09/03/14	1
Phenanthrene	U	0.0053	0.035	mg/kg		8270D	09/03/14	1
Benzylbutyl phthalate	U	0.010	0.35	mg/kg		8270D	09/03/14	1
Bis(2-ethylhexyl)phthalate	0.33	0.012	0.35	mg/kg	J	8270D	09/03/14	1
Di-n-butyl phthalate	U	0.011	0.35	mg/kg		8270D	09/03/14	1
Diethyl phthalate	U	0.0069	0.35	mg/kg		8270D	09/03/14	1
Dimethyl phthalate	U	0.0054	0.35	mg/kg		8270D	09/03/14	1
Di-n-octyl phthalate	0.014	0.0091	0.35	mg/kg	JJ3	8270D	09/03/14	1
Pyrene	U	0.012	0.035	mg/kg		8270D	09/03/14	1
1,2,4-Trichlorobenzene	U	0.0088	0.35	mg/kg		8270D	09/03/14	1
Acid Extractables								
4-Chloro-3-methylphenol	U	0.0048	0.35	mg/kg		8270D	09/03/14	1
2-Chlorophenol	U	0.0083	0.35	mg/kg		8270D	09/03/14	1
2,4-Dichlorophenol	U	0.0075	0.35	mg/kg		8270D	09/03/14	1
2,4-Dimethylphenol	U	0.047	0.35	mg/kg		8270D	09/03/14	1
4,6-Dinitro-2-methylphenol	U	0.12	0.35	mg/kg		8270D	09/03/14	1
2,4-Dinitrophenol	U	0.098	0.35	mg/kg		8270D	09/03/14	1
2-Nitrophenol	U	0.013	0.35	mg/kg		8270D	09/03/14	1
4-Nitrophenol	U	0.052	0.35	mg/kg		8270D	09/03/14	1
Pentachlorophenol	U	0.048	0.35	mg/kg		8270D	09/03/14	1
Phenol	U	0.0070	0.35	mg/kg		8270D	09/03/14	1
2,4,6-Trichlorophenol	U	0.0078	0.35	mg/kg		8270D	09/03/14	1
Surrogate Recovery								
2-Fluorophenol	42.1			% Rec.		8270D	09/03/14	1
Phenol-d5	48.4			% Rec.		8270D	09/03/14	1
Nitrobenzene-d5	46.1			% Rec.		8270D	09/03/14	1
2-Fluorobiphenyl	52.3			% Rec.		8270D	09/03/14	1
2,4,6-Tribromophenol	75.3			% Rec.		8270D	09/03/14	1
p-Terphenyl-d14	46.7			% Rec.		8270D	09/03/14	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 09/05/14 09:38 Printed: 09/05/14 09:38

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

September 05,2014

ESC Sample # : L717540-05

Site ID :

Project # : 20275.002.05

Date Received : August 22, 2014
Description : Nikiski Removal/Baka Hyles

Sample ID : 14-BHI-IP-03-SO

Collected By : Daniel Frank
Collection Date : 08/21/14 00:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	85.2	0.0333		%		2540 G-2	08/26/14	1
Mercury	0.25	0.0028	0.023	mg/kg		7471	08/26/14	1
Arsenic	0.77	0.65	2.3	mg/kg	J	6010C	08/27/14	1
Barium	2600	0.17	0.59	mg/kg		6010C	08/27/14	1
Cadmium	7.0	0.070	0.59	mg/kg		6010C	08/27/14	1
Chromium	81.	0.14	1.2	mg/kg		6010C	08/27/14	1
Lead	1000	0.19	0.59	mg/kg		6010C	08/27/14	1
Selenium	U	0.74	2.3	mg/kg		6010C	08/27/14	1
Silver	U	0.28	1.2	mg/kg		6010C	08/27/14	1
Base/Neutral Extractables								
Acenaphthene	U	0.13	0.77	mg/kg		8270D	08/30/14	20
Acenaphthylene	U	0.13	0.77	mg/kg		8270D	08/30/14	20
Anthracene	U	0.13	0.77	mg/kg		8270D	08/30/14	20
Benzidine	U	1.3	7.8	mg/kg		8270D	08/30/14	20
Benzo(a)anthracene	U	0.086	0.77	mg/kg		8270D	08/30/14	20
Benzo(b)fluoranthene	U	0.14	0.77	mg/kg		8270D	08/30/14	20
Benzo(k)fluoranthene	U	0.12	0.77	mg/kg		8270D	08/30/14	20
Benzo(g,h,i)perylene	U	0.14	0.77	mg/kg		8270D	08/30/14	20
Benzo(a)pyrene	U	0.11	0.77	mg/kg		8270D	08/30/14	20
Bis(2-chlorethoxy)methane	U	0.15	7.8	mg/kg		8270D	08/30/14	20
Bis(2-chloroethyl)ether	U	0.18	7.8	mg/kg		8270D	08/30/14	20
Bis(2-chloroisopropyl)ether	U	0.15	7.8	mg/kg		8270D	08/30/14	20
4-Bromophenyl-phenylether	U	0.23	7.8	mg/kg		8270D	08/30/14	20
2-Chloronaphthalene	U	0.13	0.77	mg/kg		8270D	08/30/14	20
4-Chlorophenyl-phenylether	U	0.12	7.8	mg/kg		8270D	08/30/14	20
Chrysene	U	0.11	0.77	mg/kg		8270D	08/30/14	20
Dibenz(a,h)anthracene	U	0.16	0.77	mg/kg		8270D	08/30/14	20
3,3-Dichlorobenzidine	U	1.6	7.8	mg/kg		8270D	08/30/14	20
2,4-Dinitrotoluene	U	0.12	7.8	mg/kg		8270D	08/30/14	20
2,6-Dinitrotoluene	U	0.15	7.8	mg/kg		8270D	08/30/14	20
Fluoranthene	U	0.099	0.77	mg/kg		8270D	08/30/14	20
Fluorene	U	0.14	0.77	mg/kg		8270D	08/30/14	20
Hexachlorobenzene	U	0.17	7.8	mg/kg		8270D	08/30/14	20
Hexachloro-1,3-butadiene	U	0.20	7.8	mg/kg		8270D	08/30/14	20
Hexachlorocyclopentadiene	U	1.2	7.8	mg/kg		8270D	08/30/14	20
Hexachloroethane	U	0.27	7.8	mg/kg		8270D	08/30/14	20
Indeno(1,2,3-cd)pyrene	U	0.15	0.77	mg/kg		8270D	08/30/14	20
Isophorone	U	0.10	7.8	mg/kg		8270D	08/30/14	20
Naphthalene	U	0.18	0.77	mg/kg		8270D	08/30/14	20
Nitrobenzene	U	0.14	7.8	mg/kg		8270D	08/30/14	20

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 09/05/14 09:38 Printed: 09/05/14 09:38

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

September 05,2014

ESC Sample # : L717540-05

Site ID :

Project # : 20275.002.05

Date Received : August 22, 2014
Description : Nikiski Removal/Baka Hyles

Sample ID : 14-BHI-IP-03-SO

Collected By : Daniel Frank
Collection Date : 08/21/14 00:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
n-Nitrosodimethylamine	U	1.3	7.8	mg/kg		8270D	08/30/14	20
n-Nitrosodiphenylamine	U	0.12	7.8	mg/kg		8270D	08/30/14	20
n-Nitrosodi-n-propylamine	U	0.18	7.8	mg/kg		8270D	08/30/14	20
Phenanthrene	U	0.10	0.77	mg/kg		8270D	08/30/14	20
Benzylbutyl phthalate	U	0.21	7.8	mg/kg		8270D	08/30/14	20
Bis(2-ethylhexyl)phthalate	0.66	0.24	7.8	mg/kg	J	8270D	08/30/14	20
Di-n-butyl phthalate	U	0.22	7.8	mg/kg		8270D	08/30/14	20
Diethyl phthalate	U	0.14	7.8	mg/kg		8270D	08/30/14	20
Dimethyl phthalate	U	0.11	7.8	mg/kg		8270D	08/30/14	20
Di-n-octyl phthalate	U	0.18	7.8	mg/kg	J3	8270D	08/30/14	20
Pyrene	U	0.25	0.77	mg/kg		8270D	08/30/14	20
1,2,4-Trichlorobenzene	U	0.18	7.8	mg/kg		8270D	08/30/14	20
Acid Extractables								
4-Chloro-3-methylphenol	U	0.095	7.8	mg/kg		8270D	08/30/14	20
2-Chlorophenol	U	0.17	7.8	mg/kg		8270D	08/30/14	20
2,4-Dichlorophenol	U	0.15	7.8	mg/kg		8270D	08/30/14	20
2,4-Dimethylphenol	U	0.94	7.8	mg/kg		8270D	08/30/14	20
4,6-Dinitro-2-methylphenol	U	2.5	7.8	mg/kg		8270D	08/30/14	20
2,4-Dinitrophenol	U	2.0	7.8	mg/kg		8270D	08/30/14	20
2-Nitrophenol	U	0.26	7.8	mg/kg		8270D	08/30/14	20
4-Nitrophenol	U	1.0	7.8	mg/kg		8270D	08/30/14	20
Pentachlorophenol	U	0.96	7.8	mg/kg		8270D	08/30/14	20
Phenol	U	0.14	7.8	mg/kg		8270D	08/30/14	20
2,4,6-Trichlorophenol	U	0.16	7.8	mg/kg		8270D	08/30/14	20
Surrogate Recovery								
2-Fluorophenol	44.0			% Rec.	J7	8270D	08/30/14	20
Phenol-d5	45.4			% Rec.	J7	8270D	08/30/14	20
Nitrobenzene-d5	46.6			% Rec.	J7	8270D	08/30/14	20
2-Fluorobiphenyl	46.7			% Rec.	J7	8270D	08/30/14	20
2,4,6-Tribromophenol	50.2			% Rec.	J7	8270D	08/30/14	20
p-Terphenyl-d14	0.00			% Rec.	J7	8270D	08/30/14	20

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 09/05/14 09:38 Printed: 09/05/14 09:38

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

September 05,2014

ESC Sample # : L717540-06

Site ID :

Project # : 20275.002.05

Date Received : August 22, 2014
Description : Nikiski Removal/Baka Hyles

Sample ID : 14-BHI-UT-01-SO

Collected By : Daniel Frank
Collection Date : 08/21/14 00:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	95.5	0.0333		%		2540 G-2	08/26/14	1
Mercury	0.0087	0.0028	0.021	mg/kg	J	7471	08/26/14	1
Arsenic	U	0.65	2.1	mg/kg		6010C	08/27/14	1
Barium	120	0.17	0.52	mg/kg		6010C	08/27/14	1
Cadmium	U	0.070	0.52	mg/kg		6010C	08/27/14	1
Chromium	29.	0.14	1.0	mg/kg		6010C	08/27/14	1
Lead	42.	0.19	0.52	mg/kg		6010C	08/27/14	1
Nickel	15.	0.49	2.1	mg/kg		6010C	08/27/14	1
Selenium	U	0.74	2.1	mg/kg		6010C	08/27/14	1
Silver	U	0.28	1.0	mg/kg		6010C	08/27/14	1
Vanadium	50.	0.24	2.1	mg/kg		6010C	08/27/14	1
Polychlorinated Biphenyls								
PCB 1016	U	0.0065	0.018	mg/kg		8082	08/26/14	1
PCB 1221	U	0.0054	0.018	mg/kg		8082	08/26/14	1
PCB 1232	U	0.0042	0.018	mg/kg		8082	08/26/14	1
PCB 1242	U	0.0032	0.018	mg/kg		8082	08/26/14	1
PCB 1248	U	0.0032	0.018	mg/kg		8082	08/26/14	1
PCB 1254	U	0.0047	0.018	mg/kg		8082	08/26/14	1
PCB 1260	0.0086	0.0049	0.018	mg/kg	J	8082	08/26/14	1
PCBs Surrogates								
Decachlorobiphenyl	66.3			% Rec.		8082	08/26/14	1
Tetrachloro-m-xylene	74.4			% Rec.		8082	08/26/14	1
Base/Neutral Extractables								
Acenaphthene	U	0.0064	0.034	mg/kg		8270D	08/30/14	1
Acenaphthylene	U	0.0067	0.034	mg/kg		8270D	08/30/14	1
Anthracene	U	0.0063	0.034	mg/kg		8270D	08/30/14	1
Benzidine	U	0.064	0.35	mg/kg		8270D	08/30/14	1
Benzo(a)anthracene	U	0.0043	0.034	mg/kg		8270D	08/30/14	1
Benzo(b)fluoranthene	U	0.0070	0.034	mg/kg		8270D	08/30/14	1
Benzo(k)fluoranthene	U	0.0058	0.034	mg/kg		8270D	08/30/14	1
Benzo(g,h,i)perylene	U	0.0072	0.034	mg/kg		8270D	08/30/14	1
Benzo(a)pyrene	U	0.0055	0.034	mg/kg		8270D	08/30/14	1
Bis(2-chlorethoxy)methane	U	0.0077	0.35	mg/kg		8270D	08/30/14	1
Bis(2-chloroethyl)ether	U	0.0090	0.35	mg/kg		8270D	08/30/14	1
Bis(2-chloroisopropyl)ether	U	0.0076	0.35	mg/kg		8270D	08/30/14	1
4-Bromophenyl-phenylether	U	0.011	0.35	mg/kg		8270D	08/30/14	1
2-Chloronaphthalene	U	0.0064	0.034	mg/kg		8270D	08/30/14	1
4-Chlorophenyl-phenylether	U	0.0063	0.35	mg/kg		8270D	08/30/14	1
Chrysene	U	0.0056	0.034	mg/kg		8270D	08/30/14	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 09/05/14 09:38 Printed: 09/05/14 09:38

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

September 05,2014

ESC Sample # : L717540-06

Site ID :

Project # : 20275.002.05

Date Received : August 22, 2014
Description : Nikiski Removal/Baka Hyles

Sample ID : 14-BHI-UT-01-SO

Collected By : Daniel Frank
Collection Date : 08/21/14 00:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Dibenz(a,h)anthracene	U	0.0082	0.034	mg/kg		8270D	08/30/14	1
3,3-Dichlorobenzidine	U	0.079	0.35	mg/kg		8270D	08/30/14	1
2,4-Dinitrotoluene	U	0.0061	0.35	mg/kg		8270D	08/30/14	1
2,6-Dinitrotoluene	U	0.0074	0.35	mg/kg		8270D	08/30/14	1
Fluoranthene	U	0.0050	0.034	mg/kg		8270D	08/30/14	1
Fluorene	U	0.0068	0.034	mg/kg		8270D	08/30/14	1
Hexachlorobenzene	U	0.0086	0.35	mg/kg		8270D	08/30/14	1
Hexachloro-1,3-butadiene	U	0.010	0.35	mg/kg		8270D	08/30/14	1
Hexachlorocyclopentadiene	U	0.059	0.35	mg/kg		8270D	08/30/14	1
Hexachloroethane	U	0.013	0.35	mg/kg		8270D	08/30/14	1
Indeno(1,2,3-cd)pyrene	U	0.0077	0.034	mg/kg		8270D	08/30/14	1
Isophorone	U	0.0052	0.35	mg/kg		8270D	08/30/14	1
Naphthalene	U	0.0089	0.034	mg/kg		8270D	08/30/14	1
Nitrobenzene	U	0.0070	0.35	mg/kg		8270D	08/30/14	1
n-Nitrosodimethylamine	U	0.065	0.35	mg/kg		8270D	08/30/14	1
n-Nitrosodiphenylamine	U	0.0059	0.35	mg/kg		8270D	08/30/14	1
n-Nitrosodi-n-propylamine	U	0.0091	0.35	mg/kg		8270D	08/30/14	1
Phenanthrene	U	0.0053	0.034	mg/kg		8270D	08/30/14	1
Benzylbutyl phthalate	U	0.010	0.35	mg/kg		8270D	08/30/14	1
Bis(2-ethylhexyl)phthalate	U	0.012	0.35	mg/kg		8270D	08/30/14	1
Di-n-butyl phthalate	U	0.011	0.35	mg/kg		8270D	08/30/14	1
Diethyl phthalate	U	0.0069	0.35	mg/kg		8270D	08/30/14	1
Dimethyl phthalate	U	0.0054	0.35	mg/kg		8270D	08/30/14	1
Di-n-octyl phthalate	U	0.0091	0.35	mg/kg	J3	8270D	08/30/14	1
Pyrene	U	0.012	0.034	mg/kg		8270D	08/30/14	1
1,2,4-Trichlorobenzene	U	0.0088	0.35	mg/kg		8270D	08/30/14	1
Acid Extractables								
4-Chloro-3-methylphenol	U	0.0048	0.35	mg/kg		8270D	08/30/14	1
2-Chlorophenol	U	0.0083	0.35	mg/kg		8270D	08/30/14	1
2,4-Dichlorophenol	U	0.0075	0.35	mg/kg		8270D	08/30/14	1
2,4-Dimethylphenol	U	0.047	0.35	mg/kg		8270D	08/30/14	1
4,6-Dinitro-2-methylphenol	U	0.12	0.35	mg/kg		8270D	08/30/14	1
2,4-Dinitrophenol	U	0.098	0.35	mg/kg		8270D	08/30/14	1
2-Nitrophenol	U	0.013	0.35	mg/kg		8270D	08/30/14	1
4-Nitrophenol	U	0.052	0.35	mg/kg		8270D	08/30/14	1
Pentachlorophenol	U	0.048	0.35	mg/kg		8270D	08/30/14	1
Phenol	U	0.0070	0.35	mg/kg		8270D	08/30/14	1
2,4,6-Trichlorophenol	U	0.0078	0.35	mg/kg		8270D	08/30/14	1
Surrogate Recovery								
2-Fluorophenol	52.4			% Rec.		8270D	08/30/14	1
Phenol-d5	55.1			% Rec.		8270D	08/30/14	1
Nitrobenzene-d5	54.8			% Rec.		8270D	08/30/14	1
2-Fluorobiphenyl	58.4			% Rec.		8270D	08/30/14	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 09/05/14 09:38 Printed: 09/05/14 09:38

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

September 05,2014

ESC Sample # : L717540-06

Site ID :

Project # : 20275.002.05

Date Received : August 22, 2014
Description : Nikiski Removal/Baka Hyles

Sample ID : 14-BHI-UT-01-SO

Collected By : Daniel Frank
Collection Date : 08/21/14 00:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
2,4,6-Tribromophenol	69.4			% Rec.		8270D	08/30/14	1
p-Terphenyl-d14	68.4			% Rec.		8270D	08/30/14	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 09/05/14 09:38 Printed: 09/05/14 09:38

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

September 05,2014

ESC Sample # : L717540-07

Site ID :

Project # : 20275.002.05

Date Received : August 22, 2014
Description : Nikiski Removal/Baka Hyles

Sample ID : 14-BHI-UT-02-SO

Collected By : Daniel Frank
Collection Date : 08/21/14 00:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	96.6	0.0333		%		2540 G-2	08/26/14	1
Mercury	0.021	0.0028	0.021	mg/kg		7471	08/26/14	1
Arsenic	0.74	0.65	2.1	mg/kg	J	6010C	08/27/14	1
Barium	70.	0.17	0.52	mg/kg		6010C	08/27/14	1
Cadmium	U	0.070	0.52	mg/kg		6010C	08/27/14	1
Chromium	19.	0.14	1.0	mg/kg		6010C	08/27/14	1
Lead	3.6	0.19	0.52	mg/kg		6010C	08/27/14	1
Nickel	16.	0.49	2.1	mg/kg		6010C	08/27/14	1
Selenium	U	0.74	2.1	mg/kg		6010C	08/27/14	1
Silver	U	0.28	1.0	mg/kg		6010C	08/27/14	1
Vanadium	49.	0.24	2.1	mg/kg		6010C	08/27/14	1
Polychlorinated Biphenyls								
PCB 1016	U	0.0065	0.018	mg/kg		8082	08/26/14	1
PCB 1221	U	0.0054	0.018	mg/kg		8082	08/26/14	1
PCB 1232	U	0.0042	0.018	mg/kg		8082	08/26/14	1
PCB 1242	U	0.0032	0.018	mg/kg		8082	08/26/14	1
PCB 1248	U	0.0032	0.018	mg/kg		8082	08/26/14	1
PCB 1254	U	0.0047	0.018	mg/kg		8082	08/26/14	1
PCB 1260	U	0.0049	0.018	mg/kg		8082	08/26/14	1
PCBs Surrogates								
Decachlorobiphenyl	72.4			% Rec.		8082	08/26/14	1
Tetrachloro-m-xylene	71.0			% Rec.		8082	08/26/14	1
Base/Neutral Extractables								
Acenaphthene	U	0.0064	0.034	mg/kg		8270D	09/03/14	1
Acenaphthylene	U	0.0067	0.034	mg/kg		8270D	09/03/14	1
Anthracene	U	0.0063	0.034	mg/kg		8270D	09/03/14	1
Benzidine	U	0.064	0.34	mg/kg		8270D	09/03/14	1
Benzo(a)anthracene	U	0.0043	0.034	mg/kg		8270D	09/03/14	1
Benzo(b)fluoranthene	U	0.0070	0.034	mg/kg		8270D	09/03/14	1
Benzo(k)fluoranthene	U	0.0058	0.034	mg/kg		8270D	09/03/14	1
Benzo(g,h,i)perylene	U	0.0072	0.034	mg/kg		8270D	09/03/14	1
Benzo(a)pyrene	U	0.0055	0.034	mg/kg		8270D	09/03/14	1
Bis(2-chlorethoxy)methane	U	0.0077	0.34	mg/kg		8270D	09/03/14	1
Bis(2-chloroethyl)ether	U	0.0090	0.34	mg/kg		8270D	09/03/14	1
Bis(2-chloroisopropyl)ether	U	0.0076	0.34	mg/kg		8270D	09/03/14	1
4-Bromophenyl-phenylether	U	0.011	0.34	mg/kg		8270D	09/03/14	1
2-Chloronaphthalene	U	0.0064	0.034	mg/kg		8270D	09/03/14	1
4-Chlorophenyl-phenylether	U	0.0063	0.34	mg/kg		8270D	09/03/14	1
Chrysene	U	0.0056	0.034	mg/kg		8270D	09/03/14	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 09/05/14 09:38 Printed: 09/05/14 09:38

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

September 05,2014

ESC Sample # : L717540-07

Site ID :

