SITE ASSESSMENT REPORT

James and Suzanne Mason
10481 Ann Coleman Road
JUNEAU, ALASKA

NOVEMBER 2010

Prepared For:

James and Suzanne Mason
10481 Ann Coleman Road
Juneau, Alaska 99801

Prepared By:

NORTECH

Environmental Engineering & Industrial Hygiene Consultants

2400 College Road
Fairbanks, Alaska 99709
p. 907.452.5688
f. 907.452.5694

3105 Lakeshore Dr, Suite A106
Anchorage, Alaska 99503
p. 907.222.2445
f. 907.222.0915

Managing Office:
4402 Thane Road
Juneau, Alaska 99801
p: 907.586.6813
f: 907.586.6819

www.nortechengr.com

NORTECH

ENVIRONMENTAL ENGINEERING, HEALTH & SAFETY
Anch: 3105 Lakeshore Dr. Ste 106A, 99517 907.222.2445 Fax: 222.0915
Fairbanks: 2400 College Road, 99709 907.452.5688 Fax: 452.5694
Juneau: 4402 Thane Road, 99801 907.586.6813 Fax: 586.6819
info@nortechengr.com www.nortechengr.com

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APPENDICES

1.0 EXECUTIVE SUMMARY

NORTECH Environmental Engineering and Industrial Hygiene (***NORTECH***) has developed a Work Plan for completing characterization activities at 10481 Ann Coleman Road in Juneau, Alaska. The Site has a residential home with a furnace serviced by a 550-gallon underground storage tank (UST). James Mason, property owner, is undertaking these activities to address soil contamination at this site.

On May 11, 2007 Charles Correa, a neighbor of Mr. Mason, contacted the Alaska Department of Environmental Conservation (ADEC) regarding heating oil near his property's leach field. Scot Tiernan with ADEC determined the source of this heating oil to be from an underground storage tank (UST) that supplied fuel to the home's furnace. On May 28, Mr. Mason contacted ***NORTECH*** regarding the leaky UST and Jason Ginter conducted a site investigation that day to find heating oil present in the soils on the Mason property and neighboring. Two days later, Mr. Ginter was present for asphalt removal above the UST, excavation of a test trench around the UST, and removal of the 550-gallon UST by Mr. Mason. Water level was 66 inches below ground surface (bgs) near the UST. Numerous corrosion holes were noted near the end seams of the UST. Ten cubic yards of contaminated soil were removed from beneath the UST and hauled to Bicknell's asphalt plant for remediation via asphalt inclusion.

Mr. Ginter sampled soil from the excavation area, suspected areas with a hand auger in Mr. Mason's yard and neighboring properties for diesel range organics (DRO) analysis by SGS Environmental Services (SGS) in Anchorage, Alaska. ***NORTECH*** noted that Mr. Mason's property has been built up two to four feet above nearby properties with tree stumps and imported fill. Sorbent pads were used to collect free product on the organic-rich soil in the vicinity of Mr. Mason's property.

A new UST was placed back into the ground along with 100 pounds of high nitrogen fertilizer to the excavation area by Mr. Mason. Another 120 pounds of fertilizer was applied to affected soils on his property and neighboring properties. It is estimated that 150 cubic yards of contaminated soil remained for bioremediation by Mr. Mason in May 2007.

In September 2010, ***NORTECH*** was contacted to perform a site assessment at the Site. On October 28th, NORTECH personnel Amy Dieffenbacher and Ashley Bruce conducted a site assessment and collected characterization soil samples for DRO analysis.

2.0 PROJECT BACKGROUND

2.1 General Site Setting and Description

The Site is a single-family residence located on the east shoreline of Auke Bay in Juneau, Alaska. The Site is 85 feet above sea level and surrounding properties are residential.

2.2 Initial Response

Mr. Mason contacted ***NORTECH*** in May 2007 to address a leak from the property's 550-gallon steel underground storage tank (UST). A portion of the asphalt Roadway was removed to access the UST and a trench was dug along the UST's location for field-screening. The leaky UST was removed and holes along the end seam welds were noted. Water level at the UST location was 66 inches bgs. Ten cubic yards of contaminated soil was removed by Mr. Mason from beneath the UST and hauled to Bicknell's asphalt batch plant for remediation via asphalt inclusion.