Project # : 20275.002.05

Date Received : August 22, 2014
Description : Nikiski Removal/Baka Hyles

Sample ID : 14-BHI-UT-02-SO

Collected By : Daniel Frank
Collection Date : 08/21/14 00:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Dibenz(a,h)anthracene	U	0.0082	0.034	mg/kg		8270D	09/03/14	1
3,3-Dichlorobenzidine	U	0.079	0.34	mg/kg		8270D	09/03/14	1
2,4-Dinitrotoluene	U	0.0061	0.34	mg/kg		8270D	09/03/14	1
2,6-Dinitrotoluene	U	0.0074	0.34	mg/kg		8270D	09/03/14	1
Fluoranthene	U	0.0050	0.034	mg/kg		8270D	09/03/14	1
Fluorene	U	0.0068	0.034	mg/kg		8270D	09/03/14	1
Hexachlorobenzene	U	0.0086	0.34	mg/kg		8270D	09/03/14	1
Hexachloro-1,3-butadiene	U	0.010	0.34	mg/kg		8270D	09/03/14	1
Hexachlorocyclopentadiene	U	0.059	0.34	mg/kg		8270D	09/03/14	1
Hexachloroethane	U	0.013	0.34	mg/kg		8270D	09/03/14	1
Indeno(1,2,3-cd)pyrene	U	0.0077	0.034	mg/kg		8270D	09/03/14	1
Isophorone	U	0.0052	0.34	mg/kg		8270D	09/03/14	1
Naphthalene	U	0.0089	0.034	mg/kg		8270D	09/03/14	1
Nitrobenzene	U	0.0070	0.34	mg/kg		8270D	09/03/14	1
n-Nitrosodimethylamine	U	0.065	0.34	mg/kg		8270D	09/03/14	1
n-Nitrosodiphenylamine	U	0.0059	0.34	mg/kg		8270D	09/03/14	1
n-Nitrosodi-n-propylamine	U	0.0091	0.34	mg/kg		8270D	09/03/14	1
Phenanthrene	U	0.0053	0.034	mg/kg		8270D	09/03/14	1
Benzylbutyl phthalate	U	0.010	0.34	mg/kg		8270D	09/03/14	1
Bis(2-ethylhexyl)phthalate	0.16	0.012	0.34	mg/kg	J	8270D	09/03/14	1
Di-n-butyl phthalate	U	0.011	0.34	mg/kg		8270D	09/03/14	1
Diethyl phthalate	U	0.0069	0.34	mg/kg		8270D	09/03/14	1
Dimethyl phthalate	U	0.0054	0.34	mg/kg		8270D	09/03/14	1
Di-n-octyl phthalate	U	0.0091	0.34	mg/kg	J3	8270D	09/03/14	1
Pyrene	U	0.012	0.034	mg/kg		8270D	09/03/14	1
1,2,4-Trichlorobenzene	U	0.0088	0.34	mg/kg		8270D	09/03/14	1
Acid Extractables								
4-Chloro-3-methylphenol	U	0.0048	0.34	mg/kg		8270D	09/03/14	1
2-Chlorophenol	U	0.0083	0.34	mg/kg		8270D	09/03/14	1
2,4-Dichlorophenol	U	0.0075	0.34	mg/kg		8270D	09/03/14	1
2,4-Dimethylphenol	U	0.047	0.34	mg/kg		8270D	09/03/14	1
4,6-Dinitro-2-methylphenol	U	0.12	0.34	mg/kg		8270D	09/03/14	1
2,4-Dinitrophenol	U	0.098	0.34	mg/kg		8270D	09/03/14	1
2-Nitrophenol	U	0.013	0.34	mg/kg		8270D	09/03/14	1
4-Nitrophenol	U	0.052	0.34	mg/kg		8270D	09/03/14	1
Pentachlorophenol	U	0.048	0.34	mg/kg		8270D	09/03/14	1
Phenol	U	0.0070	0.34	mg/kg		8270D	09/03/14	1
2,4,6-Trichlorophenol	U	0.0078	0.34	mg/kg		8270D	09/03/14	1
Surrogate Recovery								
2-Fluorophenol	48.2			% Rec.		8270D	09/03/14	1
Phenol-d5	51.5			% Rec.		8270D	09/03/14	1
Nitrobenzene-d5	52.0			% Rec.		8270D	09/03/14	1
2-Fluorobiphenyl	59.7			% Rec.		8270D	09/03/14	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 09/05/14 09:38 Printed: 09/05/14 09:38

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

September 05,2014

ESC Sample # : L717540-07

Site ID :

Project # : 20275.002.05

Date Received : August 22, 2014
Description : Nikiski Removal/Baka Hyles

Sample ID : 14-BHI-UT-02-SO

Collected By : Daniel Frank
Collection Date : 08/21/14 00:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
2,4,6-Tribromophenol	79.4			% Rec.		8270D	09/03/14	1
p-Terphenyl-d14	53.4			% Rec.		8270D	09/03/14	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 09/05/14 09:38 Printed: 09/05/14 09:38

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

September 05,2014

ESC Sample # : L717540-08

Site ID :

Project # : 20275.002.05

Date Received : August 22, 2014
Description : Nikiski Removal/Baka Hyles

Sample ID : 14-BHI-UT-03-SO

Collected By : Daniel Frank
Collection Date : 08/21/14 00:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	96.7	0.0333		%		2540 G-2	08/26/14	1
Mercury	0.019	0.0028	0.021	mg/kg	J	7471	08/26/14	1
Arsenic	1.1	0.65	2.1	mg/kg	J	6010C	08/27/14	1
Barium	69.	0.17	0.52	mg/kg		6010C	08/27/14	1
Cadmium	U	0.070	0.52	mg/kg		6010C	08/27/14	1
Chromium	16.	0.14	1.0	mg/kg		6010C	08/27/14	1
Lead	4.2	0.19	0.52	mg/kg		6010C	08/27/14	1
Nickel	14.	0.49	2.1	mg/kg		6010C	08/27/14	1
Selenium	U	0.74	2.1	mg/kg		6010C	08/27/14	1
Silver	U	0.28	1.0	mg/kg		6010C	08/27/14	1
Vanadium	42.	0.24	2.1	mg/kg		6010C	08/27/14	1
Polychlorinated Biphenyls								
PCB 1016	U	0.0065	0.018	mg/kg		8082	08/26/14	1
PCB 1221	U	0.0054	0.018	mg/kg		8082	08/26/14	1
PCB 1232	U	0.0042	0.018	mg/kg		8082	08/26/14	1
PCB 1242	U	0.0032	0.018	mg/kg		8082	08/26/14	1
PCB 1248	U	0.0032	0.018	mg/kg		8082	08/26/14	1
PCB 1254	U	0.0047	0.018	mg/kg		8082	08/26/14	1
PCB 1260	U	0.0049	0.018	mg/kg		8082	08/26/14	1
PCBs Surrogates								
Decachlorobiphenyl	77.7			% Rec.		8082	08/26/14	1
Tetrachloro-m-xylene	74.2			% Rec.		8082	08/26/14	1
Base/Neutral Extractables								
Acenaphthene	U	0.0064	0.034	mg/kg		8270D	08/30/14	1
Acenaphthylene	U	0.0067	0.034	mg/kg		8270D	08/30/14	1
Anthracene	U	0.0063	0.034	mg/kg		8270D	08/30/14	1
Benzidine	U	0.064	0.34	mg/kg		8270D	08/30/14	1
Benzo(a)anthracene	U	0.0043	0.034	mg/kg		8270D	08/30/14	1
Benzo(b)fluoranthene	U	0.0070	0.034	mg/kg		8270D	08/30/14	1
Benzo(k)fluoranthene	U	0.0058	0.034	mg/kg		8270D	08/30/14	1
Benzo(g,h,i)perylene	U	0.0072	0.034	mg/kg		8270D	08/30/14	1
Benzo(a)pyrene	U	0.0055	0.034	mg/kg		8270D	08/30/14	1
Bis(2-chlorethoxy)methane	U	0.0077	0.34	mg/kg		8270D	08/30/14	1
Bis(2-chloroethyl)ether	U	0.0090	0.34	mg/kg		8270D	08/30/14	1
Bis(2-chloroisopropyl)ether	U	0.0076	0.34	mg/kg		8270D	08/30/14	1
4-Bromophenyl-phenylether	U	0.011	0.34	mg/kg		8270D	08/30/14	1
2-Chloronaphthalene	U	0.0064	0.034	mg/kg		8270D	08/30/14	1
4-Chlorophenyl-phenylether	U	0.0063	0.34	mg/kg		8270D	08/30/14	1
Chrysene	U	0.0056	0.034	mg/kg		8270D	08/30/14	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 09/05/14 09:38 Printed: 09/05/14 09:38

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

September 05,2014

ESC Sample # : L717540-08

Site ID :

Project # : 20275.002.05

Date Received : August 22, 2014
Description : Nikiski Removal/Baka Hyles

Sample ID : 14-BHI-UT-03-SO

Collected By : Daniel Frank
Collection Date : 08/21/14 00:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Dibenz(a,h)anthracene	U	0.0082	0.034	mg/kg		8270D	08/30/14	1
3,3-Dichlorobenzidine	U	0.079	0.34	mg/kg		8270D	08/30/14	1
2,4-Dinitrotoluene	U	0.0061	0.34	mg/kg		8270D	08/30/14	1
2,6-Dinitrotoluene	U	0.0074	0.34	mg/kg		8270D	08/30/14	1
Fluoranthene	U	0.0050	0.034	mg/kg		8270D	08/30/14	1
Fluorene	U	0.0068	0.034	mg/kg		8270D	08/30/14	1
Hexachlorobenzene	U	0.0086	0.34	mg/kg		8270D	08/30/14	1
Hexachloro-1,3-butadiene	U	0.010	0.34	mg/kg		8270D	08/30/14	1
Hexachlorocyclopentadiene	U	0.059	0.34	mg/kg		8270D	08/30/14	1
Hexachloroethane	U	0.013	0.34	mg/kg		8270D	08/30/14	1
Indeno(1,2,3-cd)pyrene	U	0.0077	0.034	mg/kg		8270D	08/30/14	1
Isophorone	U	0.0052	0.34	mg/kg		8270D	08/30/14	1
Naphthalene	U	0.0089	0.034	mg/kg		8270D	08/30/14	1
Nitrobenzene	U	0.0070	0.34	mg/kg		8270D	08/30/14	1
n-Nitrosodimethylamine	U	0.065	0.34	mg/kg		8270D	08/30/14	1
n-Nitrosodiphenylamine	U	0.0059	0.34	mg/kg		8270D	08/30/14	1
n-Nitrosodi-n-propylamine	U	0.0091	0.34	mg/kg		8270D	08/30/14	1
Phenanthrene	U	0.0053	0.034	mg/kg		8270D	08/30/14	1
Benzylbutyl phthalate	U	0.010	0.34	mg/kg		8270D	08/30/14	1
Bis(2-ethylhexyl)phthalate	U	0.012	0.34	mg/kg		8270D	08/30/14	1
Di-n-butyl phthalate	U	0.011	0.34	mg/kg		8270D	08/30/14	1
Diethyl phthalate	U	0.0069	0.34	mg/kg		8270D	08/30/14	1
Dimethyl phthalate	U	0.0054	0.34	mg/kg		8270D	08/30/14	1
Di-n-octyl phthalate	U	0.0091	0.34	mg/kg	J3	8270D	08/30/14	1
Pyrene	U	0.012	0.034	mg/kg		8270D	08/30/14	1
1,2,4-Trichlorobenzene	U	0.0088	0.34	mg/kg		8270D	08/30/14	1
Acid Extractables								
4-Chloro-3-methylphenol	U	0.0048	0.34	mg/kg		8270D	08/30/14	1
2-Chlorophenol	U	0.0083	0.34	mg/kg		8270D	08/30/14	1
2,4-Dichlorophenol	U	0.0075	0.34	mg/kg		8270D	08/30/14	1
2,4-Dimethylphenol	U	0.047	0.34	mg/kg		8270D	08/30/14	1
4,6-Dinitro-2-methylphenol	U	0.12	0.34	mg/kg		8270D	08/30/14	1
2,4-Dinitrophenol	U	0.098	0.34	mg/kg		8270D	08/30/14	1
2-Nitrophenol	U	0.013	0.34	mg/kg		8270D	08/30/14	1
4-Nitrophenol	U	0.052	0.34	mg/kg		8270D	08/30/14	1
Pentachlorophenol	U	0.048	0.34	mg/kg		8270D	08/30/14	1
Phenol	U	0.0070	0.34	mg/kg		8270D	08/30/14	1
2,4,6-Trichlorophenol	U	0.0078	0.34	mg/kg		8270D	08/30/14	1
Surrogate Recovery								
2-Fluorophenol	49.7			% Rec.		8270D	08/30/14	1
Phenol-d5	50.7			% Rec.		8270D	08/30/14	1
Nitrobenzene-d5	47.8			% Rec.		8270D	08/30/14	1
2-Fluorobiphenyl	55.5			% Rec.		8270D	08/30/14	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 09/05/14 09:38 Printed: 09/05/14 09:38

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

September 05,2014

ESC Sample # : L717540-08

Site ID :

Project # : 20275.002.05

Date Received : August 22, 2014
Description : Nikiski Removal/Baka Hyles

Sample ID : 14-BHI-UT-03-SO

Collected By : Daniel Frank
Collection Date : 08/21/14 00:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
2,4,6-Tribromophenol	75.9			% Rec.		8270D	08/30/14	1
p-Terphenyl-d14	56.9			% Rec.		8270D	08/30/14	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:
This report shall not be reproduced, except in full, without the written approval from ESC.
The reported analytical results relate only to the sample submitted
Reported: 09/05/14 09:38 Printed: 09/05/14 09:38

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L717540-01	WG739381	SAMP	Mercury	R2981453	J
	WG739296	SAMP	Bis(2-ethylhexyl)phthalate	R2984529	J
	WG739296	SAMP	Di-n-octyl phthalate	R2984529	J3
L717540-02	WG739688	SAMP	Arsenic	R2981758	J
	WG739296	SAMP	Acenaphthylene	R2984529	J
	WG739296	SAMP	Naphthalene	R2984529	J
	WG739296	SAMP	Phenanthrene	R2984529	J
	WG739296	SAMP	Di-n-butyl phthalate	R2984529	J
	WG739296	SAMP	Di-n-octyl phthalate	R2984529	J3
	WG739296	SAMP	2-Fluorophenol	R2984529	J7
	WG739296	SAMP	Phenol-d5	R2984529	J7
	WG739296	SAMP	Nitrobenzene-d5	R2984529	J7
	WG739296	SAMP	2-Fluorobiphenyl	R2984529	J7
	WG739296	SAMP	2,4,6-Tribromophenol	R2984529	J7
	WG739296	SAMP	p-Terphenyl-d14	R2984529	J7
L717540-03	WG739381	SAMP	Mercury	R2981453	J
	WG739296	SAMP	Bis(2-ethylhexyl)phthalate	R2984529	J
	WG739296	SAMP	Di-n-octyl phthalate	R2984529	J3
L717540-04	WG739381	SAMP	Mercury	R2981453	J
	WG739296	SAMP	Bis(2-ethylhexyl)phthalate	R2985249	J
	WG739296	SAMP	Di-n-octyl phthalate	R2985249	JJ3
L717540-05	WG739688	SAMP	Arsenic	R2981758	J
	WG739296	SAMP	Bis(2-ethylhexyl)phthalate	R2984529	J
	WG739296	SAMP	Di-n-octyl phthalate	R2984529	J3
	WG739296	SAMP	2-Fluorophenol	R2984529	J7
	WG739296	SAMP	Phenol-d5	R2984529	J7
	WG739296	SAMP	Nitrobenzene-d5	R2984529	J7
	WG739296	SAMP	2-Fluorobiphenyl	R2984529	J7
	WG739296	SAMP	2,4,6-Tribromophenol	R2984529	J7
	WG739296	SAMP	p-Terphenyl-d14	R2984529	J7
L717540-06	WG739381	SAMP	Mercury	R2981453	J
	WG739163	SAMP	PCB 1260	R2981604	J
	WG739296	SAMP	Di-n-octyl phthalate	R2984529	J3
L717540-07	WG739688	SAMP	Arsenic	R2981758	J
	WG739296	SAMP	Bis(2-ethylhexyl)phthalate	R2985249	J
	WG739296	SAMP	Di-n-octyl phthalate	R2985249	J3
L717540-08	WG739381	SAMP	Mercury	R2981453	J
	WG739688	SAMP	Arsenic	R2981758	J
	WG739296	SAMP	Di-n-octyl phthalate	R2984529	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J3	The associated batch QC was outside the established quality control range for precision.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
09/05/14 at 09:38:53

TSR Signing Reports: 358
R5 - Desired TAT

Log all samples for QC2MODCN. PO REQUIRED (IF INVOICE EXCEEDS 3K)

Sample: L717540-01 Account: AHTNAAAK Received: 08/22/14 09:00 Due Date: 08/29/14 00:00 RPT Date: 09/05/14 09:38
SHIPPING= $150 x 1 cooler received. SHIPPINPR= $168.63 for outbound overnight delivery per DF.
Sample: L717540-02 Account: AHTNAAAK Received: 08/22/14 09:00 Due Date: 08/29/14 00:00 RPT Date: 09/05/14 09:38

Sample: L717540-03 Account: AHTNAAAK Received: 08/22/14 09:00 Due Date: 08/29/14 00:00 RPT Date: 09/05/14 09:38

Sample: L717540-04 Account: AHTNAAAK Received: 08/22/14 09:00 Due Date: 08/29/14 00:00 RPT Date: 09/05/14 09:38

Sample: L717540-05 Account: AHTNAAAK Received: 08/22/14 09:00 Due Date: 08/29/14 00:00 RPT Date: 09/05/14 09:38

Sample: L717540-06 Account: AHTNAAAK Received: 08/22/14 09:00 Due Date: 08/29/14 00:00 RPT Date: 09/05/14 09:38

Sample: L717540-07 Account: AHTNAAAK Received: 08/22/14 09:00 Due Date: 08/29/14 00:00 RPT Date: 09/05/14 09:38

Sample: L717540-08 Account: AHTNAAAK Received: 08/22/14 09:00 Due Date: 08/29/14 00:00 RPT Date: 09/05/14 09:38

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L717540

September 05, 2014

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Total Solids	< .1	%			WG739311	08/26/14 07:35
Total Solids	< .1	%			WG739330	08/26/14 07:55
Mercury	< .02	mg/kg			WG739381	08/26/14 17:44
PCB 1016	< .017	mg/kg			WG739163	08/26/14 11:09
PCB 1221	< .017	mg/kg			WG739163	08/26/14 11:09
PCB 1232	< .017	mg/kg			WG739163	08/26/14 11:09
PCB 1242	< .017	mg/kg			WG739163	08/26/14 11:09
PCB 1248	< .017	mg/kg			WG739163	08/26/14 11:09
PCB 1254	< .017	mg/kg			WG739163	08/26/14 11:09
PCB 1260	< .017	mg/kg			WG739163	08/26/14 11:09
Decachlorobiphenyl		% Rec.	74.80	10-145	WG739163	08/26/14 11:09
Tetrachloro-m-xylene		% Rec.	74.20	21.1-148	WG739163	08/26/14 11:09
Arsenic	< 2	mg/kg			WG739688	08/27/14 09:11
Barium	< .5	mg/kg			WG739688	08/27/14 09:11
Cadmium	< .5	mg/kg			WG739688	08/27/14 09:11
Chromium	< 1	mg/kg			WG739688	08/27/14 09:11
Lead	< .5	mg/kg			WG739688	08/27/14 09:11
Nickel	< 2	mg/kg			WG739688	08/27/14 09:11
Selenium	< 2	mg/kg			WG739688	08/27/14 09:11
Silver	< 1	mg/kg			WG739688	08/27/14 09:11
Vanadium	< 2	mg/kg			WG739688	08/27/14 09:11
1,2,4-Trichlorobenzene	< .333	mg/kg			WG739296	08/28/14 16:07
2,4,6-Trichlorophenol	< .333	mg/kg			WG739296	08/28/14 16:07
2,4-Dichlorophenol	< .333	mg/kg			WG739296	08/28/14 16:07
2,4-Dimethylphenol	< .333	mg/kg			WG739296	08/28/14 16:07
2,4-Dinitrophenol	< .333	mg/kg			WG739296	08/28/14 16:07
2,4-Dinitrotoluene	< .333	mg/kg			WG739296	08/28/14 16:07
2,6-Dinitrotoluene	< .333	mg/kg			WG739296	08/28/14 16:07
2-Chloronaphthalene	< .033	mg/kg			WG739296	08/28/14 16:07
2-Chlorophenol	< .333	mg/kg			WG739296	08/28/14 16:07
2-Nitrophenol	< .333	mg/kg			WG739296	08/28/14 16:07
3,3-Dichlorobenzidine	< .333	mg/kg			WG739296	08/28/14 16:07
4,6-Dinitro-2-methylphenol	< .333	mg/kg			WG739296	08/28/14 16:07
4-Bromophenyl-phenylether	< .333	mg/kg			WG739296	08/28/14 16:07
4-Chloro-3-methylphenol	< .333	mg/kg			WG739296	08/28/14 16:07
4-Chlorophenyl-phenylether	< .333	mg/kg			WG739296	08/28/14 16:07
4-Nitrophenol	< .333	mg/kg			WG739296	08/28/14 16:07
Acenaphthene	< .033	mg/kg			WG739296	08/28/14 16:07
Acenaphthylene	< .033	mg/kg			WG739296	08/28/14 16:07
Anthracene	< .033	mg/kg			WG739296	08/28/14 16:07
Benzidine	< .333	mg/kg			WG739296	08/28/14 16:07
Benzo(a)anthracene	< .033	mg/kg			WG739296	08/28/14 16:07
Benzo(a)pyrene	< .033	mg/kg			WG739296	08/28/14 16:07
Benzo(b)fluoranthene	< .033	mg/kg			WG739296	08/28/14 16:07
Benzo(g,h,i)perylene	< .033	mg/kg			WG739296	08/28/14 16:07
Benzo(k)fluoranthene	< .033	mg/kg			WG739296	08/28/14 16:07
Benzylbutyl phthalate	< .333	mg/kg			WG739296	08/28/14 16:07
Bis(2-chlorethoxy)methane	< .333	mg/kg			WG739296	08/28/14 16:07
Bis(2-chloroethyl)ether	< .333	mg/kg			WG739296	08/28/14 16:07