A six inch lens of contaminated soil was found between the Mason and Hendricks properties. Mr. Mason used sorbent pads to collect free product on organic-rich soil. He also added 100 pounds of high nitrogen fertilizer to the UST excavation area for bioremediation purposes. A new UST was placed back in the excavation area and backfilled with clean material. One hundred twenty pounds of high nitrogen fertilizer was applied to affected areas on Mr. Mason's property and neighboring properties.

Samples were collected from the excavated area with a hand auger and from suspected areas in Mr. Mason's yard and neighboring properties. ***NORTECH*** sent five soil samples taken from the spill affected area to SGS. SGS analyzed the samples for DRO by method AK102. The table below lists sample results and Figure 2 shows sample locations.

Table 1

2007 Laboratory Results in ppm

Sample ID	Sample Depth	DRO
CZ01	2'	**8,400**
CZ02	1'	**47,300**
CZ03	6'	**4,550**
CZ04	5'	**3,800**
CZ05	7.5'	ND

ND = non-detect
BOLD = Exceeds ADEC cleanup levels

2.3 Project Objectives and Scope of Work

Mr. Mason has contracted ***NORTECH*** to conduct a Site Assessment and at the 10481 Ann Coleman Road site to confirm the presence or absence of suspected contamination. This Site Assessment was done in accordance with 18 AAC 75 to address the heating oil contamination. Mr. Mason is responsible for addressing the environmental concerns observed at the Site. ***NORTECH*** identified 415 cubic yards of

contaminated soil. The objective of the assessment is to show Mr. Mason due diligence by supplying current information to any potential purchasers.

3.0 METHODOLOGY

3.1 Field screening Protocol

3.1.1 Handheld Photo Ionization Detector (PID)

A PhotoVac 2020 Hand Held Air Monitor/Photo Ionization Detector (PID) was used to field screen the soils for POL contamination. ***NORTECH*** used the headspace method of field screening in general accordance with Section 4 of the ADEC Standard Sampling Procedures (SSP) and the approved project documents. Headspace screening consists of partially (33%-50%) filling a clean re-sealable bag with freshly uncovered soils to be field screened. The re-sealable bag was closed and headspace vapors were allowed to develop for at least 10 minutes and not more than one hour. The bag was agitated at the beginning and end of the headspace development period. In accordance with the SSP, the highest PID reading from each sample was recorded.

3.1.2 Hot Water Sheen Test

NORTECH also used the hot water sheen test (also known as Hydrothermally Induced Iridescent Optroscopy) to corroborate and supplement the PID results and visual and olfactory observations of specific soils. The general methodology is to partially fill a small stainless steel bowl with suspect soil and slowly add hot water to the bowl and note any sheen that appears on the water surface. Then the water and soil are agitated and the surface is evaluated again. The bowl is then decontaminated for reuse.

This procedure is fairly subjective, but is a reasonable indicator of the presence or absence of petroleum contamination. Typical results are rainbow sheen, a white wispy sheen, a blocky sheen or no sheen. These specific indications provide a subjective analysis about the suspected contamination. For example, fresh releases have a vibrant rainbow of colors, while older weathered releases are generally dull (white) and wispy. Also, natural organics (biogenic origin) display a blocky pattern and tend to fracture while POL contamination does not.

3.2 Laboratory Sampling and Analysis Procedures

The number and type of laboratory samples were determined by the 2010 site characterization work by ***NORTECH***. The following list indicates the soil analysis methods that have been used for the purposes of this site investigation:

- Diesel Range Organics (DRO) by method AK102, characterization samples

The analytical methods listed above apply to soil samples collected from this site for closure and characterization during the contaminated soil removal. Surface and subsurface soil samples were collected using a combination of hand equipment, such as post-hole diggers, shovels, trowels, and spoons and disposable sampling equipment such as gloves and re-sealable bags.