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L717540

September 05, 2014

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Bis(2-chloroisopropyl)ether	< .333	mg/kg			WG739296	08/28/14 16:07
Bis(2-ethylhexyl)phthalate	< .333	mg/kg			WG739296	08/28/14 16:07
Chrysene	< .033	mg/kg			WG739296	08/28/14 16:07
Di-n-butyl phthalate	< .333	mg/kg			WG739296	08/28/14 16:07
Di-n-octyl phthalate	< .333	mg/kg			WG739296	08/28/14 16:07
Dibenz(a,h)anthracene	< .033	mg/kg			WG739296	08/28/14 16:07
Diethyl phthalate	< .333	mg/kg			WG739296	08/28/14 16:07
Dimethyl phthalate	< .333	mg/kg			WG739296	08/28/14 16:07
Fluoranthene	< .033	mg/kg			WG739296	08/28/14 16:07
Fluorene	< .033	mg/kg			WG739296	08/28/14 16:07
Hexachloro-1,3-butadiene	< .333	mg/kg			WG739296	08/28/14 16:07
Hexachlorobenzene	< .333	mg/kg			WG739296	08/28/14 16:07
Hexachlorocyclopentadiene	< .333	mg/kg			WG739296	08/28/14 16:07
Hexachloroethane	< .333	mg/kg			WG739296	08/28/14 16:07
Indeno(1,2,3-cd)pyrene	< .033	mg/kg			WG739296	08/28/14 16:07
Isophorone	< .333	mg/kg			WG739296	08/28/14 16:07
n-Nitrosodi-n-propylamine	< .333	mg/kg			WG739296	08/28/14 16:07
n-Nitrosodimethylamine	< .333	mg/kg			WG739296	08/28/14 16:07
n-Nitrosodiphenylamine	< .333	mg/kg			WG739296	08/28/14 16:07
Naphthalene	< .033	mg/kg			WG739296	08/28/14 16:07
Nitrobenzene	< .333	mg/kg			WG739296	08/28/14 16:07
Pentachlorophenol	< .333	mg/kg			WG739296	08/28/14 16:07
Phenanthrene	< .033	mg/kg			WG739296	08/28/14 16:07
Phenol	< .333	mg/kg			WG739296	08/28/14 16:07
Pyrene	< .033	mg/kg			WG739296	08/28/14 16:07
2,4,6-Tribromophenol		% Rec.	78.30	21.6-142	WG739296	08/28/14 16:07
2-Fluorobiphenyl		% Rec.	65.80	34.9-129	WG739296	08/28/14 16:07
2-Fluorophenol		% Rec.	62.10	21.1-116	WG739296	08/28/14 16:07
Nitrobenzene-d5		% Rec.	58.60	21.9-129	WG739296	08/28/14 16:07
Phenol-d5		% Rec.	61.30	26.3-121	WG739296	08/28/14 16:07
p-Terphenyl-d14		% Rec.	67.60	21.5-128	WG739296	08/28/14 16:07

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Total Solids	%	96.1	95.8	0.351	5	L717540-01	WG739311
Total Solids	%	71.8	71.1	0.896	5	L717511-02	WG739330
Mercury	mg/kg	0.0250	0.0214	15.0	20	L717365-02	WG739381

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Total Solids	%	50	49.8	99.5	85-115	WG739311
Total Solids	%	50	50.0	100.	85-115	WG739330
Mercury	mg/kg	12.4	11.6	94.0	71.6-128	WG739381
PCB 1016	mg/kg	.167	0.139	83.0	63.2-118	WG739163
PCB 1260	mg/kg	.167	0.136	81.4	64.6-123	WG739163
Decachlorobiphenyl				83.70	10-145	WG739163
Tetrachloro-m-xylene				81.00	21.1-148	WG739163

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L717540

September 05, 2014

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Arsenic	mg/kg	237	240.	101.	83.1-117	WG739688
Barium	mg/kg	252	261.	103.	84.1-116	WG739688
Cadmium	mg/kg	191	193.	101.	83.2-117	WG739688
Chromium	mg/kg	128	131.	102.	81.3-118	WG739688
Lead	mg/kg	103	103.	100.	83.1-117	WG739688
Nickel	mg/kg	118	117.	99.0	82-118	WG739688
Selenium	mg/kg	110	113.	102.	78.7-122	WG739688
Silver	mg/kg	47.3	46.1	97.0	66.2-134	WG739688
Vanadium	mg/kg	119	125.	105.	79.7-120	WG739688
1,2,4-Trichlorobenzene	mg/kg	.333	0.229	68.8	39.8-100	WG739296
2,4,6-Trichlorophenol	mg/kg	.333	0.240	72.0	44.4-108	WG739296
2,4-Dichlorophenol	mg/kg	.333	0.259	77.7	46.2-109	WG739296
2,4-Dimethylphenol	mg/kg	.333	0.237	71.3	42.2-110	WG739296
2,4-Dinitrophenol	mg/kg	.333	0.126	37.8	10-105	WG739296
2,4-Dinitrotoluene	mg/kg	.333	0.284	85.3	53-112	WG739296
2,6-Dinitrotoluene	mg/kg	.333	0.287	86.1	51.6-110	WG739296
2-Chloronaphthalene	mg/kg	.333	0.238	71.5	47.1-105	WG739296
2-Chlorophenol	mg/kg	.333	0.220	66.0	40.8-103	WG739296
2-Nitrophenol	mg/kg	.333	0.259	77.9	44.2-113	WG739296
3,3-Dichlorobenzidine	mg/kg	.333	0.187	56.1	21-101	WG739296
4,6-Dinitro-2-methylphenol	mg/kg	.333	0.234	70.3	23.1-119	WG739296
4-Bromophenyl-phenylether	mg/kg	.333	0.277	83.1	51.4-110	WG739296
4-Chloro-3-methylphenol	mg/kg	.333	0.278	83.6	51.1-113	WG739296
4-Chlorophenyl-phenylether	mg/kg	.333	0.269	80.7	48.1-108	WG739296
4-Nitrophenol	mg/kg	.333	0.245	73.7	34.8-109	WG739296
Acenaphthene	mg/kg	.333	0.230	69.1	48.9-107	WG739296
Acenaphthylene	mg/kg	.333	0.229	68.7	49.2-111	WG739296
Anthracene	mg/kg	.333	0.244	73.3	52-112	WG739296
Benzidine	mg/kg	.333	0.00498	1.49	0-48	WG739296
Benzo(a)anthracene	mg/kg	.333	0.243	73.1	52.3-106	WG739296
Benzo(a)pyrene	mg/kg	.333	0.229	68.8	51.9-106	WG739296
Benzo(b)fluoranthene	mg/kg	.333	0.246	73.9	51.3-106	WG739296
Benzo(g,h,i)perylene	mg/kg	.333	0.250	75.2	45.8-108	WG739296
Benzo(k)fluoranthene	mg/kg	.333	0.239	71.8	52.9-107	WG739296
Benzylbutyl phthalate	mg/kg	.333	0.275	82.6	47.5-115	WG739296
Bis(2-chlorethoxy)methane	mg/kg	.333	0.209	62.9	44.9-108	WG739296
Bis(2-chloroethyl)ether	mg/kg	.333	0.161	48.5	32.5-112	WG739296
Bis(2-chloroisopropyl)ether	mg/kg	.333	0.209	62.6	40.4-99	WG739296
Bis(2-ethylhexyl)phthalate	mg/kg	.333	0.295	88.5	48.1-116	WG739296
Chrysene	mg/kg	.333	0.237	71.1	54.4-110	WG739296
Di-n-butyl phthalate	mg/kg	.333	0.267	80.2	49.7-113	WG739296
Di-n-octyl phthalate	mg/kg	.333	0.343	103.	49.6-112	WG739296
Dibenz(a,h)anthracene	mg/kg	.333	0.254	76.2	45.7-111	WG739296
Diethyl phthalate	mg/kg	.333	0.280	84.1	52-112	WG739296
Dimethyl phthalate	mg/kg	.333	0.267	80.2	51.4-108	WG739296
Fluoranthene	mg/kg	.333	0.242	72.7	53.7-110	WG739296
Fluorene	mg/kg	.333	0.252	75.8	51.1-109	WG739296
Hexachloro-1,3-butadiene	mg/kg	.333	0.254	76.4	41.5-112	WG739296
Hexachlorobenzene	mg/kg	.333	0.283	84.9	43.2-104	WG739296
Hexachlorocyclopentadiene	mg/kg	.333	0.172	51.6	13.5-123	WG739296
Hexachloroethane	mg/kg	.333	0.211	63.3	36.2-103	WG739296
Indeno(1,2,3-cd)pyrene	mg/kg	.333	0.255	76.5	47.5-109	WG739296
Isophorone	mg/kg	.333	0.246	73.8	28.8-104	WG739296
n-Nitrosodi-n-propylamine	mg/kg	.333	0.204	61.2	43.3-109	WG739296
n-Nitrosodimethylamine	mg/kg	.333	0.172	51.6	18.1-122	WG739296
n-Nitrosodiphenylamine	mg/kg	.333	0.247	74.2	48.8-107	WG739296
Naphthalene	mg/kg	.333	0.213	64.0	43.4-103	WG739296

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L717540

September 05, 2014

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Nitrobenzene	mg/kg	.333	0.221	66.3	40.7-109	WG739296
Pentachlorophenol	mg/kg	.333	0.178	53.4	16.2-102	WG739296
Phenanthrene	mg/kg	.333	0.233	69.9	51.6-107	WG739296
Phenol	mg/kg	.333	0.218	65.6	41.5-106	WG739296
Pyrene	mg/kg	.333	0.253	76.1	47.1-108	WG739296
2,4,6-Tribromophenol				87.00	21.6-142	WG739296
2-Fluorobiphenyl				69.00	34.9-129	WG739296
2-Fluorophenol				62.20	21.1-116	WG739296
Nitrobenzene-d5				64.10	21.9-129	WG739296
Phenol-d5				62.30	26.3-121	WG739296
p-Terphenyl-d14				69.80	21.5-128	WG739296

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
PCB 1016	mg/kg	0.139	0.139	83.0	63.2-118	0.0300	20	WG739163
PCB 1260	mg/kg	0.137	0.136	82.0	64.6-123	1.10	20.8	WG739163
Decachlorobiphenyl				86.70	10-145			WG739163
Tetrachloro-m-xylene				82.10	21.1-148			WG739163
Arsenic	mg/kg	242.	240.	102.	83.1-117	1.00	20	WG739688
Barium	mg/kg	259.	261.	103.	84.1-116	1.00	20	WG739688
Cadmium	mg/kg	194.	193.	102.	83.2-117	0.0	20	WG739688
Chromium	mg/kg	129.	131.	101.	81.3-118	1.00	20	WG739688
Lead	mg/kg	105.	103.	102.	83.1-117	2.00	20	WG739688
Nickel	mg/kg	118.	117.	100.	82-118	1.00	20	WG739688
Selenium	mg/kg	115.	113.	105.	78.7-122	2.00	20	WG739688
Silver	mg/kg	46.2	46.1	98.0	66.2-134	0.0	20	WG739688
Vanadium	mg/kg	128.	125.	108.	79.7-120	2.00	20	WG739688
1,2,4-Trichlorobenzene	mg/kg	0.221	0.229	66.0	39.8-100	3.65	20	WG739296
2,4,6-Trichlorophenol	mg/kg	0.250	0.240	75.0	44.4-108	4.03	20	WG739296
2,4-Dichlorophenol	mg/kg	0.259	0.259	78.0	46.2-109	0.210	20	WG739296
2,4-Dimethylphenol	mg/kg	0.247	0.237	74.0	42.2-110	4.10	20	WG739296
2,4-Dinitrophenol	mg/kg	0.152	0.126	46.0	10-105	18.7	36.5	WG739296
2,4-Dinitrotoluene	mg/kg	0.299	0.284	90.0	53-112	5.24	20	WG739296
2,6-Dinitrotoluene	mg/kg	0.297	0.287	89.0	51.6-110	3.59	20	WG739296
2-Chloronaphthalene	mg/kg	0.250	0.238	75.0	47.1-105	5.02	20	WG739296
2-Chlorophenol	mg/kg	0.232	0.220	70.0	40.8-103	5.45	20	WG739296
2-Nitrophenol	mg/kg	0.262	0.259	78.0	44.2-113	0.940	20.9	WG739296
3,3-Dichlorobenzidine	mg/kg	0.188	0.187	56.0	21-101	0.650	22	WG739296
4,6-Dinitro-2-methylphenol	mg/kg	0.249	0.234	75.0	23.1-119	5.95	23.7	WG739296
4-Bromophenyl-phenylether	mg/kg	0.285	0.277	86.0	51.4-110	3.06	20	WG739296
4-Chloro-3-methylphenol	mg/kg	0.278	0.278	83.0	51.1-113	0.130	20	WG739296
4-Chlorophenyl-phenylether	mg/kg	0.287	0.269	86.0	48.1-108	6.45	20	WG739296
4-Nitrophenol	mg/kg	0.247	0.245	74.0	34.8-109	0.840	20	WG739296
Acenaphthene	mg/kg	0.242	0.230	72.0	48.9-107	4.86	20	WG739296
Acenaphthylene	mg/kg	0.239	0.229	72.0	49.2-111	4.38	20	WG739296
Anthracene	mg/kg	0.244	0.244	73.0	52-112	0.120	20	WG739296
Benzidine	mg/kg	0.00570	0.00498	2.00	0-48	13.6	40	WG739296
Benzo(a)anthracene	mg/kg	0.244	0.243	73.0	52.3-106	0.450	20	WG739296
Benzo(a)pyrene	mg/kg	0.235	0.229	70.0	51.9-106	2.45	20	WG739296
Benzo(b)fluoranthene	mg/kg	0.254	0.246	76.0	51.3-106	2.96	20	WG739296
Benzo(g,h,i)perylene	mg/kg	0.253	0.250	76.0	45.8-108	1.01	20	WG739296
Benzo(k)fluoranthene	mg/kg	0.247	0.239	74.0	52.9-107	3.25	20	WG739296
Benzylbutyl phthalate	mg/kg	0.285	0.275	85.0	47.5-115	3.38	20	WG739296
Bis(2-chlorethoxy)methane	mg/kg	0.215	0.209	65.0	44.9-108	2.81	20	WG739296

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L717540

September 05, 2014

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
Bis(2-chloroethyl)ether	mg/kg	0.177	0.161	53.0	32.5-112	9.48	26	WG739296
Bis(2-chloroisopropyl)ether	mg/kg	0.218	0.209	65.0	40.4-99	4.45	20.7	WG739296
Bis(2-ethylhexyl)phthalate	mg/kg	0.309	0.295	93.0	48.1-116	4.66	20.5	WG739296
Chrysene	mg/kg	0.251	0.237	76.0	54.4-110	5.94	20	WG739296
Di-n-butyl phthalate	mg/kg	0.262	0.267	79.0	49.7-113	1.96	20	WG739296
Di-n-octyl phthalate	mg/kg	0.270	0.343	81.0	49.6-112	23.9*	22	WG739296
Dibenz(a,h)anthracene	mg/kg	0.258	0.254	78.0	45.7-111	1.74	20	WG739296
Diethyl phthalate	mg/kg	0.286	0.280	86.0	52-112	2.15	20	WG739296
Dimethyl phthalate	mg/kg	0.281	0.267	84.0	51.4-108	5.18	20	WG739296
Fluoranthene	mg/kg	0.244	0.242	73.0	53.7-110	0.740	20	WG739296
Fluorene	mg/kg	0.263	0.252	79.0	51.1-109	4.07	20	WG739296
Hexachloro-1,3-butadiene	mg/kg	0.258	0.254	77.0	41.5-112	1.43	20	WG739296
Hexachlorobenzene	mg/kg	0.286	0.283	86.0	43.2-104	1.16	20.1	WG739296
Hexachlorocyclopentadiene	mg/kg	0.174	0.172	52.0	13.5-123	1.31	20.7	WG739296
Hexachloroethane	mg/kg	0.223	0.211	67.0	36.2-103	5.59	22.7	WG739296
Indeno(1,2,3-cd)pyrene	mg/kg	0.260	0.255	78.0	47.5-109	1.93	20	WG739296
Isophorone	mg/kg	0.251	0.246	75.0	28.8-104	1.94	20	WG739296
n-Nitrosodi-n-propylamine	mg/kg	0.228	0.204	68.0	43.3-109	11.1	20	WG739296
n-Nitrosodimethylamine	mg/kg	0.185	0.172	56.0	18.1-122	7.44	23.5	WG739296
n-Nitrosodiphenylamine	mg/kg	0.251	0.247	75.0	48.8-107	1.57	20	WG739296
Naphthalene	mg/kg	0.213	0.213	64.0	43.4-103	0.150	20	WG739296
Nitrobenzene	mg/kg	0.224	0.221	67.0	40.7-109	1.67	21	WG739296
Pentachlorophenol	mg/kg	0.179	0.178	54.0	16.2-102	0.920	22.9	WG739296
Phenanthrene	mg/kg	0.232	0.233	70.0	51.6-107	0.330	20	WG739296
Phenol	mg/kg	0.235	0.218	71.0	41.5-106	7.49	20	WG739296
Pyrene	mg/kg	0.254	0.253	76.0	47.1-108	0.380	20	WG739296
2,4,6-Tribromophenol				85.70	21.6-142			WG739296
2-Fluorobiphenyl				71.00	34.9-129			WG739296
2-Fluorophenol				64.70	21.1-116			WG739296
Nitrobenzene-d5				65.10	21.9-129			WG739296
Phenol-d5				66.10	26.3-121			WG739296
p-Terphenyl-d14				77.40	21.5-128			WG739296

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Mercury	mg/kg	0.533	0.0214	.5	100.	80-120	L717365-02	WG739381
PCB 1016	mg/kg	0.111	0.0	.167	66.0	23.5-134	L717540-06	WG739163
PCB 1260	mg/kg	0.109	0.00817	.167	61.0	16.1-139	L717540-06	WG739163
Decachlorobiphenyl					69.50	10-145		WG739163
Tetrachloro-m-xylene					76.70	21.1-148		WG739163
Arsenic	mg/kg	96.2	-2.03	100	96.0	75-125	L717540-01	WG739688
Barium	mg/kg	191.	76.0	100	120.	75-125	L717540-01	WG739688
Cadmium	mg/kg	97.5	-0.116	100	98.0	75-125	L717540-01	WG739688
Chromium	mg/kg	108.	14.0	100	94.0	75-125	L717540-01	WG739688
Lead	mg/kg	103.	4.47	100	98.0	75-125	L717540-01	WG739688
Selenium	mg/kg	100.	-0.299	100	100.	75-125	L717540-01	WG739688
Silver	mg/kg	96.5	-0.504	100	96.0	75-125	L717540-01	WG739688
1,2,4-Trichlorobenzene	mg/kg	0.248	0.0	.333	74.0	36.5-114	L717824-11	WG739296
2,4,6-Trichlorophenol	mg/kg	0.250	0.0	.333	75.0	33.8-133	L717824-11	WG739296
2,4-Dichlorophenol	mg/kg	0.271	0.0	.333	82.0	34.8-134	L717824-11	WG739296
2,4-Dimethylphenol	mg/kg	0.262	0.0	.333	79.0	12.3-149	L717824-11	WG739296
2,4-Dinitrophenol	mg/kg	0.226	0.0	.333	68.0	10-121	L717824-11	WG739296

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L717540

September 05, 2014

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
2,4-Dinitrotoluene	mg/kg	0.297	0.0	.333	89.0	27.8-147	L717824-11	WG739296
2,6-Dinitrotoluene	mg/kg	0.285	0.0	.333	86.0	36.5-137	L717824-11	WG739296
2-Chloronaphthalene	mg/kg	0.237	0.0	.333	71.0	37.5-123	L717824-11	WG739296
2-Chlorophenol	mg/kg	0.244	0.0	.333	73.0	33.2-121	L717824-11	WG739296
2-Nitrophenol	mg/kg	0.275	0.0	.333	82.0	29.5-144	L717824-11	WG739296
3,3-Dichlorobenzidine	mg/kg	0.226	0.0	.333	68.0	10-129	L717824-11	WG739296
4,6-Dinitro-2-methylphenol	mg/kg	0.281	0.0	.333	84.0	10-144	L717824-11	WG739296
4-Bromophenyl-phenylether	mg/kg	0.276	0.0	.333	83.0	39-130	L717824-11	WG739296
4-Chloro-3-methylphenol	mg/kg	0.299	0.0	.333	90.0	27-154	L717824-11	WG739296
4-Chlorophenyl-phenylether	mg/kg	0.270	0.0	.333	81.0	37.9-123	L717824-11	WG739296
4-Nitrophenol	mg/kg	0.249	0.0	.333	75.0	20-133	L717824-11	WG739296
Acenaphthene	mg/kg	0.233	0.0	.333	70.0	32.2-134	L717824-11	WG739296
Acenaphthylene	mg/kg	0.235	0.0	.333	70.0	38.7-129	L717824-11	WG739296
Anthracene	mg/kg	0.246	0.0	.333	74.0	32.3-137	L717824-11	WG739296
Benzidine	mg/kg	0.0	0.0	.333	0.0	0-49.9	L717824-11	WG739296
Benzo(a)anthracene	mg/kg	0.233	0.0	.333	70.0	33.3-124	L717824-11	WG739296
Benzo(a)pyrene	mg/kg	0.227	0.0	.333	68.0	28.2-128	L717824-11	WG739296
Benzo(b)fluoranthene	mg/kg	0.238	0.0	.333	71.0	23.3-133	L717824-11	WG739296
Benzo(g,h,i)perylene	mg/kg	0.254	0.0	.333	76.0	10-127	L717824-11	WG739296
Benzo(k)fluoranthene	mg/kg	0.251	0.0	.333	75.0	31-129	L717824-11	WG739296
Benzylbutyl phthalate	mg/kg	0.273	0.0	.333	82.0	33.4-128	L717824-11	WG739296
Bis(2-chlorethoxy)methane	mg/kg	0.237	0.0	.333	71.0	35-132	L717824-11	WG739296
Bis(2-chloroethyl)ether	mg/kg	0.178	0.0	.333	53.0	28.8-128	L717824-11	WG739296
Bis(2-chloroisopropyl)ether	mg/kg	0.230	0.0	.333	69.0	31.8-118	L717824-11	WG739296
Bis(2-ethylhexyl)phthalate	mg/kg	0.281	0.00485	.333	83.0	21.8-141	L717824-11	WG739296
Chrysene	mg/kg	0.237	0.0	.333	71.0	36.3-129	L717824-11	WG739296
Di-n-butyl phthalate	mg/kg	0.263	0.0	.333	79.0	32.2-133	L717824-11	WG739296
Di-n-octyl phthalate	mg/kg	0.259	0.0	.333	78.0	28.5-128	L717824-11	WG739296
Dibenz(a,h)anthracene	mg/kg	0.251	0.0	.333	75.0	10.5-128	L717824-11	WG739296
Diethyl phthalate	mg/kg	0.271	0.0	.333	82.0	39.4-136	L717824-11	WG739296
Dimethyl phthalate	mg/kg	0.262	0.0	.333	79.0	35.8-137	L717824-11	WG739296
Fluoranthene	mg/kg	0.236	0.0	.333	71.0	27.9-138	L717824-11	WG739296
Fluorene	mg/kg	0.251	0.0	.333	75.0	34-133	L717824-11	WG739296
Hexachloro-1,3-butadiene	mg/kg	0.266	0.0	.333	80.0	36.5-125	L717824-11	WG739296
Hexachlorobenzene	mg/kg	0.278	0.0	.333	84.0	34.4-116	L717824-11	WG739296
Hexachlorocyclopentadiene	mg/kg	0.165	0.0	.333	50.0	10-124	L717824-11	WG739296
Hexachloroethane	mg/kg	0.243	0.0	.333	73.0	11.3-143	L717824-11	WG739296
Indeno(1,2,3-cd)pyrene	mg/kg	0.251	0.0	.333	75.0	10-128	L717824-11	WG739296
Isophorone	mg/kg	0.260	0.0	.333	78.0	25.7-116	L717824-11	WG739296
n-Nitrosodi-n-propylamine	mg/kg	0.234	0.0	.333	70.0	33-134	L717824-11	WG739296
n-Nitrosodimethylamine	mg/kg	0.198	0.0	.333	60.0	19.2-127	L717824-11	WG739296
n-Nitrosodiphenylamine	mg/kg	0.258	0.0	.333	77.0	26.8-133	L717824-11	WG739296
Naphthalene	mg/kg	0.231	0.00912	.333	66.0	36.4-121	L717824-11	WG739296
Nitrobenzene	mg/kg	0.241	0.0	.333	72.0	30.9-134	L717824-11	WG739296
Pentachlorophenol	mg/kg	0.213	0.0	.333	64.0	10-139	L717824-11	WG739296
Phenanthrene	mg/kg	0.240	0.0	.333	72.0	30.8-137	L717824-11	WG739296
Phenol	mg/kg	0.238	0.0	.333	71.0	25.1-130	L717824-11	WG739296
Pyrene	mg/kg	0.243	0.0	.333	73.0	24.1-130	L717824-11	WG739296
2,4,6-Tribromophenol					92.20	21.6-142		WG739296
2-Fluorobiphenyl					69.40	34.9-129		WG739296
2-Fluorophenol					69.40	21.1-116		WG739296
Nitrobenzene-d5					69.40	21.9-129		WG739296
Phenol-d5					68.00	26.3-121		WG739296
p-Terphenyl-d14					65.80	21.5-128		WG739296