NORTECH described the location and soil type in the field notes. Sampling equipment that contacted environmental media was decontaminated both before initial use and between sampling locations to avoid cross contamination. Samples were placed in the appropriate sampling container, sealed, and placed promptly on ice in a cooler in the custody of ***NORTECH*** personnel.

3.3 Soil Cleanup Levels

The initial site cleanup goals for this project have been determined using the State of Alaska Department of Environmental Conservation's (ADEC) Method 2 for soil (over 40-inch zone) as outlined in ADEC regulations (18 AAC 75.341, Table B2). Table 2, below, shows Method 2 cleanup levels.

Table 2

Soil Cleanup Standards for Common Contaminants at Site

	ADEC Method 2 Soil (ppm)
Diesel Range Organics (DRO)	230

4.0 FIELD ACTIVITIES

NORTECH conducted characterization work at this site on October 28, 2010. Amy Dieffenbacher and Ashley Bruce of ***NORTECH*** were present during these activities. Weather conditions during these field activities were cloudy, dry and near 32 degrees Fahrenheit.

Soil samples from all 12 test pits were collected by shovel, trowel, and post-hole digger were field-screened with the PID instrument and hot water sheen test for qualitative

detection of petroleum contamination. Soil from eight of the 12 test pits was submitted to SGS for DRO analysis to delineate lateral extent of contamination at the Site. Olfactory evidence and hot water sheen test evaluations of test pits one through three were minor, while test pits four through 14 displayed strong fuel odor and visible sheen. PID analysis and hot water sheen screening confirmed these findings. Property lines currently limit ***NORTECH***'s field-screening and soil sampling abilities.

Groundwater was encountered about three to 48 inches below the ground surface. Topography at the Site was flat, forested with water-saturated, organic-rich soil and pools of standing water four square feet in surface area on average. Most of the contamination remains in this forested area, on the Mason property.

5.0 RESULTS WITH DISCUSSION

NORTECH personnel took eight soil samples and one duplicate from the spill-affected area. The soil samples were sent to SGS for DRO analysis using method AK102. Sample locations are shown in Appendix A, Figure 2. Table 3, below, shows 2010 laboratory sample results.

Table 3

2010 Laboratory Results in ppm

Sample ID	Sample Depth	DRO
CZ01	4'	**
CZ02	4'	**97,800**
CZ03*	4'	**39,100**
CZ04	3'	**670**
CZ05	3'	**2,670**
CZ06	3'	**1,860**
CZ07	3'	**6,490**
CZ08	3'	**36,000**
CZ09*	4'	**35,500**

* = field duplicate

** = result was below laboratory detection limit
BOLD = Exceeds ADEC cleanup levels

The laboratory sample locations from the site are shown in the figures in Appendix A. Figure 1 is a general location map and Figure 2 shows the project area and sample locations in more detail.

Eight of the nine samples analyzed for DRO resulted in numbers greater than ADEC Method 2 cleanup levels. Contaminated soil still remains on Mr. Mason's property and his neighbor's properties.

A laboratory data review checklist has been prepared for these results and is attached as Appendix D. All quality control indicators are within acceptable limits and all results are deemed valid.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the activities completed at the site, ***NORTECH*** has developed the following conclusions:

- Laboratory data demonstrates that contaminated soil remains at the Site.
- Based on this data, ***NORTECH*** recommends the installation of nutrient addition ports for the addition of high nitrogen quick release fertilizer, for *in-situ* treatment of the contaminated soils in spring of 2011.
- ***NORTECH*** recommends sampling in the spring and the fall of 2011 to gauge the effectiveness of the treatment.
- An estimated 150 - 200 cubic yards of contaminated soil remains in place at the Site.

The area containing contaminated soil could not be removed without clearing forested vegetation. The affected area can be addressed via *in-situ* remediation through the installation of nutrient addition ports and the application of high nitrogen fertilizer. Application of ammonia to increase pH is also recommended.

7.0 LIMITATIONS AND NOTIFICATIONS

NORTECH provides a level of service that is performed within the standards of care and competence of the environmental engineering profession. However, it must be recognized that limitations exist within any site investigation. This report provides results based on a restricted work scope and from the analysis and observation of a limited number of samples. Therefore, while it is our opinion that these limitations are reasonable and adequate for the purposes of this report, actual site conditions may differ. Specifically, the unknown nature of exact subsurface physical conditions, sampling locations, the analytical procedures' inherent limitations, as well as financial and time constraints are limiting factors.

The report is a record of observations and measurements made on the subject site as described. The data should be considered representative only of the time the site investigation was completed. No other warranty or presentation, either expressed or implied, is included or intended. This report is prepared for the exclusive use by James Mason and ADEC. If it is made available to others, it should be for information on factual data only, and not as a warranty of conditions, such as those interpreted from the results presented or discussed in the report. We certify that except as specifically

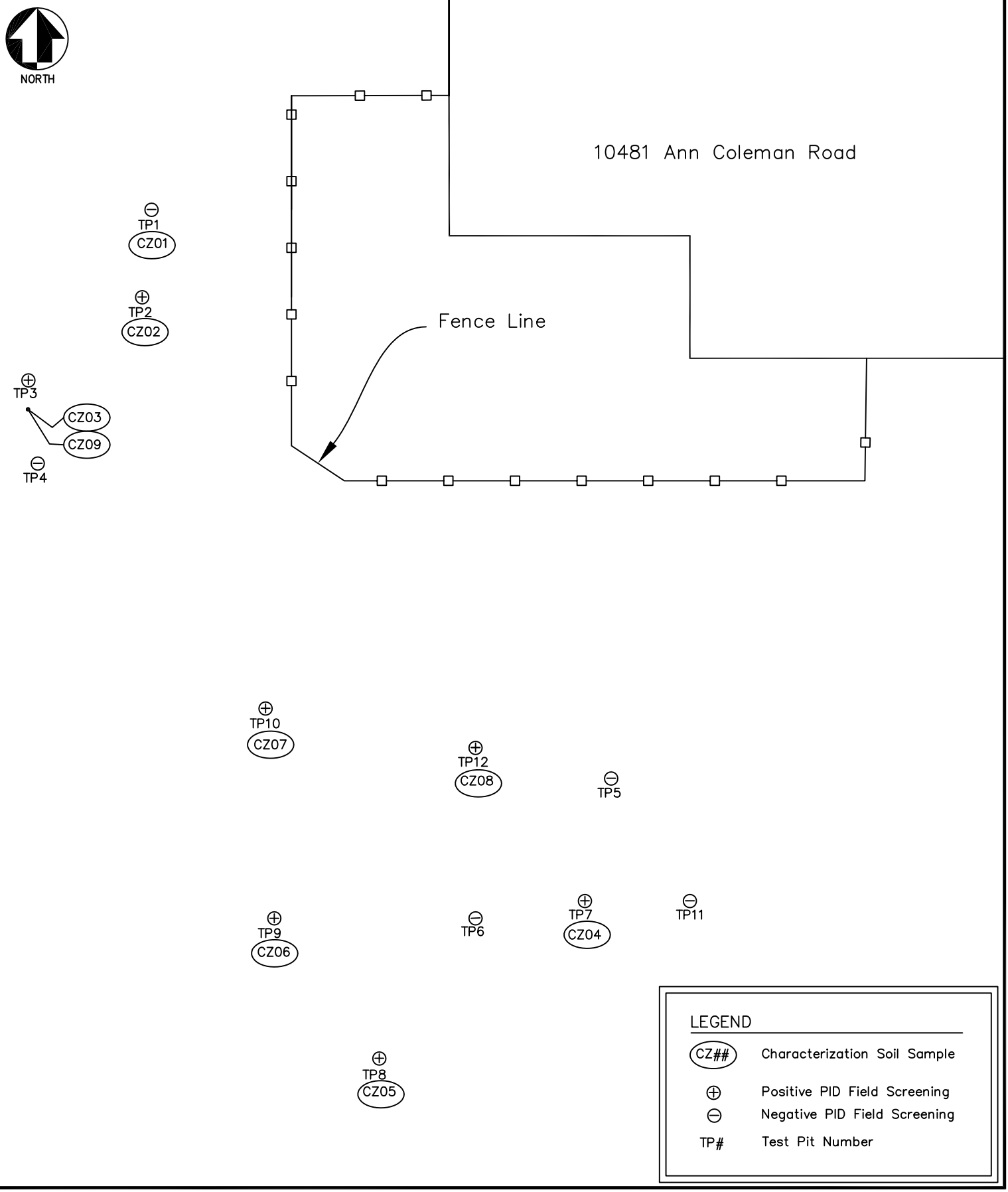
noted in this report, all statements and data appearing in this report are in conformance with ADEC's Standard Sampling Procedures. ***NORTECH*** has performed the work, made the findings, and proposed the recommendations described in this report in accordance with generally accepted environmental engineering practices.