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Mercury	mg/kg	0.518	0.533	99.4	80-120	3.00	20	L717365-02	WG739381

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L717540

September 05, 2014

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
PCB 1016	mg/kg	0.111	0.111	66.4	23.5-134	0.150	25.8	L717540-06	WG739163
PCB 1260	mg/kg	0.108	0.109	59.9	16.1-139	0.980	25.9	L717540-06	WG739163
Decachlorobiphenyl				68.10	10-145				WG739163
Tetrachloro-m-xylene				76.90	21.1-148				WG739163
Arsenic	mg/kg	95.8	96.2	97.8	75-125	0.0	20	L717540-01	WG739688
Barium	mg/kg	182.	191.	106.	75-125	5.00	20	L717540-01	WG739688
Cadmium	mg/kg	97.2	97.5	97.3	75-125	0.0	20	L717540-01	WG739688
Chromium	mg/kg	111.	108.	97.2	75-125	3.00	20	L717540-01	WG739688
Lead	mg/kg	102.	103.	97.4	75-125	1.00	20	L717540-01	WG739688
Selenium	mg/kg	99.9	100.	100.	75-125	0.0	20	L717540-01	WG739688
Silver	mg/kg	96.3	96.5	96.8	75-125	0.0	20	L717540-01	WG739688
1,2,4-Trichlorobenzene	mg/kg	0.234	0.248	70.4	36.5-114	5.70	28.4	L717824-11	WG739296
2,4,6-Trichlorophenol	mg/kg	0.249	0.250	74.7	33.8-133	0.540	28.1	L717824-11	WG739296
2,4-Dichlorophenol	mg/kg	0.248	0.271	74.5	34.8-134	9.01	27.3	L717824-11	WG739296
2,4-Dimethylphenol	mg/kg	0.221	0.262	66.4	12.3-149	16.9	32.3	L717824-11	WG739296
2,4-Dinitrophenol	mg/kg	0.224	0.226	67.4	10-121	0.510	39.4	L717824-11	WG739296
2,4-Dinitrotoluene	mg/kg	0.279	0.297	83.8	27.8-147	6.24	29.7	L717824-11	WG739296
2,6-Dinitrotoluene	mg/kg	0.272	0.285	81.6	36.5-137	4.87	29.7	L717824-11	WG739296
2-Chloronaphthalene	mg/kg	0.241	0.237	72.5	37.5-123	1.64	26.5	L717824-11	WG739296
2-Chlorophenol	mg/kg	0.232	0.244	69.7	33.2-121	4.80	29.3	L717824-11	WG739296
2-Nitrophenol	mg/kg	0.279	0.275	83.7	29.5-144	1.35	29.9	L717824-11	WG739296
3,3-Dichlorobenzidine	mg/kg	0.197	0.226	59.3	10-129	13.5	40	L717824-11	WG739296
4,6-Dinitro-2-methylphenol	mg/kg	0.268	0.281	80.6	10-144	4.70	32.7	L717824-11	WG739296
4-Bromophenyl-phenylether	mg/kg	0.262	0.276	78.7	39-130	5.15	26	L717824-11	WG739296
4-Chloro-3-methylphenol	mg/kg	0.275	0.299	82.5	27-154	8.32	26.6	L717824-11	WG739296
4-Chlorophenyl-phenylether	mg/kg	0.273	0.270	81.8	37.9-123	0.860	25.9	L717824-11	WG739296
4-Nitrophenol	mg/kg	0.243	0.249	73.0	20-133	2.33	30.2	L717824-11	WG739296
Acenaphthene	mg/kg	0.233	0.233	70.0	32.2-134	0.190	27.3	L717824-11	WG739296
Acenaphthylene	mg/kg	0.231	0.235	69.4	38.7-129	1.45	25.9	L717824-11	WG739296
Anthracene	mg/kg	0.224	0.246	67.2	32.3-137	9.23	28.4	L717824-11	WG739296
Benzidine	mg/kg	0.0	0.0	0.00	0-49.9	0.0	40	L717824-11	WG739296
Benzo(a)anthracene	mg/kg	0.226	0.233	67.8	33.3-124	3.23	29	L717824-11	WG739296
Benzo(a)pyrene	mg/kg	0.217	0.227	65.1	28.2-128	4.54	28.4	L717824-11	WG739296
Benzo(b)fluoranthene	mg/kg	0.236	0.238	70.8	23.3-133	0.760	30.3	L717824-11	WG739296
Benzo(g,h,i)perylene	mg/kg	0.238	0.254	71.6	10-127	6.54	31.9	L717824-11	WG739296
Benzo(k)fluoranthene	mg/kg	0.221	0.251	66.5	31-129	12.5	26.7	L717824-11	WG739296
Benzylbutyl phthalate	mg/kg	0.256	0.273	76.9	33.4-128	6.20	28.5	L717824-11	WG739296
Bis(2-chlorethoxy)methane	mg/kg	0.214	0.237	64.2	35-132	10.3	26.1	L717824-11	WG739296
Bis(2-chloroethyl)ether	mg/kg	0.171	0.178	51.4	28.8-128	3.57	33.6	L717824-11	WG739296
Bis(2-chloroisopropyl)ether	mg/kg	0.216	0.230	64.8	31.8-118	6.38	31.7	L717824-11	WG739296
Bis(2-ethylhexyl)phthalate	mg/kg	0.286	0.281	84.5	21.8-141	1.84	35.2	L717824-11	WG739296
Chrysene	mg/kg	0.227	0.237	68.1	36.3-129	4.53	28	L717824-11	WG739296
Di-n-butyl phthalate	mg/kg	0.244	0.263	73.3	32.2-133	7.37	25.9	L717824-11	WG739296
Di-n-octyl phthalate	mg/kg	0.246	0.259	73.9	28.5-128	5.29	32.5	L717824-11	WG739296
Dibenz(a,h)anthracene	mg/kg	0.237	0.251	71.2	10.5-128	5.77	29.5	L717824-11	WG739296
Diethyl phthalate	mg/kg	0.273	0.271	81.9	39.4-136	0.510	25.5	L717824-11	WG739296
Dimethyl phthalate	mg/kg	0.249	0.262	74.7	35.8-137	5.15	25.4	L717824-11	WG739296
Fluoranthene	mg/kg	0.215	0.236	64.4	27.9-138	9.50	26.9	L717824-11	WG739296
Fluorene	mg/kg	0.245	0.251	73.5	34-133	2.26	27.1	L717824-11	WG739296
Hexachloro-1,3-butadiene	mg/kg	0.247	0.266	74.2	36.5-125	7.52	29.7	L717824-11	WG739296
Hexachlorobenzene	mg/kg	0.261	0.278	78.4	34.4-116	6.32	25.4	L717824-11	WG739296
Hexachlorocyclopentadiene	mg/kg	0.170	0.165	51.0	10-124	2.88	37.5	L717824-11	WG739296
Hexachloroethane	mg/kg	0.228	0.243	68.3	11.3-143	6.68	31.9	L717824-11	WG739296
Indeno(1,2,3-cd)pyrene	mg/kg	0.242	0.251	72.7	10-128	3.64	31.5	L717824-11	WG739296
Isophorone	mg/kg	0.243	0.260	73.0	25.7-116	6.90	27.7	L717824-11	WG739296

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L717540

September 05, 2014

		Matrix Spike Duplicate							
Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
n-Nitrosodi-n-propylamine	mg/kg	0.223	0.234	67.0	33-134	4.48	28.2	L717824-11	WG739296
n-Nitrosodimethylamine	mg/kg	0.170	0.198	50.9	19.2-127	15.5	32	L717824-11	WG739296
n-Nitrosodiphenylamine	mg/kg	0.232	0.258	69.8	26.8-133	10.4	25.9	L717824-11	WG739296
Naphthalene	mg/kg	0.218	0.231	62.8	36.4-121	5.57	27.2	L717824-11	WG739296
Nitrobenzene	mg/kg	0.222	0.241	66.7	30.9-134	8.28	27.8	L717824-11	WG739296
Pentachlorophenol	mg/kg	0.200	0.213	60.0	10-139	6.28	28.3	L717824-11	WG739296
Phenanthrene	mg/kg	0.229	0.240	68.9	30.8-137	4.33	26.5	L717824-11	WG739296
Phenol	mg/kg	0.213	0.238	64.0	25.1-130	10.9	29.6	L717824-11	WG739296
Pyrene	mg/kg	0.233	0.243	69.9	24.1-130	4.43	29.9	L717824-11	WG739296
2,4,6-Tribromophenol				87.20	21.6-142				WG739296
2-Fluorobiphenyl				67.30	34.9-129				WG739296
2-Fluorophenol				63.80	21.1-116				WG739296
Nitrobenzene-d5				65.50	21.9-129				WG739296
Phenol-d5				63.80	26.3-121				WG739296
p-Terphenyl-d14				59.80	21.5-128				WG739296

Post Spike

Serial Dilution

Batch number /Run number / Sample number cross reference

WG739311: R2980946: L717540-01 02 03
WG739330: R2980953: L717540-04 05 06 07 08
WG739381: R2981453: L717540-01 02 03 04 05 06 07 08
WG739163: R2981604 R2981635: L717540-06 07 08
WG739688: R2981758: L717540-01 02 03 04 05 06 07 08
WG739296: R2984154 R2984529 R2985249 R2985273: L717540-01 02 03 04 05 06 07 08

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L717540

September 05, 2014

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

Report Summary

Friday September 12, 2014

Report Number: L719994
Samples Received: 08/22/14
Client Project: 20275.002.05

Description: Nikiski Removal/Baka Hyles

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: _____

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

This report may not be reproduced, except in full, without written approval from ESC Lab Sciences.
Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

September 12,2014

ESC Sample # : L719994-01

Site ID :

Project : 20275.002.05

Date Received : August 22, 2014
Description : Nikiski Removal/Baka Hyles

Sample ID : 14-BHI-SP-03-SO

Collected By : Daniel Frank
Collection Date : 08/21/14 00:00

Parameter	Result	Det. Limit	Units	Limit	Method	Date/Time	By	Dil
TCLP Extraction	-				1311	09/09/14 0750	LJN	1
Mercury	BDL	0.010	mg/l	0.20	7470A	09/09/14 1442	BRJ	1
Arsenic	BDL	0.45	mg/l	5.0	6010C	09/10/14 2343	ST	1
Barium	2.5	1.4	mg/l	100	6010C	09/10/14 2343	ST	1
Cadmium	BDL	0.45	mg/l	1.0	6010C	09/10/14 2343	ST	1
Chromium	BDL	0.45	mg/l	5.0	6010C	09/10/14 2343	ST	1
Lead	0.69	0.45	mg/l	5.0	6010C	09/10/14 2343	ST	1
Selenium	BDL	0.45	mg/l	1.0	6010C	09/10/14 2343	ST	1
Silver	BDL	0.45	mg/l	5.0	6010C	09/10/14 2343	ST	1
TCLP ZHE Extraction	-				1311	09/09/14 0750	LJN	1
TCLP Volatiles								
Benzene	BDL	0.050	mg/l	0.50	8260B	09/09/14 1550	JC	1
Carbon tetrachloride	BDL	0.050	mg/l	0.50	8260B	09/09/14 1550	JC	1
Chlorobenzene	BDL	0.050	mg/l	100	8260B	09/09/14 1550	JC	1
Chloroform	BDL	0.25	mg/l	6.0	8260B	09/09/14 1550	JC	1
1,2-Dichloroethane	BDL	0.050	mg/l	0.50	8260B	09/09/14 1550	JC	1
1,1-Dichloroethene	BDL	0.050	mg/l	0.70	8260B	09/09/14 1550	JC	1
2-Butanone (MEK)	BDL	0.50	mg/l	200	8260B	09/09/14 1550	JC	1
Tetrachloroethene	BDL	0.050	mg/l	0.70	8260B	09/09/14 1550	JC	1
Trichloroethene	BDL	0.050	mg/l	0.50	8260B	09/09/14 1550	JC	1
Vinyl chloride	BDL	0.050	mg/l	0.20	8260B	09/09/14 1550	JC	1
Surrogate Recovery								
Toluene-d8	97.3		% Rec.	114.	8260B	09/09/14 1550	JC	1
Dibromofluoromethane	94.7		% Rec.	125.	8260B	09/09/14 1550	JC	1
a,a,a-Trifluorotoluene	98.7		% Rec.	114.	8260B	09/09/14 1550	JC	1
4-Bromofluorobenzene	91.0		% Rec.	128.	8260B	09/09/14 1550	JC	1
TCLP Semi-Volatiles								
1,4-Dichlorobenzene	BDL	0.10	mg/l	7.5	8270C	09/12/14 0421	KMF	1
2,4-Dinitrotoluene	BDL	0.10	mg/l	0.13	8270C	09/12/14 0421	KMF	1
Hexachlorobenzene	BDL	0.10	mg/l	0.13	8270C	09/12/14 0421	KMF	1
Hexachloro-1,3-butadiene	BDL	0.10	mg/l	0.50	8270C	09/12/14 0421	KMF	1
Hexachloroethane	BDL	0.10	mg/l	3.0	8270C	09/12/14 0421	KMF	1
Nitrobenzene	BDL	0.10	mg/l	2.0	8270C	09/12/14 0421	KMF	1
Pyridine	BDL	0.10	mg/l	5.0	8270C	09/12/14 0421	KMF	1
3&4-Methyl Phenol	BDL	0.10	mg/l	400	8270C	09/12/14 0421	KMF	1
2-Methylphenol	BDL	0.10	mg/l	200	8270C	09/12/14 0421	KMF	1
Pentachlorophenol	BDL	0.10	mg/l	100	8270C	09/12/14 0421	KMF	1
2,4,5-Trichlorophenol	BDL	0.10	mg/l	400	8270C	09/12/14 0421	KMF	1

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Dan Frank
Ahtna Engineering Services - AK
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

September 12,2014

ESC Sample # : L719994-01

Site ID :

Project : 20275.002.05

Date Received : August 22, 2014
Description : Nikiski Removal/Baka Hyles

Sample ID : 14-BHI-SP-03-SO

Collected By : Daniel Frank
Collection Date : 08/21/14 00:00

Parameter	Result	Det. Limit	Units	Limit	Method	Date/Time	By	Dil
2,4,6-Trichlorophenol	BDL	0.10	mg/l	2.0	8270C	09/12/14 0421	KMF	1
Surrogate Recovery								
2-Fluorophenol	56.5		% Rec.	87.0	8270C	09/12/14 0421	KMF	1
Phenol-d5	40.0		% Rec.	67.0	8270C	09/12/14 0421	KMF	1
Nitrobenzene-d5	71.0		% Rec.	120.	8270C	09/12/14 0421	KMF	1
2-Fluorobiphenyl	82.7		% Rec.	122.	8270C	09/12/14 0421	KMF	1
2,4,6-Tribromophenol	83.9		% Rec.	148.	8270C	09/12/14 0421	KMF	1
p-Terphenyl-d14	74.2		% Rec.	149.	8270C	09/12/14 0421	KMF	1

BDL - Below Detection Limit
Det. Limit - Estimated Quantitation Limit(EQL)
Limit - Maximum Contaminant Level as established by the US EPA
Note:
The reported analytical results relate only to the sample submitted.
This report shall not be reproduced, except in full, without the written approval from ESC.
.
Reported: 09/12/14 16:52 Printed: 09/12/14 16:53

Summary of Remarks For Samples Printed
09/12/14 at 16:53:06

TSR Signing Reports: 358
R5 - Desired TAT

Log all samples for QC2MODCN. PO REQUIRED (IF INVOICE EXCEEDS 3K)

Sample: L719994-01 Account: AHTNAAAK Received: 08/22/14 09:00 Due Date: 09/12/14 00:00 RPT Date: 09/12/14 16:52
Relogged from L717540-02. AV 9/5

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A
Anchorage, AK 99503

Quality Assurance Report
Level II

L719994

September 12, 2014

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Mercury	< .01	mg/l			WG741716	09/09/14 13:29
1,1-Dichloroethene	< .05	mg/l			WG741835	09/09/14 14:00
1,2-Dichloroethane	< .05	mg/l			WG741835	09/09/14 14:00
2-Butanone (MEK)	< .5	mg/l			WG741835	09/09/14 14:00
Benzene	< .05	mg/l			WG741835	09/09/14 14:00
Carbon tetrachloride	< .05	mg/l			WG741835	09/09/14 14:00
Chlorobenzene	< .05	mg/l			WG741835	09/09/14 14:00
Chloroform	< .25	mg/l			WG741835	09/09/14 14:00
Tetrachloroethene	< .05	mg/l			WG741835	09/09/14 14:00
Trichloroethene	< .05	mg/l			WG741835	09/09/14 14:00
Vinyl chloride	< .05	mg/l			WG741835	09/09/14 14:00
4-Bromofluorobenzene		% Rec.	90.40	71-126	WG741835	09/09/14 14:00
Dibromofluoromethane		% Rec.	93.20	78.3-121	WG741835	09/09/14 14:00
Toluene-d8		% Rec.	96.50	88.5-111	WG741835	09/09/14 14:00
a,a,a-Trifluorotoluene		% Rec.	97.70	85-114	WG741835	09/09/14 14:00
Arsenic	< .45	mg/l			WG741828	09/10/14 23:29
Barium	< 1.35	mg/l			WG741828	09/10/14 23:29
Cadmium	< .45	mg/l			WG741828	09/10/14 23:29
Chromium	< .45	mg/l			WG741828	09/10/14 23:29
Lead	< .45	mg/l			WG741828	09/10/14 23:29
Selenium	< .45	mg/l			WG741828	09/10/14 23:29
Silver	< .45	mg/l			WG741828	09/10/14 23:29
1,4-Dichlorobenzene	< .1	mg/l			WG742164	09/12/14 04:41
2,4,5-Trichlorophenol	< .1	mg/l			WG742164	09/12/14 04:41
2,4,6-Trichlorophenol	< .1	mg/l			WG742164	09/12/14 04:41
2,4-Dinitrotoluene	< .1	mg/l			WG742164	09/12/14 04:41
2-Methylphenol	< .1	mg/l			WG742164	09/12/14 04:41
3&4-Methyl Phenol	< .1	mg/l			WG742164	09/12/14 04:41
Hexachloro-1,3-butadiene	< .1	mg/l			WG742164	09/12/14 04:41
Hexachlorobenzene	< .1	mg/l			WG742164	09/12/14 04:41
Hexachloroethane	< .1	mg/l			WG742164	09/12/14 04:41
Nitrobenzene	< .1	mg/l			WG742164	09/12/14 04:41
Pentachlorophenol	< .1	mg/l			WG742164	09/12/14 04:41
Pyridine	< .1	mg/l			WG742164	09/12/14 04:41
2,4,6-Tribromophenol		% Rec.	83.90	11.2-130	WG742164	09/12/14 04:41
2-Fluorobiphenyl		% Rec.	78.40	29.5-131	WG742164	09/12/14 04:41
2-Fluorophenol		% Rec.	59.10	10-77.9	WG742164	09/12/14 04:41
Nitrobenzene-d5		% Rec.	66.80	21.8-123	WG742164	09/12/14 04:41
Phenol-d5		% Rec.	39.70	5-70.1	WG742164	09/12/14 04:41
p-Terphenyl-d14		% Rec.	69.70	29.3-137	WG742164	09/12/14 04:41

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Mercury	mg/l	0.0	0.000111	0.0	20	L720196-01	WG741716

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Mercury	mg/l	.03	0.0273	91.0	85-115	WG741716
1,1-Dichloroethene	mg/l	.025	0.0215	86.1	67.8-129	WG741835

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L719994

September 12, 2014

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
1,2-Dichloroethane	mg/l	.025	0.0231	92.3	68.8-124	WG741835
2-Butanone (MEK)	mg/l	.125	0.132	106.	55-149	WG741835
Benzene	mg/l	.025	0.0249	99.7	74.8-121	WG741835
Carbon tetrachloride	mg/l	.025	0.0225	90.0	70.2-123	WG741835
Chlorobenzene	mg/l	.025	0.0238	95.3	78.1-119	WG741835
Chloroform	mg/l	.025	0.0224	89.5	76-121	WG741835
Tetrachloroethene	mg/l	.025	0.0238	95.2	72.6-126	WG741835
Trichloroethene	mg/l	.025	0.0250	100.	77.7-118	WG741835
Vinyl chloride	mg/l	.025	0.0230	92.2	65.9-128	WG741835
4-Bromofluorobenzene				93.20	71-126	WG741835
Dibromofluoromethane				97.30	78.3-121	WG741835
Toluene-d8				98.30	88.5-111	WG741835
a,a,a-Trifluorotoluene				99.70	85-114	WG741835
Arsenic	mg/l	9	9.09	101.	80-120	WG741828
Barium	mg/l	9	9.08	101.	80-120	WG741828
Cadmium	mg/l	9	9.11	101.	80-120	WG741828
Chromium	mg/l	9	8.93	99.0	80-120	WG741828
Lead	mg/l	9	9.21	102.	80-120	WG741828
Selenium	mg/l	9	8.95	99.0	80-120	WG741828
Silver	mg/l	9	8.74	97.0	80-120	WG741828
1,4-Dichlorobenzene	mg/l	.025	0.0155	62.2	21-89.4	WG742164
2,4,5-Trichlorophenol	mg/l	.025	0.0194	77.8	34.9-112	WG742164
2,4,6-Trichlorophenol	mg/l	.025	0.0183	73.0	29.8-107	WG742164
2,4-Dinitrotoluene	mg/l	.025	0.0176	70.3	31.2-105	WG742164
2-Methylphenol	mg/l	.025	0.0152	60.9	26.4-86.9	WG742164
3&4-Methyl Phenol	mg/l	.025	0.0165	66.2	27.9-92	WG742164
Hexachloro-1,3-butadiene	mg/l	.025	0.0157	62.9	16.1-104	WG742164
Hexachlorobenzene	mg/l	.025	0.0190	76.1	38.5-116	WG742164
Hexachloroethane	mg/l	.025	0.0151	60.5	16.5-89.8	WG742164
Nitrobenzene	mg/l	.025	0.0173	69.3	31.4-106	WG742164
Pentachlorophenol	mg/l	.025	0.0128	51.3	10-97.4	WG742164
Pyridine	mg/l	.025	0.00904	36.2	13.5-58.9	WG742164
2,4,6-Tribromophenol				87.40	11.2-130	WG742164
2-Fluorobiphenyl				72.30	29.5-131	WG742164
2-Fluorophenol				51.20	10-77.9	WG742164
Nitrobenzene-d5				61.00	21.8-123	WG742164
Phenol-d5				36.70	5-70.1	WG742164
p-Terphenyl-d14				64.60	29.3-137	WG742164

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,1-Dichloroethene	mg/l	0.0209	0.0215	84.0	67.8-129	2.94	20	WG741835
1,2-Dichloroethane	mg/l	0.0229	0.0231	91.0	68.8-124	0.930	20	WG741835
2-Butanone (MEK)	mg/l	0.127	0.132	102.	55-149	3.77	20	WG741835
Benzene	mg/l	0.0249	0.0249	100.	74.8-121	0.130	20	WG741835
Carbon tetrachloride	mg/l	0.0220	0.0225	88.0	70.2-123	2.35	20	WG741835
Chlorobenzene	mg/l	0.0240	0.0238	96.0	78.1-119	0.970	20	WG741835
Chloroform	mg/l	0.0221	0.0224	88.0	76-121	1.21	20	WG741835
Tetrachloroethene	mg/l	0.0242	0.0238	97.0	72.6-126	1.65	20	WG741835
Trichloroethene	mg/l	0.0243	0.0250	97.0	77.7-118	2.73	20	WG741835
Vinyl chloride	mg/l	0.0230	0.0230	92.0	65.9-128	0.0900	20	WG741835
4-Bromofluorobenzene				93.20	71-126			WG741835
Dibromofluoromethane				95.80	78.3-121			WG741835
Toluene-d8				98.80	88.5-111			WG741835

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L719994

September 12, 2014

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
a,a,a-Trifluorotoluene				99.50	85-114			
Arsenic	mg/l	9.13	9.09	101.	80-120	0.0	20	WG741828
Barium	mg/l	9.14	9.08	102.	80-120	1.00	20	WG741828
Cadmium	mg/l	9.18	9.11	102.	80-120	1.00	20	WG741828
Chromium	mg/l	8.99	8.93	100.	80-120	1.00	20	WG741828
Lead	mg/l	9.24	9.21	103.	80-120	0.0	20	WG741828
Selenium	mg/l	8.95	8.95	99.0	80-120	0.0	20	WG741828
Silver	mg/l	8.80	8.74	98.0	80-120	1.00	20	WG741828
1,4-Dichlorobenzene	mg/l	0.0169	0.0155	67.0	21-89.4	8.13	32.6	WG742164
2,4,5-Trichlorophenol	mg/l	0.0223	0.0194	89.0	34.9-112	13.5	23.9	WG742164
2,4,6-Trichlorophenol	mg/l	0.0217	0.0183	87.0	29.8-107	17.2	24.1	WG742164
2,4-Dinitrotoluene	mg/l	0.0208	0.0176	83.0	31.2-105	17.0	22	WG742164
2-Methylphenol	mg/l	0.0172	0.0152	69.0	26.4-86.9	12.3	26.5	WG742164
3&4-Methyl Phenol	mg/l	0.0195	0.0165	78.0	27.9-92	16.4	27	WG742164
Hexachloro-1,3-butadiene	mg/l	0.0178	0.0157	71.0	16.1-104	12.3	31.2	WG742164
Hexachlorobenzene	mg/l	0.0205	0.0190	82.0	38.5-116	7.27	20.1	WG742164
Hexachloroethane	mg/l	0.0171	0.0151	68.0	16.5-89.8	12.0	30.7	WG742164
Nitrobenzene	mg/l	0.0184	0.0173	74.0	31.4-106	6.18	25.7	WG742164
Pentachlorophenol	mg/l	0.0182	0.0128	73.0	10-97.4	34.4	35.1	WG742164
Pyridine	mg/l	0.00979	0.00904	39.0	13.5-58.9	8.00	32.5	WG742164
2,4,6-Tribromophenol				91.90	11.2-130			WG742164
2-Fluorobiphenyl				81.10	29.5-131			WG742164
2-Fluorophenol				55.70	10-77.9			WG742164
Nitrobenzene-d5				65.40	21.8-123			WG742164
Phenol-d5				42.30	5-70.1			WG742164
p-Terphenyl-d14				72.30	29.3-137			WG742164

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Mercury	mg/l	0.0278	0.000111	.03	92.0	80-120	L720196-01	WG741716
Mercury	mg/l	0.0299	0.000125	.03	99.0	80-120	L720377-02	WG741716
1,1-Dichloroethene	mg/l	1.01	0.0	1.25	81.0	51.1-140	L719894-01	WG741835
1,2-Dichloroethane	mg/l	1.11	0.0	1.25	89.0	60-126	L719894-01	WG741835
2-Butanone (MEK)	mg/l	6.06	0.0	6.25	97.0	22.4-138	L719894-01	WG741835
Benzene	mg/l	1.22	0.0	1.25	98.0	54.3-133	L719894-01	WG741835
Carbon tetrachloride	mg/l	1.12	0.0	1.25	90.0	55.7-134	L719894-01	WG741835
Chlorobenzene	mg/l	1.21	0.0	1.25	97.0	67-125	L719894-01	WG741835
Chloroform	mg/l	1.09	0.0	1.25	88.0	63-129	L719894-01	WG741835
Tetrachloroethene	mg/l	1.21	0.0	1.25	97.0	53-139	L719894-01	WG741835
Trichloroethene	mg/l	1.21	0.0	1.25	97.0	44.1-149	L719894-01	WG741835
Vinyl chloride	mg/l	1.07	0.0	1.25	85.0	47.8-137	L719894-01	WG741835
4-Bromofluorobenzene					93.10	71-126		WG741835
Dibromofluoromethane					93.90	78.3-121		WG741835
Toluene-d8					99.30	88.5-111		WG741835
a,a,a-Trifluorotoluene					101.0	85-114		WG741835
1,1-Dichloroethene	mg/l	0.988	0.0	1.25	79.0	51.1-140	L720006-01	WG741835
1,2-Dichloroethane	mg/l	1.13	0.0	1.25	91.0	60-126	L720006-01	WG741835
2-Butanone (MEK)	mg/l	6.31	0.0	6.25	100.	22.4-138	L720006-01	WG741835
Benzene	mg/l	1.23	0.0	1.25	98.0	54.3-133	L720006-01	WG741835
Carbon tetrachloride	mg/l	1.10	0.0	1.25	88.0	55.7-134	L720006-01	WG741835
Chlorobenzene	mg/l	1.25	0.0	1.25	100.	67-125	L720006-01	WG741835
Chloroform	mg/l	1.10	0.0	1.25	88.0	63-129	L720006-01	WG741835
Tetrachloroethene	mg/l	1.20	0.0	1.25	96.0	53-139	L720006-01	WG741835
Trichloroethene	mg/l	1.20	0.0	1.25	96.0	44.1-149	L720006-01	WG741835

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L719994

September 12, 2014

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
		Matrix Spike						
Vinyl chloride	mg/l	1.04	0.0	1.25	83.0	47.8-137	L720006-01	WG741835
4-Bromofluorobenzene					94.60	71-126		WG741835
Dibromofluoromethane					95.10	78.3-121		WG741835
Toluene-d8					98.50	88.5-111		WG741835
a,a,a-Trifluorotoluene					99.40	85-114		WG741835
Arsenic	mg/l	9.42	0.0601	9	100.	75-125	L719994-01	WG741828
Barium	mg/l	11.9	2.47	9	100.	75-125	L719994-01	WG741828
Cadmium	mg/l	9.30	0.0234	9	100.	75-125	L719994-01	WG741828
Chromium	mg/l	9.03	0.00295	9	100.	75-125	L719994-01	WG741828
Lead	mg/l	10.0	0.692	9	100.	75-125	L719994-01	WG741828
Selenium	mg/l	9.36	0.00799	9	100.	75-125	L719994-01	WG741828
Silver	mg/l	8.89	0.0112	9	99.0	75-125	L719994-01	WG741828
1,4-Dichlorobenzene	mg/l	0.106	0.0	.25	42.0	14-104	L720454-01	WG742164
2,4,5-Trichlorophenol	mg/l	0.211	0.0	.25	84.0	30.6-120	L720454-01	WG742164
2,4,6-Trichlorophenol	mg/l	0.228	0.0	.25	91.0	19.1-114	L720454-01	WG742164
2,4-Dinitrotoluene	mg/l	0.236	0.0	.25	94.0	16.2-135	L720454-01	WG742164
2-Methylphenol	mg/l	0.135	0.0	.25	54.0	10-133	L720454-01	WG742164
3&4-Methyl Phenol	mg/l	0.208	0.203	.25	2.10*	17.4-100	L720454-01	WG742164
Hexachloro-1,3-butadiene	mg/l	0.261	0.0	.25	100.	15.7-109	L720454-01	WG742164
Hexachlorobenzene	mg/l	0.224	0.0	.25	90.0	31.9-135	L720454-01	WG742164
Hexachloroethane	mg/l	0.147	0.0	.25	59.0	10.4-105	L720454-01	WG742164
Nitrobenzene	mg/l	0.0	1.54	.25	0.0*	23.1-121	L720454-01	WG742164
Pentachlorophenol	mg/l	0.192	0.0	.25	77.0	10-108	L720454-01	WG742164
Pyridine	mg/l	0.0617	0.0	.25	25.0	10-77.8	L720454-01	WG742164
2,4,6-Tribromophenol					88.00	11.2-130		WG742164
2-Fluorobiphenyl					77.60	29.5-131		WG742164
2-Fluorophenol					40.60	10-77.9		WG742164
Nitrobenzene-d5					8620.*	21.8-123		WG742164
Phenol-d5					28.70	5-70.1		WG742164
p-Terphenyl-d14					70.10	29.3-137		WG742164

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
		Matrix Spike Duplicate							
Mercury	mg/l	0.0300	0.0278	99.7	80-120	8.00	20	L720196-01	WG741716
Mercury	mg/l	0.0288	0.0299	95.5	80-120	4.00	20	L720377-02	WG741716
1,1-Dichloroethene	mg/l	0.923	1.01	73.8	51.1-140	9.14	20.2	L719894-01	WG741835
1,2-Dichloroethane	mg/l	1.06	1.11	84.6	60-126	4.84	20	L719894-01	WG741835
2-Butanone (MEK)	mg/l	6.08	6.06	97.3	22.4-138	0.350	27	L719894-01	WG741835
Benzene	mg/l	1.12	1.22	89.5	54.3-133	9.00	20	L719894-01	WG741835
Carbon tetrachloride	mg/l	1.01	1.12	80.4	55.7-134	11.0	20	L719894-01	WG741835
Chlorobenzene	mg/l	1.11	1.21	88.5	67-125	9.27	20.3	L719894-01	WG741835
Chloroform	mg/l	1.01	1.09	80.8	63-129	8.01	20	L719894-01	WG741835
Tetrachloroethene	mg/l	1.09	1.21	87.5	53-139	9.89	20	L719894-01	WG741835
Trichloroethene	mg/l	1.10	1.21	88.0	44.1-149	9.46	20	L719894-01	WG741835
Vinyl chloride	mg/l	0.956	1.07	76.4	47.8-137	10.8	20	L719894-01	WG741835
4-Bromofluorobenzene				91.60	71-126				WG741835
Dibromofluoromethane				94.20	78.3-121				WG741835
Toluene-d8				98.10	88.5-111				WG741835
a,a,a-Trifluorotoluene				99.20	85-114				WG741835
1,1-Dichloroethene	mg/l	0.965	0.988	77.2	51.1-140	2.37	20.2	L720006-01	WG741835
1,2-Dichloroethane	mg/l	1.10	1.13	88.1	60-126	2.86	20	L720006-01	WG741835
2-Butanone (MEK)	mg/l	5.92	6.31	94.7	22.4-138	6.39	27	L720006-01	WG741835

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L719994

September 12, 2014

		Matrix Spike Duplicate							
Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Benzene	mg/l	1.17	1.23	93.8	54.3-133	4.38	20	L720006-01	WG741835
Carbon tetrachloride	mg/l	1.05	1.10	83.7	55.7-134	5.32	20	L720006-01	WG741835
Chlorobenzene	mg/l	1.15	1.25	91.8	67-125	8.34	20.3	L720006-01	WG741835
Chloroform	mg/l	1.06	1.10	84.5	63-129	4.04	20	L720006-01	WG741835
Tetrachloroethene	mg/l	1.12	1.20	89.3	53-139	7.13	20	L720006-01	WG741835
Trichloroethene	mg/l	1.13	1.20	90.2	44.1-149	6.10	20	L720006-01	WG741835
Vinyl chloride	mg/l	1.00	1.04	80.3	47.8-137	3.12	20	L720006-01	WG741835
4-Bromofluorobenzene				93.70	71-126				WG741835
Dibromofluoromethane				94.90	78.3-121				WG741835
Toluene-d8				99.20	88.5-111				WG741835
a,a,a-Trifluorotoluene				99.30	85-114				WG741835
Arsenic	mg/l	9.47	9.42	104.	75-125	1.00	20	L719994-01	WG741828
Barium	mg/l	11.7	11.9	103.	75-125	1.00	20	L719994-01	WG741828
Cadmium	mg/l	9.35	9.30	104.	75-125	1.00	20	L719994-01	WG741828
Chromium	mg/l	9.03	9.03	100.	75-125	0.0	20	L719994-01	WG741828
Lead	mg/l	10.0	10.0	104.	75-125	0.0	20	L719994-01	WG741828
Selenium	mg/l	9.46	9.36	105.	75-125	1.00	20	L719994-01	WG741828
Silver	mg/l	8.89	8.89	98.6	75-125	0.0	20	L719994-01	WG741828
1,4-Dichlorobenzene	mg/l	0.173	0.106	69.3	14-104	48.5*	36.4	L720454-01	WG742164
2,4,5-Trichlorophenol	mg/l	0.210	0.211	84.1	30.6-120	0.410	33.8	L720454-01	WG742164
2,4,6-Trichlorophenol	mg/l	0.199	0.228	79.4	19.1-114	13.7	29.9	L720454-01	WG742164
2,4-Dinitrotoluene	mg/l	0.248	0.236	99.4	16.2-135	5.10	20.6	L720454-01	WG742164
2-Methylphenol	mg/l	0.200	0.135	79.9	10-133	38.7	40	L720454-01	WG742164
3&4-Methyl Phenol	mg/l	0.297	0.208	37.5	17.4-100	35.0*	27.7	L720454-01	WG742164
Hexachloro-1,3-butadiene	mg/l	0.218	0.261	87.2	15.7-109	18.1	37.6	L720454-01	WG742164
Hexachlorobenzene	mg/l	0.230	0.224	92.0	31.9-135	2.48	20	L720454-01	WG742164
Hexachloroethane	mg/l	0.226	0.147	90.5	10.4-105	42.7*	40	L720454-01	WG742164
Nitrobenzene	mg/l	0.813	0.0	0*	23.1-121	200.*	29	L720454-01	WG742164
Pentachlorophenol	mg/l	0.184	0.192	73.6	10-108	4.05	40	L720454-01	WG742164
Pyridine	mg/l	0.0943	0.0617	37.7	10-77.8	41.8*	38.8	L720454-01	WG742164
2,4,6-Tribromophenol				85.70	11.2-130				WG742164
2-Fluorobiphenyl				80.90	29.5-131				WG742164
2-Fluorophenol				61.90	10-77.9				WG742164
Nitrobenzene-d5				5740.*	21.8-123				WG742164
Phenol-d5				41.50	5-70.1				WG742164
p-Terphenyl-d14				74.10	29.3-137				WG742164

Post Spike

Serial Dilution

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L719994

September 12, 2014

Serial Dilution

Batch number /Run number / Sample number cross reference

WG741591: R2987109: L719994-01
WG741592: R2987110: L719994-01
WG741716: R2987234: L719994-01
WG741835: R2987391: L719994-01
WG741828: R2987907: L719994-01
WG742164: R2988650 R2988671: L719994-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ahtna Engineering Services - AK
Dan Frank
110 W 38th Ave, Suite 200A

Anchorage, AK 99503

Quality Assurance Report
Level II

L719994

September 12, 2014

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

Laboratory Report of Analysis

To: Ahtna Engineering Svs
560 E. 34th Ave
Anchorage, AK 99503
(907)433-0727

Report Number: **1143676**

Client Project: **TCLP Analysis**

Dear Dan Frank,

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

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

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

Sincerely,
SGS North America Inc.

_____

Justin Nelson Date
Project Manager
Justin.Nelson@sgs.com

Print Date: 08/29/2014 4:35:07PM

Case Narrative

SGS Client: **Ahtna Engineering Svs**
SGS Project: **1143676**
Project Name/Site: **TCLP Analysis**
Project Contact: **Dan Frank**

Refer to sample receipt form for information on sample condition.

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

Print Date: 08/29/2014 4:35:08PM

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. If you have any questions regarding this report, or if we can be of any other assistance, please contact your SGS Project Manager at 907-562-2343. All work is provided under SGS general terms and conditions (<http://www.sgs.com/terms_and_conditions.htm>), unless other written agreements have been accepted by both parties.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020A, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035B, 6020, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040B, 9045C, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

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

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV	Continuing Calibration Verification
CL	Control Limit
D	The analyte concentration is the result of a dilution.
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
F	Indicates value that is greater than or equal to the DL
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
JL	The analyte was positively identified, but the quantitation is a low estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
M	A matrix effect was present.
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
Q	QC parameter out of acceptance range.
R	Rejected
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

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

SGS North America Inc. 200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Member of SGS Group

Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
14-BMI-CON-01	1143676001	08/08/2014	08/19/2014	Solid/Soil (Wet Weight)

Method	Method Description
SW6020A TCLP	Metals by ICP-MS
SW8270D TCLP	Semi-Volatile TCLP Liq/Liq
SW8260B TCLP	TCLP Volatile Organic Compounds 8260

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Member of SGS Group

Detectable Results Summary

Client Sample ID: **14-BMI-CON-01**
Lab Sample ID: 1143676001

TCLP Constituents Metals

Parameter	Result	Units
Barium	0.491	mg/L

Print Date: 08/29/2014 4:35:10PM

Results of **14-BMI-CON-01**

Client Sample ID: **14-BMI-CON-01**
Client Project ID: **TCLP Analysis**
Lab Sample ID: 1143676001
Lab Project ID: 1143676

Collection Date: 08/08/14 09:45
Received Date: 08/19/14 12:53
Matrix: Solid/Soil (Wet Weight)
Solids (%):
Location:

Results by **TCLP Constituents Metals**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Arsenic	0.125	U	0.250	0.0750	mg/L	25	(<5)	08/24/14 12:06
Barium	0.491		0.150	0.0470	mg/L	25	(<100)	08/24/14 12:06
Cadmium	0.0500	U	0.100	0.0310	mg/L	25	(<1)	08/24/14 12:06
Chromium	0.100	U	0.200	0.0600	mg/L	25	(<5)	08/24/14 12:06
Lead	0.0250	U	0.0500	0.0155	mg/L	25	(<5)	08/24/14 12:06
Mercury	0.00500	U	0.0100	0.00310	mg/L	25	(<0.2)	08/24/14 12:06
Selenium	0.500	U	1.00	0.310	mg/L	25	(<1)	08/24/14 12:06
Silver	0.0500	U	0.100	0.0310	mg/L	25	(<5)	08/24/14 12:06

Batch Information

Analytical Batch: MMS8652
Analytical Method: SW6020A TCLP
Analyst: ACF
Analytical Date/Time: 08/24/14 12:06
Container ID: 1143676001-A

Prep Batch: MXT5108
Prep Method: SW3010A
Prep Date/Time: 08/21/14 12:10
Prep Initial Wt./Vol.: 2.5 mL
Prep Extract Vol: 25 mL

Print Date: 08/29/2014 4:35:12PM

Results of **14-BMI-CON-01**

Client Sample ID: **14-BMI-CON-01**
Client Project ID: **TCLP Analysis**
Lab Sample ID: 1143676001
Lab Project ID: 1143676

Collection Date: 08/08/14 09:45
Received Date: 08/19/14 12:53
Matrix: Solid/Soil (Wet Weight)
Solids (%):
Location:

Results by **TCLP Semivolatile Organic GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
2,4,5-Trichlorophenol	0.00520	U	0.0104	0.00323	mg/L	1	(<400)	08/26/14 04:48
2,4,6-Trichlorophenol	0.00520	U	0.0104	0.00323	mg/L	1	(<2)	08/26/14 04:48
2,4-Dinitrotoluene	0.00520	U	0.0104	0.00323	mg/L	1	(<0.13)	08/26/14 04:48
2-Methylphenol (o-Cresol)	0.00520	U	0.0104	0.00323	mg/L	1	(<200)	08/26/14 04:48
3&4-Methylphenol (p&m-Cresol)	0.0104	U	0.0208	0.00646	mg/L	1	(<200)	08/26/14 04:48
Hexachlorobenzene	0.00520	U	0.0104	0.00323	mg/L	1	(<0.13)	08/26/14 04:48
Hexachlorobutadiene	0.00520	U	0.0104	0.00323	mg/L	1	(<0.5)	08/26/14 04:48
Hexachloroethane	0.00520	U	0.0104	0.00323	mg/L	1	(<3)	08/26/14 04:48
Nitrobenzene	0.00520	U	0.0104	0.00323	mg/L	1	(<2)	08/26/14 04:48
Pentachlorophenol	0.0261	U	0.0521	0.0156	mg/L	1	(<100)	08/26/14 04:48
Pyridine	0.0104	U	0.0208	0.00646	mg/L	1	(<5)	08/26/14 04:48
Surrogates								
2,4,6-Tribromophenol	61.5		40-125		%	1		08/26/14 04:48
2-Fluorobiphenyl	60		50-110		%	1		08/26/14 04:48
2-Fluorophenol	36		20-110		%	1		08/26/14 04:48
Nitrobenzene-d5	52.6		40-110		%	1		08/26/14 04:48
Phenol-d6	36.9		10-115		%	1		08/26/14 04:48
Terphenyl-d14	92.3		50-135		%	1		08/26/14 04:48

Batch Information

Analytical Batch: XMS8254
Analytical Method: SW8270D TCLP
Analyst: DSH
Analytical Date/Time: 08/26/14 04:48
Container ID: 1143676001-B

Prep Batch: XXX31797
Prep Method: SW3520C
Prep Date/Time: 08/23/14 09:45
Prep Initial Wt./Vol.: 960 mL
Prep Extract Vol: 1 mL

Print Date: 08/29/2014 4:35:12PM

Results of **14-BMI-CON-01**

Client Sample ID: **14-BMI-CON-01**
Client Project ID: **TCLP Analysis**
Lab Sample ID: 1143676001
Lab Project ID: 1143676

Collection Date: 08/08/14 09:45
Received Date: 08/19/14 12:53
Matrix: Solid/Soil (Wet Weight)
Solids (%):
Location:

Results by **TCLP Volatiles GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1-Dichloroethene	0.0250	U	0.0500	0.0155	mg/L	50	(<0.7)	08/21/14 18:41
1,2-Dichloroethane	0.0125	U	0.0250	0.00750	mg/L	50	(<0.5)	08/21/14 18:41
1,4-Dichlorobenzene	0.0125	U	0.0250	0.00750	mg/L	50	(<7.5)	08/21/14 18:41
2-Butanone (MEK)	0.250	U	0.500	0.155	mg/L	50	(<200)	08/21/14 18:41
Benzene	0.0100	U	0.0200	0.00600	mg/L	50	(<0.5)	08/21/14 18:41
Carbon tetrachloride	0.0250	U	0.0500	0.0155	mg/L	50	(<0.5)	08/21/14 18:41
Chlorobenzene	0.0125	U	0.0250	0.00750	mg/L	50	(<100)	08/21/14 18:41
Chloroform	0.0250	U	0.0500	0.0150	mg/L	50	(<6)	08/21/14 18:41
Hexachlorobutadiene	0.0250	U	0.0500	0.0155	mg/L	50	(<0.5)	08/21/14 18:41
Tetrachloroethene	0.0250	U	0.0500	0.0155	mg/L	50	(<0.7)	08/21/14 18:41
Trichloroethene	0.0250	U	0.0500	0.0155	mg/L	50	(<0.5)	08/21/14 18:41
Vinyl chloride	0.0250	U	0.0500	0.0155	mg/L	50	(<0.2)	08/21/14 18:41
Surrogates								
1,2-Dichloroethane-D4	102		70-120		%	50		08/21/14 18:41
4-Bromofluorobenzene	97.2		75-120		%	50		08/21/14 18:41
Toluene-d8	98.9		85-120		%	50		08/21/14 18:41

Batch Information

Analytical Batch: VMS14391
Analytical Method: SW8260B TCLP
Analyst: NRB
Analytical Date/Time: 08/21/14 18:41
Container ID: 1143676001-A

Prep Batch: VXX26313
Prep Method: SW5030B
Prep Date/Time: 08/21/14 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/29/2014 4:35:12PM

Method Blank

Blank ID: LB1 for HBN 1626010 [TCLP/7478
Blank Lab ID: 1228617

QC for Samples:
1143676001

Matrix: Solid/Soil (Wet Weight)

Results by **SW6020A TCLP**

Parameter	Results	LOQ/CL	DL	Units
Arsenic	0.125U	0.250	0.0750	mg/L
Barium	0.0750U	0.150	0.0470	mg/L
Cadmium	0.0500U	0.100	0.0310	mg/L
Chromium	0.100U	0.200	0.0600	mg/L
Lead	0.0250U	0.0500	0.0155	mg/L
Mercury	0.00500U	0.0100	0.00310	mg/L
Selenium	0.500U	1.00	0.310	mg/L
Silver	0.0500U	0.100	0.0310	mg/L

Batch Information

Analytical Batch: MMS8652
Analytical Method: SW6020A TCLP
Instrument: Perkin Elmer Sciex ICP-MS P3
Analyst: ACF
Analytical Date/Time: 8/24/2014 11:46:45AM

Prep Batch: MXT5108
Prep Method: SW3010A
Prep Date/Time: 8/21/2014 12:10:00PM
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Print Date: 08/29/2014 4:35:13PM

Method Blank

Blank ID: MB for HBN 1626030 [MXT/5108]
Blank Lab ID: 1228692

QC for Samples:
1143676001

Matrix: Water (Surface, Eff., Ground)

Results by **SW6020A TCLP**

Parameter	Results	LOQ/CL	DL	Units
Arsenic	0.0125U	0.0250	0.00750	mg/L
Barium	0.00750U	0.0150	0.00470	mg/L
Cadmium	0.00500U	0.0100	0.00300	mg/L
Chromium	0.0100U	0.0200	0.00600	mg/L
Lead	0.00250U	0.00500	0.00155	mg/L
Mercury	0.000500U	0.00100	0.000310	mg/L
Selenium	0.0500U	0.100	0.0310	mg/L
Silver	0.00500U	0.0100	0.00310	mg/L

Batch Information

Analytical Batch: MMS8652
Analytical Method: SW6020A TCLP
Instrument: Perkin Elmer Sciex ICP-MS P3
Analyst: ACF
Analytical Date/Time: 8/24/2014 11:44:06AM

Prep Batch: MXT5108
Prep Method: SW3010A
Prep Date/Time: 8/21/2014 12:10:00PM
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Print Date: 08/29/2014 4:35:13PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1143676 [MXT5108]
Blank Spike Lab ID: 1228693
Date Analyzed: 08/24/2014 11:49

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1143676001

Results by **SW6020A TCLP**

	Blank Spike (mg/L)			
Parameter	Spike	Result	Rec (%)	CL
Arsenic	1	0.995	100	(80-120)
Barium	1	0.993	99	(80-120)
Cadmium	0.1	0.107	107	(80-120)
Chromium	0.4	0.401	100	(80-120)
Lead	1	1.08	108	(80-120)
Mercury	0.01	0.00975	98	(80-120)
Selenium	1	1.00	100	(80-120)
Silver	0.1	0.0921	92	(80-120)

Batch Information

Analytical Batch: **MMS8652**
Analytical Method: **SW6020A TCLP**
Instrument: **Perkin Elmer Sciex ICP-MS P3**
Analyst: **ACF**

Prep Batch: **MXT5108**
Prep Method: **SW3010A**
Prep Date/Time: **08/21/2014 12:10**
Spike Init Wt./Vol.: 1 mg/L Extract Vol: 25 mL
Dup Init Wt./Vol.: Extract Vol:

Print Date: 08/29/2014 4:35:14PM

Matrix Spike Summary

Original Sample ID: 1143920005
MS Sample ID: 1228694 MS
MSD Sample ID: 1228695 MSD

QC for Samples: 1143676001

Analysis Date: 08/24/2014 11:51
Analysis Date: 08/24/2014 11:54
Analysis Date: 08/24/2014 11:56
Matrix: Solid/Soil (Wet Weight)

Results by **SW6020A TCLP**

		Matrix Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Arsenic	0.250U	10.0	10.1	101	10.0	10.3	103	80-120	2.22	(< 30)
Barium	0.367	10.0	10.2	99	10.0	10.5	102	80-120	2.69	(< 30)
Cadmium	0.100U	1.00	1.1	110	1.00	1.14	114	80-120	3.28	(< 30)
Chromium	0.200U	4.00	4.06	102	4.00	4.17	104	80-120	2.60	(< 30)
Lead	0.555	10.0	11.4	108	10.0	11.7	112	80-120	3.25	(< 30)
Mercury	0.0100U	0.100	.102	102	0.100	0.102	102	80-120	0.08	(< 30)
Selenium	1.00U	10.0	10.3	103	10.0	10.2	102	80-120	0.57	(< 30)
Silver	0.100U	1.00	.908	91	1.00	0.947	95	80-120	4.27	(< 30)

Batch Information

Analytical Batch: MMS8652
Analytical Method: SW6020A TCLP
Instrument: Perkin Elmer Sciex ICP-MS P3
Analyst: ACF
Analytical Date/Time: 8/24/2014 11:54:14AM

Prep Batch: MXT5108
Prep Method: Waters Digest for Metals by ICP-MS(TCLP)
Prep Date/Time: 8/21/2014 12:10:00PM
Prep Initial Wt./Vol.: 2.50mL
Prep Extract Vol: 25.00mL

Print Date: 08/29/2014 4:35:15PM

Method Blank

Blank ID: MB for HBN 1626037 [VXX/26313]
Blank Lab ID: 1228722

QC for Samples:
1143676001

Matrix: Water (Surface, Eff., Ground)

Results by **SW8260B TCLP**

Parameter	Results	LOQ/CL	DL	Units
1,1-Dichloroethene	0.000500U	0.00100	0.000310	mg/L
1,2-Dichloroethane	0.000250U	0.000500	0.000150	mg/L
1,4-Dichlorobenzene	0.000250U	0.000500	0.000150	mg/L
2-Butanone (MEK)	0.00500U	0.0100	0.00310	mg/L
Benzene	0.000200U	0.000400	0.000120	mg/L
Carbon tetrachloride	0.000500U	0.00100	0.000310	mg/L
Chlorobenzene	0.000250U	0.000500	0.000150	mg/L
Chloroform	0.000500U	0.00100	0.000300	mg/L
Hexachlorobutadiene	0.000500U	0.00100	0.000310	mg/L
Tetrachloroethene	0.000500U	0.00100	0.000310	mg/L
Trichloroethene	0.000500U	0.00100	0.000310	mg/L
Vinyl chloride	0.000500U	0.00100	0.000310	mg/L
Surrogates				
1,2-Dichloroethane-D4	110	70-120		%
4-Bromofluorobenzene	101	75-120		%
Toluene-d8	98.9	85-120		%

Batch Information

Analytical Batch: VMS14391
Analytical Method: SW8260B TCLP
Instrument: VPA 780/5975 GC/MS
Analyst: NRB
Analytical Date/Time: 8/21/2014 11:36:00AM

Prep Batch: VXX26313
Prep Method: SW5030B
Prep Date/Time: 8/21/2014 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/29/2014 4:35:15PM

Leaching Blank

Blank ID: LB for HBN 1626007 [TCLP/7475]
Blank Lab ID: 1228614

QC for Samples:
1143676001

Matrix: Water (Surface, Eff., Ground)

Results by **SW8260B TCLP**

Parameter	Results	LOQ/CL	DL	Units
1,1-Dichloroethene	0.0250U	0.0500	0.0155	mg/L
1,2-Dichloroethane	0.0125U	0.0250	0.00750	mg/L
1,4-Dichlorobenzene	0.0125U	0.0250	0.00750	mg/L
2-Butanone (MEK)	0.250U	0.500	0.155	mg/L
Benzene	0.0100U	0.0200	0.00600	mg/L
Carbon tetrachloride	0.0250U	0.0500	0.0155	mg/L
Chlorobenzene	0.0125U	0.0250	0.00750	mg/L
Chloroform	0.0250U	0.0500	0.0150	mg/L
Hexachlorobutadiene	0.0250U	0.0500	0.0155	mg/L
Tetrachloroethene	0.0250U	0.0500	0.0155	mg/L
Trichloroethene	0.0250U	0.0500	0.0155	mg/L
Vinyl chloride	0.0250U	0.0500	0.0155	mg/L
Surrogates				
1,2-Dichloroethane-D4	106	70-120		%
4-Bromofluorobenzene	100	75-120		%
Toluene-d8	99.1	85-120		%

Batch Information

Analytical Batch: VMS14391
Analytical Method: SW8260B TCLP
Instrument: VPA 780/5975 GC/MS
Analyst: NRB
Analytical Date/Time: 8/21/2014 2:49:00PM

Prep Batch: VXX26313
Prep Method: SW5030B
Prep Date/Time: 8/21/2014 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/29/2014 4:35:15PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1143676 [VXX26313]
Blank Spike Lab ID: 1228723
Date Analyzed: 08/21/2014 11:59

Spike Duplicate ID: LCSD for HBN 1143676 [VXX26313]
Spike Duplicate Lab ID: 1228724
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1143676001

Results by **SW8260B TCLP**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1-Dichloroethene	0.0300	0.0263	88	0.0300	0.0269	90	(70-130)	2.30	(< 20)
1,2-Dichloroethane	0.0300	0.0266	89	0.0300	0.0270	90	(70-130)	1.40	(< 20)
1,4-Dichlorobenzene	0.0300	0.0286	95	0.0300	0.0292	97	(75-125)	2.00	(< 20)
2-Butanone (MEK)	0.0900	0.0817	91	0.0900	0.0834	93	(30-150)	2.10	(< 20)
Benzene	0.0300	0.0274	91	0.0300	0.0279	93	(80-120)	1.70	(< 20)
Carbon tetrachloride	0.0300	0.0282	94	0.0300	0.0283	94	(65-140)	0.39	(< 20)
Chlorobenzene	0.0300	0.0285	95	0.0300	0.0283	94	(80-120)	0.53	(< 20)
Chloroform	0.0300	0.0261	87	0.0300	0.0263	88	(65-135)	0.80	(< 20)
Hexachlorobutadiene	0.0300	0.0289	96	0.0300	0.0293	98	(50-140)	1.60	(< 20)
Tetrachloroethene	0.0300	0.0287	96	0.0300	0.0291	97	(45-150)	1.30	(< 20)
Trichloroethene	0.0300	0.0280	93	0.0300	0.0284	95	(70-125)	1.60	(< 20)
Vinyl chloride	0.0300	0.0264	88	0.0300	0.0272	91	(50-145)	3.00	(< 20)
Surrogates									
1,2-Dichloroethane-D4	0.0300		96	0.0300		95	(70-120)	0.84	
4-Bromofluorobenzene	0.0300		98	0.0300		99	(75-120)	0.78	
Toluene-d8	0.0300		104	0.0300		103	(85-120)	1.60	

Batch Information

Analytical Batch: **VMS14391**
Analytical Method: **SW8260B TCLP**
Instrument: **VPA 780/5975 GC/MS**
Analyst: **NRB**

Prep Batch: **VXX26313**
Prep Method: **SW5030B**
Prep Date/Time: **08/21/2014 06:00**
Spike Init Wt./Vol.: 0.0300 mg/L Extract Vol: 5 mL
Dup Init Wt./Vol.: 0.0300 mg/L Extract Vol: 5 mL

Print Date: 08/29/2014 4:35:17PM

Method Blank

Blank ID: MB for HBN 1626097 [XXX/31797]
Blank Lab ID: 1229036

QC for Samples:
1143676001

Matrix: Water (Surface, Eff., Ground)

Results by **SW8270D TCLP**

Parameter	Results	LOQ/CL	DL	Units
2,4,5-Trichlorophenol	0.00500U	0.0100	0.00310	mg/L
2,4,6-Trichlorophenol	0.00500U	0.0100	0.00310	mg/L
2,4-Dinitrotoluene	0.00500U	0.0100	0.00310	mg/L
2-Methylphenol (o-Cresol)	0.00500U	0.0100	0.00310	mg/L
3&4-Methylphenol (p&m-Cresol)	0.0100U	0.0200	0.00620	mg/L
Hexachlorobenzene	0.00500U	0.0100	0.00310	mg/L
Hexachlorobutadiene	0.00500U	0.0100	0.00310	mg/L
Hexachloroethane	0.00500U	0.0100	0.00310	mg/L
Nitrobenzene	0.00500U	0.0100	0.00310	mg/L
Pentachlorophenol	0.0250U	0.0500	0.0150	mg/L
Pyridine	0.0100U	0.0200	0.00620	mg/L
Surrogates				
2,4,6-Tribromophenol	59.2	40-125		%
2-Fluorobiphenyl	56.9	50-110		%
2-Fluorophenol	44.7	20-110		%
Nitrobenzene-d5	53.5	40-110		%
Phenol-d6	48.1	10-115		%
Terphenyl-d14	83.1	50-135		%

Batch Information

Analytical Batch: XMS8254
Analytical Method: SW8270D TCLP
Instrument: HP 6890/5973 SSA
Analyst: DSH
Analytical Date/Time: 8/25/2014 10:18:00PM

Prep Batch: XXX31797
Prep Method: SW3520C
Prep Date/Time: 8/23/2014 9:45:44AM
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

Print Date: 08/29/2014 4:35:18PM

Leaching Blank

Blank ID: LB for HBN 1626009 [TCLP/7477]
Blank Lab ID: 1228616

Matrix: Solid/Soil (Wet Weight)

QC for Samples:
1143676001

Results by **SW8270D TCLP**

Parameter	Results	LOQ/CL	DL	Units
2,4,5-Trichlorophenol	0.00500U	0.0100	0.00310	mg/L
2,4,6-Trichlorophenol	0.00500U	0.0100	0.00310	mg/L
2,4-Dinitrotoluene	0.00500U	0.0100	0.00310	mg/L
2-Methylphenol (o-Cresol)	0.00500U	0.0100	0.00310	mg/L
3&4-Methylphenol (p&m-Cresol)	0.0100U	0.0200	0.00620	mg/L
Hexachlorobenzene	0.00500U	0.0100	0.00310	mg/L
Hexachlorobutadiene	0.00500U	0.0100	0.00310	mg/L
Hexachloroethane	0.00500U	0.0100	0.00310	mg/L
Nitrobenzene	0.00500U	0.0100	0.00310	mg/L
Pentachlorophenol	0.0250U	0.0500	0.0150	mg/L
Pyridine	0.0100U	0.0200	0.00620	mg/L
Surrogates				
2,4,6-Tribromophenol	65.1	40-125		%
2-Fluorobiphenyl	55.4	50-110		%
2-Fluorophenol	37.9	20-110		%
Nitrobenzene-d5	50.9	40-110		%
Phenol-d6	39.2	10-115		%
Terphenyl-d14	79.8	50-135		%

Batch Information

Analytical Batch: XMS8254
Analytical Method: SW8270D TCLP
Instrument: HP 6890/5973 SSA
Analyst: DSH
Analytical Date/Time: 8/25/2014 9:27:00PM

Prep Batch: XXX31797
Prep Method: SW3520C
Prep Date/Time: 8/23/2014 9:45:44AM
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Member of SGS Group

Blank Spike Summary

Blank Spike ID: LCS for HBN 1143676 [XXX31797]
Blank Spike Lab ID: 1229037
Date Analyzed: 08/25/2014 23:25

Spike Duplicate ID: LCSD for HBN 1143676 [XXX31797]
Spike Duplicate Lab ID: 1229038
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1143676001

Results by **SW8270D TCLP**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
2,4,5-Trichlorophenol	0.1	0.0858	86	0.1	0.0839	84	(50-110)	2.20	(< 20)
2,4,6-Trichlorophenol	0.1	0.0834	83	0.1	0.0789	79	(50-115)	5.50	(< 20)
2,4-Dinitrotoluene	0.1	0.0914	91	0.1	0.0876	88	(50-120)	4.20	(< 20)
2-Methylphenol (o-Cresol)	0.1	0.0647	65	0.1	0.0617	62	(40-110)	4.70	(< 20)
3&4-Methylphenol (p&m-Cresol)	0.14	0.107	77	0.14	0.102	73	(30-110)	5.10	(< 20)
Hexachlorobenzene	0.1	0.0899	90	0.1	0.0916	92	(50-110)	1.90	(< 20)
Hexachlorobutadiene	0.1	0.0697	70	0.1	0.0701	70	(25-105)	0.62	(< 20)
Hexachloroethane	0.1	0.0557	56	0.1	0.0597	60	(30-100)	6.90	(< 20)
Nitrobenzene	0.1	0.0671	67	0.1	0.0678	68	(45-110)	1.10	(< 20)
Pentachlorophenol	0.14	0.128	92	0.14	0.124	88	(40-115)	3.70	(< 20)
Pyridine	0.1	0.0452	45	0.1	0.0440	44	(10-76)	2.80	(< 20)
Surrogates									
2,4,6-Tribromophenol	0.2		95	0.2		92	(40-125)	3.10	
2-Fluorobiphenyl	0.1		76	0.1		73	(50-110)	2.90	
2-Fluorophenol	0.2		60	0.2		58	(20-110)	3.80	
Nitrobenzene-d5	0.1		69	0.1		68	(40-110)	1.60	
Phenol-d6	0.2		65	0.2		59	(10-115)	9.30	
Terphenyl-d14	0.1		96	0.1		96	(50-135)	0.39	

Batch Information

Analytical Batch: **XMS8254**
Analytical Method: **SW8270D TCLP**
Instrument: **HP 6890/5973 SSA**
Analyst: **DSH**

Prep Batch: **XXX31797**
Prep Method: **SW3520C**
Prep Date/Time: **08/23/2014 09:45**
Spike Init Wt./Vol.: 0.1 mg/L Extract Vol: 1 mL
Dup Init Wt./Vol.: 0.1 mg/L Extract Vol: 1 mL