8.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

Jason Ginter, Southeast Alaska Projects Manager for ***NORTECH,*** has a B.S. in Chemistry and extensive experience conducting hazardous materials investigations, property assessments, and other environmental fieldwork throughout Alaska.

Jason Ginter
Principal,
Juneau Technical Manager

APPENDIX A
Figures



NORTECH
ENVIRONMENTAL ENGINEERING HEALTH & SAFETY
2400 College Road, Fairbanks, Alaska 99709 Ph: 907-452-5688
3105 Lakeshore Dr. Anch, Alaska 99517, Ph: 907-222-2445
4402 Thane Road, Juneau, Alaska 99801 Ph: 907-586-6813

Test Pit & Sample Locations
10481 Ann Coleman Road
Juneau, Alaska

SCALE: 1" = 15'	FIGURE: 2
DESIGN: AB	
DRAWN: BPC	
PROJECT NO: 10-1131	
DWG: 101131a(02)	
DATE: 10/29/2010	

APPENDIX B
Site Photographs

Photo 1: *PID reading for TP10*

Photo 2: *TP2 with groundwater at 4' below ground surface*

APPENDIX C
Laboratory Report

SGS North America Inc.
Alaska Division
Level II Laboratory Data Report

Project:	10-1131
Client:	Nortech
SGS Work Order:	1105828

Released by:

Contents (Bookmarked in PDF):

Case Narrative

Client	NORTECH	Nortech	**Printed Date/Time**	11/11/2010	14:07
Workorder	1105828	10-1131			

Sample ID **Client Sample ID**

Refer to the sample receipt form for information on sample condition.

1105828001 **PS** **CZ01**

AK102 - Unknown hydrocarbon with several peaks is present.

1105828002 **PS** **CZ02**

AK102 SG - The pattern is consistent with a weathered middle distillate.
AK102 - The pattern is consistent with a weathered middle distillate.

1105828003 **PS** **CZ03**

AK102 SG - The pattern is consistent with a weathered middle distillate.
AK102 - 5a-Androstane (surrogate) recovery is outside QC criteria due to sample matrix.
AK102 - The pattern is consistent with a weathered middle distillate.

1105828004 **PS** **CZ04**

AK102 - Unknown hydrocarbon with several peaks is present.

1105828005 **PS** **CZ05**

AK102 - Unknown hydrocarbon with several peaks is present.
AK102 - 5a-Androstane (surrogate) recovery is outside QC criteria due to sample matrix.

1105828006 **PS** **CZ06**

AK102 - Unknown hydrocarbon with several peaks is present.
AK102 - 5a-Androstane (surrogate) recovery is outside QC criteria due to sample matrix.

1105828007 **PS** **CZ07**

AK102 SG - The pattern is consistent with a weathered middle distillate.
AK102 - The pattern is consistent with a weathered middle distillate.

1105828008 **PS** **CZ08**

AK102 SG - The pattern is consistent with a weathered middle distillate.
AK102 - The pattern is consistent with a weathered middle distillate.

1105828009 **PS** **CZ09**

AK102 SG - The pattern is consistent with a weathered middle distillate.
AK102 - The pattern is consistent with a weathered middle distillate.