Print Date: 08/29/2014 4:35:19PM

SGS

SGS North America Inc
CHAIN OF CUSTODY REC(

1143676

Locations Nationwide

Alaska	Maryland
New Jersey	New York
North Carolina	Indiana
West Virgina	Kentucky

www.us.sgs.com

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

Page ____ of ____

Section 1

CLIENT: Ahtna

CONTACT: Dan Frank PHONE NO: 350-4897

PROJECT NAME: Dan Frank PROJECT/ PWSID/ PERMIT#:

REPORTS TO: Dan Frank E-MAIL: dfrank@ahtna.net

INVOICE TO: QUOTE #:

P.O. #: 20275-002-05

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	# CONTAINERS	Type C = COMP G = GRAB MI = Multi Incre-mental Soils	TCLP VOC	TCLP SVOC	TCLP RCRA metals								REMARKS/ LOC ID
DA-B	14-134I-CON-01	8/07/14	0945		2		X	X	X								

Section 3 — Preservative

Section 5

Relinquished By:	Date	Time	Received By:
(1)	8/8/14	0945	
(2)			
(3)			
(4)	8/8/14	9:45	Received For Laboratory By:

Section 4 DOD Project? Yes No

Cooler ID:

Data Deliverable Requirements:

Requested Turnaround Time and/or Special Instructions:
Particle size reduction performed by DOW2HKM / returned to SGS 8/14/14 @ 1402

Temp Blank °C: _____ or Ambient [ ] (See attached Sample Receipt Form)

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT (See attached Sample Receipt Form)

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

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

SGS

1143676

SAMPLE RECEIPT FORM

Review Criteria:	Condition:	Comments/Action Taken:
Were **custody seals** intact? Note # & location, if applicable. COC accompanied samples?	Yes No (N/A) (Yes) No	☒ *Exemption permitted if sampler hand carries/delivers.*
Temperature blank compliant* (i.e., 0-6°C after CF)? *If >6°C, were samples collected <8 hours ago?* *If <0°C, were all sample containers ice free?* Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ If samples are received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "**COOLER TEMP**" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled."	Yes (No) Yes No (N/A) Yes No (N/A)	☐ *Exemption permitted if chilled & collected <8 hrs ago.* ambient *Note: Identify containers received at non-compliant temperature. Use form FS-0029 if more space is needed.*
Delivery method (specify all that apply): (Client (hand carried)) USPS Lynden AK Air Alert Courier UPS FedEx RAVN C&D Delivery Carlile Pen Air Warp Speed Other: _____ → *For WO# with airbills, was the WO# & airbill info recorded in the Front Counter eLog?*	Tracking/AB # or see attached or (N/A) Yes No (N/A)	
→ For samples received with payment, note amount ($) and whether cash / check / CC (**circle one**) was received. → For samples **received in FBKS**, ANCH staff will verify all criteria are reviewed. SRF initiated in FBKS by:		
Were samples received within hold time? Do samples **match COC*** (i.e., sample IDs, dates/times collected)? Were analyses requested unambiguous?	(Yes) No N/A (Yes) No N/A (Yes) No N/A	*Note: Refer to form F-083 "Sample Guide" for hold times.* *Note: If times differ <1hr, record details and login per COC.*
Were samples in **good condition** (no leaks/cracks/breakage)? Packing material used (specify all that apply): Bubble Wrap Separate plastic bags Vermiculite Other:	(Yes) No	
Were **proper containers** (type/mass/volume/preservative*) used? Were **Trip Blanks** (i.e., VOAs, LL-Hg) in cooler with samples? Were all VOA vials **free of headspace** (i.e., bubbles ≤6 mm)? Were all soil VOAs **field extracted** with MeOH+BFB?	(Yes) No N/A Yes No (N/A) Yes No (N/A) Yes No (N/A)	☐ *Exemption permitted for metals (e.g., 200.8/6020A).*
For preserved waters (other than VOA vials, LL-Mercury or microbiological analyses), was **pH verified and compliant**? If pH was adjusted, were bottles flagged (i.e., stickers)?	Yes No (N/A) Yes No (N/A)	
For **special handling** (e.g., "MI" soils, foreign soils, lab filter for dissolved…, lab extract for volatiles, Ref Lab, limited volume), were bottles/paperwork flagged (e.g., sticker)?	Yes No N/A	Sample size reduction required
For **RUSH/SHORT Hold Time**, were COC/Bottles flagged accordingly? Was Rush/Short HT email sent, if applicable?	Yes No (N/A)	
For **SITE-SPECIFIC QC, e.g. BMS/BMSD/BDUP**, were containers / paperwork flagged accordingly?	Yes No (N/A)	
For any question answered "No," has the PM been notified and the problem resolved (or paperwork put in their bin)?	Yes No (N/A)	SRF Completed by: CRD PM notified: N/A
Was **PEER REVIEW** of ***sample numbering/labeling completed?***	Yes No (N/A)	Peer Reviewed by: N/A

Additional notes (if applicable):
on hold pending sample size reduction 8/8/14 CRD

Note to Client: *Any "no" circled above indicates non-compliance with standard procedures and may impact data quality.*

F004r27_SampleReceiptForm_revised_20140804

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1143676001-A	No Preservative Required	OK			
1143676001-B	No Preservative Required	OK			

Container Condition Glossary

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

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

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

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

APPENDIX D

CONCEPTUAL SITE MODEL

(This Page Intentionally Left Blank)

Print Form

Appendix A - Human Health Conceptual Site Model
Scoping Form and Standardized Graphic

Site Name: Baker Hughes Nikiski Completions Facility

File Number: 2323.38.055

Completed by: Dan Frank

Introduction

The form should be used to reach agreement with the Alaska Department of Environmental Conservation (DEC) about which exposure pathways should be further investigated during site characterization. From this information, summary text about the CSM and a graphic depicting exposure pathways should be submitted with the site characterization work plan and updated as needed in later reports.

General Instructions: Follow the italicized instructions in each section below.

1. General Information:

Sources *(check potential sources at the site)*

- ☐ USTs
- ☐ ASTs
- ☐ Dispensers/fuel loading racks
- ☐ Drums
- ☐ Vehicles
- ☐ Landfills
- ☐ Transformers
- ☒ Other: Class V Injection wells

Release Mechanisms *(check potential release mechanisms at the site)*

- ☐ Spills
- ☐ Leaks
- ☒ Direct discharge
- ☐ Burning
- ☐ Other:

Impacted Media *(check potentially-impacted media at the site)*

- ☐ Surface soil (0-2 feet bgs*)
- ☒ Subsurface soil (>2 feet bgs)
- ☐ Air
- ☐ Sediment
- ☒ Groundwater
- ☐ Surface water
- ☐ Biota
- ☐ Other:

Receptors *(check receptors that could be affected by contamination at the site)*

- ☒ Residents (adult or child)
- ☒ Commercial or industrial worker
- ☒ Construction worker
- ☐ Subsistence harvester (i.e. gathers wild foods)
- ☐ Subsistence consumer (i.e. eats wild foods)
- ☒ Site visitor
- ☒ Trespasser
- ☒ Recreational user
- ☐ Farmer
- ☐ Other:

* bgs - below ground surface

2. **Exposure Pathways:** *(The answers to the following questions will identify complete exposure pathways at the site. Check each box where the answer to the question is "yes".)*

a) Direct Contact -

1. Incidental Soil Ingestion

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site-specific basis.) ☒

If the box is checked, label this pathway complete: Complete

Comments:

Surface is covered with asphalt, impact documented at 6 to 11 feet bgs.

2. Dermal Absorption of Contaminants from Soil

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.) ☒

Can the soil contaminants permeate the skin (see Appendix B in the guidance document)? ☐

If both boxes are checked, label this pathway complete: Incomplete

Comments:

No Appendix B compounds detected, or detected at concentrations less than a respective ADEC cleanup level.

b) Ingestion -

1. Ingestion of Groundwater

Have contaminants been detected or are they expected to be detected in the groundwater, or are contaminants expected to migrate to groundwater in the future? ☒

Could the potentially affected groundwater be used as a current or future drinking water source? Please note, only leave the box unchecked if DEC has determined the groundwater is not a currently or reasonably expected future source of drinking water according to 18 AAC 75.350. ☒

If both boxes are checked, label this pathway complete: Complete

Comments:

TCE has been detected in groundwater, however TCE was not detected in soil at a concentration near or greater than the ADEC cleanup level.

2. Ingestion of Surface Water

Have contaminants been detected or are they expected to be detected in surface water, or are contaminants expected to migrate to surface water in the future? ☐

Could potentially affected surface water bodies be used, currently or in the future, as a drinking water source? Consider both public water systems and private use (i.e., during residential, recreational or subsistence activities). ☐

If both boxes are checked, label this pathway complete: Incomplete

Comments:

groundwater is at 40 feet bgs. Impacted soil is deeper than 6 feet bgs and capped at the surface with asphalt.

3. Ingestion of Wild and Farmed Foods

Is the site in an area that is used or reasonably could be used for hunting, fishing, or harvesting of wild or farmed foods? ☐

Do the site contaminants have the potential to bioaccumulate (see Appendix C in the guidance document)? ☒

Are site contaminants located where they would have the potential to be taken up into biota? (i.e. soil within the root zone for plants or burrowing depth for animals, in groundwater that could be connected to surface water, etc.) ☐

If all of the boxes are checked, label this pathway complete: Incomplete

Comments:

Two Appendix C compounds (cadmium and lead) were detected in one sample located 11 feet bgs at concentrations greater than ADEC cleanup levels.

c) Inhalation-

1. Inhalation of Outdoor Air

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.) ☒

Are the contaminants in soil volatile (see Appendix D in the guidance document)? ☒

If both boxes are checked, label this pathway complete: Complete

Comments:

PCE was detected in one location 11 feet bgs at concentrations greater than ADEC cleanup levels. The surface is capped with asphalt.

2. Inhalation of Indoor Air

Are occupied buildings on the site or reasonably expected to be occupied or placed on the site in an area that could be affected by contaminant vapors? (within 30 horizontal or vertical feet of petroleum contaminated soil or groundwater; within 100 feet of non-petroleum contaminted soil or groundwater; or subject to "preferential pathways," which promote easy airflow like utility conduits or rock fractures) ☒

Are volatile compounds present in soil or groundwater (see Appendix D in the guidance document)? ☒

If both boxes are checked, label this pathway complete: Complete

Comments:

PCE was detected in one location 11 feet bgs at concentrations greater than ADEC cleanup levels located approximately 50 feet north of the building A sample collected 25 closer to the building do not contained any Appendix D compounds.

3. **Additional Exposure Pathways:** *(Although there are no definitive questions provided in this section, these exposure pathways should also be considered at each site. Use the guidelines provided below to determine if further evaluation of each pathway is warranted.)*

Dermal Exposure to Contaminants in Groundwater and Surface Water

Dermal exposure to contaminants in groundwater and surface water may be a complete pathway if:

- Climate permits recreational use of waters for swimming.
- Climate permits exposure to groundwater during activities, such as construction.
- Groundwater or surface water is used for household purposes, such as bathing or cleaning.

Generally, DEC groundwater cleanup levels in 18 AAC 75, Table C, are assumed to be protective of this pathway.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

groundwater is located deeper than 40 feet, and the on-site well has been taken out of service.

Inhalation of Volatile Compounds in Tap Water

Inhalation of volatile compounds in tap water may be a complete pathway if:

- The contaminated water is used for indoor household purposes such as showering, laundering, and dish washing.
- The contaminants of concern are volatile (common volatile contaminants are listed in Appendix D in the guidance document.)

Generally, DEC groundwater cleanup levels in 18 AAC 75, Table C, are assumed to be protective of this pathway.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

The on-site well has been taken out of service. Tap water is provided by connection to the McGahan Utility water system.

Inhalation of Fugitive Dust

Inhalation of fugitive dust may be a complete pathway if:

- Nonvolatile compounds are found in the top 2 centimeters of soil. The top 2 centimeters of soil are likely to be dispersed in the wind as dust particles.
- Dust particles are less than 10 micrometers (Particulate Matter - PM_{10}). Particles of this size are called respirable particles and can reach the pulmonary parts of the lungs when inhaled.
- Chromium is present in soil that can be dispersed as dust particles of any size.

Generally, DEC direct contact soil cleanup levels in Table B1 of 18 AAC 75 are protective of this pathway because it is assumed most dust particles are incidentally ingested instead of inhaled to the lower lungs. The inhalation pathway only needs to be evaluated when very small dust particles are present (e.g., along a dirt roadway or where dusts are a nuisance). This is not true in the case of chromium. Site specific cleanup levels will need to be calculated in the event that inhalation of dust containing chromium is a complete pathway at a site.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

Surface soils have not been sampled. The source of impact is subsurface injection wells, not surface discharges.

Direct Contact with Sediment

This pathway involves people's hands being exposed to sediment, such as during some recreational, subsistence, or industrial activity. People then incidentally ingest sediment from normal hand-to-mouth activities. In addition, dermal absorption of contaminants may be of concern if the the contaminants are able to permeate the skin (see Appendix B in the guidance document). This type of exposure should be investigated if:

- Climate permits recreational activities around sediment.
- The community has identified subsistence or recreational activities that would result in exposure to the sediment, such as clam digging.

Generally, DEC direct contact soil cleanup levels in 18 AAC 75, Table B1, are assumed to be protective of direct contact with sediment.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

4. Other Comments *(Provide other comments as necessary to support the information provided in this form.)*

HUMAN HEALTH CONCEPTUAL SITE MODEL GRAPHIC FORM

Site: Baker Hughes Nikiski Completions Facility

Completed By: Dan Frank

Date Completed: 10/7/14

***Instructions*: Follow the numbered directions below. Do not consider contaminant concentrations or engineering/land use controls when describing pathways.**

(1) *Check the media that could be directly affected by the release.*

(2) *For each medium identified in (1), follow the top arrow and check possible transport mechanisms. Check additional media under (1) if the media acts as a secondary source.*

Media	Transport Mechanisms	
☐ Surface Soil (0-2 ft bgs)	Direct release to surface soil	check soil
	☐ Migration to subsurface	check soil
	☐ Migration to groundwater	check groundwater
	☐ Volatilization	check air
	☐ Runoff or erosion	check surface water
	☐ Uptake by plants or animals	check biota
	☐ Other (list):	
☑ Subsurface Soil (2-15 ft bgs)	Direct release to subsurface soil	check soil
	☑ Migration to groundwater	check groundwater
	☑ Volatilization	check air
	☐ Uptake by plants or animals	check biota
	☐ Other (list):	
☑ Ground-water	Direct release to groundwater	check groundwater
	☑ Volatilization	check air
	☐ Flow to surface water body	check surface water
	☐ Flow to sediment	check sediment
	☐ Uptake by plants or animals	check biota
	☐ Other (list):	
☐ Surface Water	Direct release to surface water	check surface water
	☐ Volatilization	check air
	☐ Sedimentation	check sediment
	☐ Uptake by plants or animals	check biota
	☐ Other (list):	
☐ Sediment	Direct release to sediment	check sediment
	☐ Resuspension, runoff, or erosion	check surface water
	☐ Uptake by plants or animals	check biota
	☐ Other (list):	

(3) *Check all exposure media identified in (2).*

(4) *Check all pathways that could be complete. The pathways identified in this column **must** agree with Sections 2 and 3 of the Human Health CSM Scoping Form.*

(5) *Identify the receptors potentially affected by each exposure pathway: Enter "C" for current receptors, "F" for future receptors, "C/F" for both current and future receptors, or "I" for insignificant exposure.*

Exposure Media	Exposure Pathway/Route	Current & Future Receptors: Residents (adults or children)	Commercial or industrial workers	Site visitors, trespassers, or recreational users	Construction workers	Farmers or subsistence harvesters	Subsistence consumers	Other
☑ soil	☑ Incidental Soil Ingestion	C/F	C/F	C/F	C/F			
	☐ Dermal Absorption of Contaminants from Soil							
	☐ Inhalation of Fugitive Dust							
☑ groundwater	☑ Ingestion of Groundwater	C/F	C/F	C/F	C/F			
	☐ Dermal Absorption of Contaminants in Groundwater							
	☐ Inhalation of Volatile Compounds in Tap Water							
☑ air	☑ Inhalation of Outdoor Air	C/F	C/F	C/F	C/F			
	☐ Inhalation of Indoor Air							
	☐ Inhalation of Fugitive Dust							
☐ surface water	☐ Ingestion of Surface Water							
	☐ Dermal Absorption of Contaminants in Surface Water							
	☐ Inhalation of Volatile Compounds in Tap Water							
☐ sediment	☐ Direct Contact with Sediment							
☐ biota	☐ Ingestion of Wild or Farmed Foods							

Revised, 10/01/2010

APPENDIX B

SOIL CONTAMINANTS EVALUATED FOR DERMAL EXPOSURE

Soil contaminants are evaluated for dermal exposure when a specific absorption factor is available (EPA, 2004c). If specific absorption factors are not available, chemicals with a Henry's constant below 1 x 10^{-5} atm-m^3/mol and molecular weight below 400 g/mol are evaluated as semi volatile organic compounds. It is generally thought volatile compounds evaporate from skin before significant absorption occurs and are addressed through the inhalation exposure pathway. Compounds with a molecular weight greater than 400 g/mol are considered too large to be absorbed through the skin.

2-Amino-4,6-Dinitrotoluene	2,4-Dichlorophenol	Methoxychlor
4-Amino-2,6-Dinitrotoluene	Dieldrin	Mercury (Methyl)
Acenaphthene	Diethyl phthalate	1-Methylnaphthalene
Acenaphthylene	2,4-Dimethylphenol	2-Methylnaphthalene
Aldrin	Dimethyl phthalate	2-Methylphenol (o-cresol)
Anthracene	1,2-Dinitrobenzene	3-Methylphenol (m-cresol)
Arsenic	1,3-Dinitrobenzene	4-Methylphenol (p-cresol)
Benzo(a)anthracene	1,4-Dinitrobenzene	Naphthalene
Benzo(b)fluoranthene	2,4-Dinitrophenol	Nitroglycerin
Benzo(k)fluoranthene	2,4-Dinitrotoluene	Nitroguanidine
Benzoic Acid	2,6-Dinitrotoluene	n-Nitrosodiphenylamine
Benzo(g,h,i)perylene	1,4-Dioxane	n-Nitroso-di-n-propylamine
Benzo(a)pyrene	2,3,7,8-TCDD (Dioxin)	2-Nitrotoluene
Bis(2-ethylhexyl)phthalate	Diphenylamine	3-Nitrotoluene
Butanol	Endrin	4-Nitrotoluene
Butyl Benzyl Phthalate	Ethylene glycol	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)
Cadmium	Fluoranthene	Pentachlorophenol
Carbazole	Fluorene	Phenanthrene
Carbon Disulfide	Heptachlor	Phenol
Chlordane	Heptachlor epoxide	PCB
p-Chloroaniline	Hexachlorobenzene	Propylene glycol
2-Chloronaphthalene	Hexachloro-1,3-butadiene	Pyrene
Chrysene	alpha-Hexachlorocyclohexane	Tributyltin (as Tributyltin Oxide)
DDD	beta-Hexachlorocyclohexane	2,4,5-Trichlorophenol
DDE	gamma-Hexachlorocyclohexane	2,4,6-Trichlorophenol
DDT	Hexachlorocyclopentadiene	2,4,5-TP
Dibenzo(a,h)anthracene	Hexachloroethane	1,3,5-Trinitrobenzene
Di-n-butyl phthalate	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2,4,6-Trinitrophenylmethylnitramine (Tetryl)
Di-n-octyl phthalate	Hydrazine	2,4,6-Trinitrotoluene (TNT)
2,4-D	Indeno(1,2,3-c,d)pyrene	
3,3-Dichlorobenzidine	Isophorone	

APPENDIX C

BIOACCUMULATIVE COMPOUNDS OF POTENTIAL CONCERN

Organic compounds are identified as bioaccumulative if they have a BCF equal to or greater than 1,000 or a log K_{ow} greater than 3.5. Inorganic compounds are identified as bioaccumulative if they are listed as such by EPA (2000). Those compounds in Table B-1 of 18 AAC 75.341 that are bioaccumulative, based on the definition above, are listed below.

Aldrin	DDT	Mercury
Arsenic	Dibenzo(a,h)anthracene	Methoxychlor
Benzo(a)anthracene	Dieldrin	Nickel
Benzo(a)pyrene	Dioxin	PCBs
Benzo(b)fluoranthene	Endrin	Pyrene
Benzo(k)fluoranthene	Fluoranthene	Selenium
Cadmium	Heptachlor	Silver
Chlordane	Heptachlor epoxide	Toxaphene
Chrysene	Hexachlorobenzene	Zinc
Copper	Hexachlorocyclopentadiene	
DDD	Indeno(1,2,3-c,d)pyrene	
DDE	Lead	

Because BCF values can relatively easily be measured or estimated, the BCF is frequently used to determine the potential for a chemical to bioaccumulate. A compound with a BCF greater than 1,000 is considered to bioaccumulate in tissue (EPA 2004b).

For inorganic compounds, the BCF approach has not been shown to be effective in estimating the compound's ability to bioaccumulate. Information available, either through scientific literature or site-specific data, regarding the bioaccumulative potential of an inorganic site contaminant should be used to determine if the pathway is complete.

The list was developed by including organic compounds that either have a BCF equal to or greater than 1,000 or a log K_{ow} greater than 3.5 and inorganic compounds that are listed by the United States Environmental Protection Agency (EPA) as being bioaccumulative (EPA 2000). The BCF can also be estimated from a chemical's physical and chemical properties. A chemical's octanol-water partitioning coefficient (K_{ow}) along with defined regression equations can be used to estimate the BCF. EPA's Persistent, Bioaccumulative, and Toxic (PBT) Profiler (EPA 2004) can be used to estimate the BCF using the K_{ow} and linear regressions presented by Meylan et al. (1996). The PBT Profiler is located at http://www.pbtprofiler.net/. For compounds not found in the PBT Profiler, DEC recommends using a log K_{ow} greater than 3.5 to determine if a compound is bioaccumulative.

APPENDIX D

VOLATILE COMPOUNDS OF POTENTIAL CONCERN

A chemical is identified here as sufficiently volatile and toxic for further evaluation if the Henry's Law constant is 1 x 10^{-5} atm-m^3/mol or greater, the molecular weight is less than 200 g/mole (EPA 2004a), and the vapor concentration of the pure component posed an incremental lifetime cancer risk greater than 10^{-6} or a non-cancer hazard quotient of 0.1, or other available scientific data indicates the chemical should be considered a volatile. Chemicals that are solid at typical soil temperatures and do not sublime are generally not considered volatile.

Acetone	Mercury (elemental)
Benzene	Methyl bromide (Bromomethane)
Bis(2-chloroethyl)ether	Methyl chloride (Chloromethane)
Bromodichloromethane	Methyl ethyl ketone (MEK)
Bromoform	Methyl isobutyl ketone (MIBK)
n-Butylbenzene	Methylene bromide
sec-Butylbenzene	Methylene chloride
tert-Buytlbenzene	**1-Methylnaphthalene**
Carbon disulfide	**2-Methylnaphthalene**
Carbon tetrachloride	Methyl *tert*-butyl ether (MTBE)
Chlorobenzene	**Naphthalene**
Chlorodibromomethane (Dibromochloromethane)	Nitrobenzene
Chloroethane	n-Nitrosodimethylamine
Chloroform	**n-Propylbenzene**
2-Chlorophenol	**Styrene**
1,2-Dichlorobenzene	1,1,2,2-Tetrachloroethane
1,3-Dichlorobenzene	Tetrachloroethylene (PCE)
1,4-Dichlorobenzene	**Toluene**
Dichlorodifluoromethane	1,2,4-Trichlorobenzene
1,1-Dichloroethane	1,1,1-Trichloroethane
1,2-Dichloroethane	1,1,2-Trichloroethane
1,1-Dichloroethylene	Trichloroethylene (TCE)
cis-1,2-Dichloroethylene	2,4,6-Trichlorophenol
trans-1,2-Dichloroethylene	1,2,3-Trichloropropane
1,2-Dichloropropane	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)
1,3-Dichloropropane	Trichlorofluoromethane (Freon-11)
Ethylbenzene	**1,2,4-Trimethylbenzene**
Ethylene dibromide (1,2-Dibromoethane)	**1,3,5-Trimethylbenzene**
Hexachlorobenzene	Vinyl acetate
Hexachloro-1,3-butadiene	Vinyl chloride (Chloroethene)
Hexachlorocyclopentadiene	**Xylenes (total)**
Hexachloroethane	GRO (see note 3 below)
Hydrazine	DRO (see note 3 below)
Isopropylbenzene (Cumene)	RRO (see note 3 below)

Notes:

1. Bolded chemicals should be investigated as volatile compounds when petroleum is present. If fuel containing additives (e.g., 1,2-dichloroethane, ethylene dibromide, methyl *tert*-butyl ether) were spilled, these chemicals should also be investigated.
2. If a chemical is not on this list, and not in Tables B of 18 AAC 75.345, the chemical has not been evaluated for volatility. Contact the DEC risk assessor to determine if the chemical is volatile.
3. At this time, DEC does not require evaluation of petroleum ranges GRO, DRO, or RRO for the indoor air inhalation (vapor intrusion) pathway.

APPENDIX E

CONTAMINANT PROPERTIES USED TO EVALUATE TRANSPORT MECHANISMS

These parameters describe chemical properties of the site contaminants. Important chemical parameters used to evaluate transport mechanisms are shown below. The values specific to each chemical determine how easily a chemical is transported by various mechanisms. The default values used by the DEC can be found in the DEC's Cleanup Levels Guidance (DEC, 2008).

Table D-1: Important Physical and Chemical Parameters Used to Evaluate Transport Mechanisms.

Purpose	Parameter	Symbol	Meaning
Does the contaminant cling to organic matter or does it move with water?	Organic carbon partition coefficient	K_{oc}	Provides a measure of the extent of chemical partitioning between organic carbon and water at equilibrium. The higher the K_{oc}, the more likely a chemical is to bind to soil or sediment than to remain in water.
	Soil/water partition coefficient	K_d	Provides a soil or sediment-specific measure of the extent of chemical partitioning between soil or sediment and water, unadjusted for dependence upon organic carbon. The higher the K_d, the more likely a chemical is to bind to soil or sediment than to remain in water.
	Octanol coefficient	K_{ow}	Provides a measure of the extent of chemical partitioning between water and octanol at equilibrium. The greater the K_{ow}, the more likely a chemical is to partition to octanol than to remain in water. Octanol is used as a surrogate for lipids (fat), and K_{ow} can be used to predict bioconcentration in aquatic organisms.
Does it dissolve in water?	Solubility		Is the upper limit on a chemical's dissolved concentration in water at a specified temperature? Aqueous concentrations in excess of solubility may indicate sorption onto sediments, the presence of solubilizing chemicals such as solvents, or the presence of a non-aqueous phase liquid.
Does it vaporize?	Henry's Law Constant	H_1	Provides a measure of the extent of chemical partitioning between air and water at equilibrium. The higher the Henry's Law constant, the more likely a chemical is to volatize than to remain in water.
Does it vaporize?	Vapor Pressure		Is the pressure exerted by a chemical vapor in equilibrium with its solid or liquid form at any given temperature? It is used to calculate the rate of volatilization of a pure substance from a surface or

Purpose	Parameter	Symbol	Meaning
			in estimating a Henry's Law constant for chemicals with low water solubility. The higher the vapor pressure, the more likely a chemical is to exist in a gaseous state.
Does it spread?	**Movement of molecules**	**Diffusivity**	Describes the movement of a molecule in a liquid or gas medium as a result of differences in concentration. It is used to calculate the dispersive component of chemical transport. The higher the diffusivity, the more likely a chemical is to move in response to concentration gradients.
Does it accumulate in living tissue?		**Bioconcentration Factor (BCF)**	Provides a measure of the extent of chemical partitioning at equilibrium between a biological medium such as fish tissue or plant tissue and an external medium such as water. The higher the BCF, the greater the accumulation in living tissue is likely to be.
How easily does it break down over time?	**Persistence**	**Media-Specific Half-Life**	Provides a relative measure of persistence of a chemical in a given medium, although actual values can vary greatly depending on site-specific conditions. The greater the half-life, the more persistent a chemical is likely to be.

Source: *Risk Assessment Guidance for Superfund, Volume 1, Part A*, Exhibit 6-4 (EPA 1989).

APPENDIX E

ADEC UST PROGRAM FORMS

(This Page Intentionally Left Blank)

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
U·N·D·E·R·G·R·O·U·N·D S·T·O·R·A·G·E T·A·N·K·S

POST CLOSURE

An Owner of an underground storage tank (UST) system that is permanently closed is required to notify the Alaska Department of Environmental Conservation (ADEC) in accordance with Title 18 Alaska Administrative Code (AAC) *Underground Storage Tanks*. *"Permanently Closed"* means to remove petroleum and sludges from the UST system and either remove, dismantle and dispose of the tank or fill it with inert solid material. [*Note:* A UST that had a confirmed release must be permanently removed from the ground; an in-place closure is not allowed *(18 AAC 78.085)*.

ADEC FACILITY # 3590	FACILITY OWNER Baker Hughes oilfield operations Inc
FACILITY NAME Baker Hughes Tool Shop	MAILING ADDRESS 795 E 94th Court
PHYSICAL LOCATION (DO NOT USE PO BOX) 51950 Dolores Drive	CITY Anchorage STATE Ak ZIP 99515
CITY Nikiski STATE Ak ZIP 99611	PHONE FAX

The State of Alaska requires the supervisor of the *closure* or *change-in-service* of a UST system to be a state-certified UST Decommissioner, in accordance with 18 AAC 78.400.

Name of the certified UST Decommissioner Supervisor:	UST Worker License #	Expiration Date:
Randy Hunter	612	12/15

The State of Alaska requires anyone who performs the site characterization, and/or the site assessment and release investigation, to be an impartial third party, a *Qualified Person, (18 AAC 78.090, 18 AAC 78.995(118))*. The *Site Assessment and Release Investigation Summary* report must be performed at the time of closure.

Name of Qualified Person:	Company:
Dan Frank	Altna Engineering

Checklist: UST Worker must complete and sign page 2 of this form.

Date of Closure: Method of closure: ☒ Removal ☐ Inert-in-Place or ☐ Change-in-Service

Date site characterization performed: Date *Site Assessment and Release Investigation* performed:

CLOSURE				STATUS		CONTAMINATION	
ADEC TANK #	Volume	Product	DATE PRODUCT LAST STORED	Removed	Inert-in-Place	YES	NO
1	1800	unknown	unknown	X			X

The Owner/Operator is required to complete and sign the *Post-Closure* Form #18-0505 within 30 days of the closure. The Owner/Operator is required to complete and sign the *Site Assessment and Release Investigation Summary Report* Form #18-0508, within 60 days of the closure work. Submit both documents to the ADEC UST Office.

CERTIFIED BY: ☐ OWNER ☐ OPERATOR ☒ OTHER:

(Print name) Shawn Campbell	(Title) project Coordinator	(Phone) 907-357-1430
(Signature) Shawn Campbell	(Date) 9/1/14	(Fax) 907-357-1431

RETURN THIS SIGNED FORM TO: ADEC UST OFFICE 555 CORDOVA STREET ANCHORAGE, ALASKA 99501-2617
QUESTIONS? CALL: 907-269-7679 OR 907-269-8149 FAX: 907-269-7687
OR GO TO OUR WEB PAGE AT: HTTP://WWW.DEC.STATE.AK.US/SPAR/IPP/TANKS.HTM

CLOSURE CHECKLIST

A certified UST worker who performs or supervises UST closure must complete and sign this checklist.

I CERTIFY: (INITIAL)	*UST SYSTEM REMOVAL*
RH	I was on the job site for all work requiring certification of permanent closure
RH	Contents of tank and piping were emptied
RH	Tank was purged of flammable vapors or the atmosphere was made inert
RH	UST system(s) were cleaned in accordance with API 1604
RH	Tanks, piping and vent lines were removed, labeled, and properly disposed
RH	All accessible holes were filled, plugged or capped
I CERTIFY: (INITIAL)	*TANK IN-GROUND CLOSURE*
	I was on the job site for all work requiring certification of permanent closure
	Contents of tank and piping were emptied
	Tank was purged of flammable vapors or the atmosphere was made inert
	UST system(s) were cleaned in accordance with API 1604
	Tank was filled with solid inert material
	Piping was removed, and all accessible holes were filled, plugged or capped
I CERTIFY: (INITIAL)	*CHANGE IN SERVICE*
	I was on the job site for all work requiring certification of permanent closure
	Contents of tank and piping were emptied
	Tank was purged of flammable vapors or the atmosphere was made inert
	UST system(s) were cleaned in accordance with API 1604
	UST system(s) were disconnected from regulated use
	Piping was removed from connection with regulated use
	All accessible holes except vent lines were plugged or capped
	I understand that a certified UST worker who fails to submit this portion of the form may be subject to license suspension or revocation.

I certify the information provided above is true and accurate:

ALASKA UST DECOMMISSIONER CERTIFICATION #	**EXPIRATION DATE:**
(Print name) Randy Hunter	*(Phone)* 841-6146
(Signature)	*(Date)* 8/23

The Owner is required to complete and sign page 1 of the *Post-Closure* Form #18-0505. The UST Decommissioner who supervised the closure signs page 2. Submit the form within 30 days of closure to the ADEC UST Office.

RETURN THIS SIGNED FORM TO: ADEC UST OFFICE 555 CORDOVA STREET ANCHORAGE, ALASKA 99501-2617
QUESTIONS? CALL: 907-269-7679 *OR* 907-269-8149 FAX: 907-269-7687
OR GO TO OUR WEB PAGE AT: HTTP://WWW.DEC.STATE.AK.US/SPAR/IPP/TANKS.HTM

APPENDIX B

ADEC Storage Tank Program
Site Assessment & Release Investigation Summary Form

This document summarizes information from site assessments and release investigation reports that are required by Alaska's Underground Storage Tanks Regulations (18 AAC 78). It is intended to ensure minimum requirements are met when submitting full reports to ADEC. It cannot be substituted for comprehensive site assessment or release investigation reports. Site assessments (as defined in AS 46.03.450) are conducted to check for the presence or absence of petroleum contamination. If contamination of soil or groundwater is identified then a release investigation is required. Site assessments and release investigations must be conducted by a qualified impartial third party (as defined in 18 AAC 78) and in accordance with chapter two of the Underground Storage Tanks Procedures Manual (UST Manual).

How to fill out this form

Type or print in ink the requested information and sign in ink the "signature" blocks on page 7. Please attach this form to the comprehensive site assessment or release investigation report (or include it in the report introduction) and submit it to the nearest ADEC field operations office (Juneau, Anchorage, Fairbanks or Soldotna).

1. GENERAL INFORMATION

Purpose of Site assessment/ Release investigation: Closure
(Closure, Change-in-service, Suspected or confirmed release, Compliance check, Other)

Owner of site: Baker Hughes Oilfield Operations, Inc.
Name of company/legal entity that owns the site — Phone number
795 East 94th Ave — Anchorage, AK 99515
Mailing address — City, State, Zip code

Operator of site: SAME — 907-267-3429
Name of company/legal entity that operates the site — Phone number
Mailing address of operator — City, State, Zip code

Location of site: Nikiski Completions Facility — 907-776-8131
Name of site (e.g. John Doe's Service Station) — Phone number
51950 Dolores Dr. — Nikiski, AK 99611
Physical address of site (be as specific as possible) — City, State, Zip code
S1, T7N, R12W, SM
Legal description of site — Section/township/range
Tool Shop — 3590 / #1
Type of business at site — Facility ID # / Tank ID number(s)

Financial Assistance Applications filed (this site only)	☐ Site assessment/ tightness test	☐ Tank cleanup	☐ Tank upgrade	☐ Tank closure

Reports on file with ADEC:	☐ Tightness test	☒ Closure notice	☒ Other site characterization (see Peter Campbell)

2. SYSTEM AND TANK STATUS

Describe the status, size, and contents of the tanks that have been at the site:

Tank ID Number:	Tank No. 1	Tank No. ___	Tank No. ___	Tank No. ___	Tank No. ___
Tank status (check one) Currently in use					
Temporarily closure					
Closed/left in place					
Closed/removed	X				
Total capacity (gallons)	1800				
Contents (diesel, etc)	oil/water seperator				

3. FIRM CONDUCTING SITE ASSESSMENT AND RELEASE INVESTIGATION

Ahtna Engineering Services, LLC — 907-646-2969
Name of firm — Phone number

110 W. 38th Ave, Suite 100, Anchorage, AK 99503
Mailing address — City, State, Zip code

Daniel Frank — Daniel Frank
Site assessment supervisor(s) — Person(s) collecting samples

4. SITE HISTORY

Based on the best available knowledge, please check the appropriate box below:

Y	N	
X	__	Was soil contamination observed or identified?
X	__	Was groundwater contamination observed or identified?
N/A		Did inventory control or prior tank repairs indicate a possible release?
N/A		Has a tank tightness test been performed on any USTs on the site?
N/A		Have any of the facility's USTs or piping ever failed a tightness test?
X	__	Have there been any previous site assessments performed at this site?
X	__	Do previous site assessments indicate any contamination has occurred?

If the answer to any of these questions is yes, please describe (or attach copy of report discussion). Give dates and circumstances, use continuation sheet if necessary:

See attached Removal Action Report

5. FIELD SCREENING ANALYSIS

Date(s) of field screening: 8-19-14
Temperature(s) during screening: ~ 55°F
Estimated wind speeds: calm
Weather (clear, raining, etc): clear

Type of field detection instrument used: PID
Brand: Rae
Model: 3000
Date calibrated: 8-19-14

Number of tests: 4
Range of results: 0.8 - 4.0

If an instrument wasn't used, what field detection method was used?_____

Number of tests:_____
Range of results:_____

6. COLLECTION OF SOIL SAMPLES

For site assessments done for USTs remaining in place
Check the appropriate boxes below (if not applicable, leave blank):

Y	N	
__	__	Were samples taken from borings (or test pits) within 5 feet of the UST?
__	__	Were samples collected from within 2 feet below the bottom of the UST?
__	__	Were dispensers connected to the UST system?
__	__	Were samples taken from borings (or test pits) adjacent to dispensers?
__	__	Were samples taken from borings (or test pits) adjacent to piping?

How many borings/pits were made?_____ How many samples were analyzed? _____

For site assessments done at excavation and removal of USTs:
Check the appropriate boxes below (if not applicable, leave blank):

Y	N	
__	X	Were any areas of obvious contamination identified or observed?
__	X	Were samples taken from areas of obvious contamination?
X	__	Were at least two discrete analytical samples taken from excavated pit area?
__	N/A	Was at least one sample taken from below each dispensing island's piping?
X	__	Was at least one sample taken from the piping trench?
X	__	Were the samples referenced above collected taken from native soil within two feet below the bottom of the tank pit or dispenser/piping trench?
__	__	If multiple tanks were removed, were at least three samples collected?
__	__	Were additional samples collected for each 250 square feet of excavated pit over 250 square feet?

Number of distinct points sampled: 3 Estimated excavation's surface area: 200 S.F.

For all site assessments
Check the appropriate boxes below:

Y	N	
X	__	Were field duplicate samples collected and analyzed?
X	__	Were all samples kept at the appropriate temperature until analysis?
X	__	Were all samples extracted & analyzed within recommended holding times?
X	__	Did chain-of-custody/transfer logs accompany samples to laboratory?

7. LABORATORY ANALYSIS OF SOIL SAMPLES

(see Table 1 of UST Procedures Manual or Table G of 18 AAC 78.800(b))

Identify the possible contaminants (gasoline, BTEX, diesel, etc.): lubricants / unknown

Please list the analytical methods used to detect these contaminants in the soil samples, the number of samples analyzed by each method, and the range of results for each method:

Possible product	Analytical method	Number of samples	Range of results (ppm)	Location(s) of sample point(s) w/ highest level of contamination
GRO	101	4	ND	NA
DRO	102	4	ND-270	UT-01-SO
RRO	103	4	ND-660	UT-01-SO
EDB/DCA/BTEX	8260	4	ND	NA
PCB	~~8~~8082	3	ND	UT-01-SO
Metals	6010/7471	4	See Report	UT-01-SO

8. GROUNDWATER INVESTIGATION

Check the appropriate boxes below:

Y	N	
__	X	Was groundwater encountered during the excavation or drilling work?
__	X	Were borings drilled/pits dug at least five feet below the USTs bottom?
__	X	Is groundwater or seasonal high water table known or suspected to exist within five feet of the bottom of the USTs?
__	X	Were samples taken from borings drilled/test pits dug to this water level?
__	X	Were all these samples analyzed within recommended holding times?

How many groundwater/saturated-soil samples were collected & analyzed? _____

How many of these samples were taken from the top 6" of water table? _____

How many field QC samples were analyzed? _____ Trip blanks _____ Duplicates _____ Decon blanks

9. LABORATORY ANALYSIS OF GROUNDWATER SAMPLES

(see Table 1 of UST Procedures Manual or Table G of 18 AAC 78.800(b))

Identify the possible contaminants at the site: _____

Identify the analytical methods used to detect these contaminants in the water samples, the number of samples analyzed by each method, and the range of results for each method:

Analytical method	Number of samples	Range of results (ppm)	Location(s) of sample point with highest level of contamination

10. DISPOSAL OF MATERIALS

Check the appropriate boxes below (if not applicable, leave blank):

Y	N	
X	__	Were tanks cleaned in accordance with API 2015 (Cleaning Petroleum Storage Tanks)?
X	__	Were the tanks and piping removed and disposed in accordance with API 1604 (Removal and disposal of used petroleum Storage tanks)?

Where were the tanks and piping disposed? Prism

Where was the tank sludge and rinsewater disposed? Emerald

11. STOCKPILES

Check the appropriate boxes below:

Y	N	
X	__	Is any soil stockpiled at the site?
X	__	Are soils stockpiled in accordance with 18 AAC 78.311?

12. RELEASE INVESTIGATION

Check the appropriate box below:

Y	N	
___	X	Was any petroleum contamination identified during site assessment? (Answer "yes" if any evidence a release occurred; if no, proceed to item 13)

If contamination was found, what was matrix score for site? _____
(Attach completed matrix score sheet to this form)

When did release occur?_____ (Date & time) When was release confirmed? _____ (Date & time)

When was ADEC notified? _____ (Date & time) List ADEC staff notified:_____ (Name)

What is status of UST that prompted the investigation? ____ In use ____ Out-of-use, product still in system ____ Out-of-use; system empty ____ Permanently closed

Briefly describe (or attach copy of report discussion) the steps taken to prevent further migration of the release and steps taken to monitor and mitigate fire and safety hazards:_____

_____

_____

_____

13. SITE SKETCH

Sketch the site in the space below. Alternatively, attach a site map to the back of the form. The sketch (or accompanying narrative) should include the following information:

- locations of all USTs, piping, and dispensers
- distances from tanks to nearby structures
- property line locations
- location and dimensions of excavation(s)
- type of backfill used to surround system
- locations of any known historical releases
- locations of any observed contamination
- location of any boreholes and test pits
- soil types
- field screening locations and readings
- sampling locations, depths, & sample ID numbers
- water wells and monitoring wells (if present)
- depth to groundwater/seasonal high groundwater
- locations of any stockpiled soils
- north arrow
- bar scale (specify feet or meters)

For release investigations, in addition to the above information, show the groundwater gradient; surface drainages (including potential hydraulic connections with groundwater) and utility trenches.

14. QUALITY ASSURANCE

Check the appropriate boxes below:

Y	N	
__	X	Were there deviations from Chapter 2 of the UST Procedures Manual? (Note that any deviations must be documented in a section of the comprehensive report)
X	__	Is a field quality control summary included in the reports?
X	__	Is a laboratory QC summary included in the report for all samples used to verify cleanup levels have been met?

15. CERTIFICATION

The following certification is to be signed by the assessment firm's principal investigator or Quality Assurance Officer:

I certify that except as specifically noted in this report, all statements and data appearing in this report are in conformance with the provisions of Chapter 2 of the UST Procedures Manual.

Daniel Frank
(Print name)

Project Manager
(Title)

(Signature)

10-8-14
(Date)

The following certification is to be signed by the UST owner/operator (or designated representative):

I certify that I have personally examined and am familiar with the information in this and all attached documents and based on my inquiry of the individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

CHRIS CLOUFELTER / BAKER HUGHES
(Print name)

OWNER
(Specify if owner, operator, representative)

(Signature)

21 OCT 2019
(Date)

2929 ALLEN PARKWAY, STE 2100
(Street Address)

HOUSTON, TX 77019
(City, State, Zip)

16. ATTACHMENTS

Please check the boxes showing any comprehensive reports attached to this summary:

X Site Assessment Report (include if no release investigation is needed)

__ Release Investigation Report (include if release investigation is needed)

18-0508 (REV. 10/95)