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

Laboratory Analysis Report

Jason Ginter
Nortech
4402 Thane Rd
Juneau, AK 99801

Work Order:	1105828
	10-1131
Client:	Nortech
Report Date:	November 11, 2010

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 AK100001 for NELAP (RCRA methods: 1020A, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035B, 6010B, 6020, 7470A, 7471B, 8021B, 8081B, 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, the National Environmental Laboratory Accreditation Program and 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
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., 2xDL)
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.

Detectable Results Summary

Print Date: 11/11/2010 2:07 pm

Client Sample ID: **CZ01**
SGS Ref. #: 1105828001

Semivolatile Organic Fuels Department

Parameter	Result	Units
Diesel Range Organics	115J	mg/Kg

Client Sample ID: **CZ02**
SGS Ref. #: 1105828002

Semivolatile Organic Fuels Department

Parameter	Result	Units
Diesel Range Organics	97800	mg/Kg
DRO Silica Gel	88900	mg/Kg

Client Sample ID: **CZ03**
SGS Ref. #: 1105828003

Semivolatile Organic Fuels Department

Parameter	Result	Units
Diesel Range Organics	39100	mg/Kg
DRO Silica Gel	37000	mg/Kg

Client Sample ID: **CZ04**
SGS Ref. #: 1105828004

Semivolatile Organic Fuels Department

Parameter	Result	Units
Diesel Range Organics	670	mg/Kg

Client Sample ID: **CZ05**
SGS Ref. #: 1105828005

Semivolatile Organic Fuels Department

Parameter	Result	Units
Diesel Range Organics	2670	mg/Kg

Client Sample ID: **CZ06**
SGS Ref. #: 1105828006

Semivolatile Organic Fuels Department

Parameter	Result	Units
Diesel Range Organics	1860	mg/Kg

Client Sample ID: **CZ07**
SGS Ref. #: 1105828007

Semivolatile Organic Fuels Department

Parameter	Result	Units
Diesel Range Organics	6490	mg/Kg
DRO Silica Gel	5220	mg/Kg

Client Sample ID: **CZ08**
SGS Ref. #: 1105828008

Semivolatile Organic Fuels Department

Parameter	Result	Units
Diesel Range Organics	36000	mg/Kg
DRO Silica Gel	37900	mg/Kg

Detectable Results Summary

Print Date: 11/11/2010 2:07 pm

Client Sample ID: **CZ09**

SGS Ref. #: 1105828009

Semivolatile Organic Fuels Department

Parameter	Result	Units
Diesel Range Organics	35500	mg/Kg
DRO Silica Gel	34500	mg/Kg

SGS Ref.#	1105828001		
Client Name	Nortech	**Printed Date/Time**	11/11/2010 14:07
Project Name/#	10-1131	**Collected Date/Time**	10/27/2010 8:43
Client Sample ID	CZ01	**Received Date/Time**	10/29/2010 8:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

AK102 - Unknown hydrocarbon with several peaks is present.

Parameter	Results	LOQ	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Semivolatile Organic Fuels Department									
Diesel Range Organics	115J	168	mg/Kg	AK102	A		11/04/10	11/07/10	LCE
DRO Silica Gel	ND	168	mg/Kg	AK102	A		11/04/10	11/07/10	LCE
Surrogates									
5a Androstane <surr>	90.2		%	AK102	A	50-150	11/04/10	11/07/10	LCE
5a Androstane <surr>	109		%	AK102	A	50-150	11/04/10	11/07/10	LCE
Solids									
Total Solids	58.0		%	SM20 2540G	A			10/29/10	SHA

SGS Ref.#	1105828002		
Client Name	Nortech	**Printed Date/Time**	11/11/2010 14:07
Project Name/#	10-1131	**Collected Date/Time**	10/27/2010 9:00
Client Sample ID	CZ02	**Received Date/Time**	10/29/2010 8:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

AK102 SG - The pattern is consistent with a weathered middle distillate.

AK102 - The pattern is consistent with a weathered middle distillate.

Parameter	Results	LOQ	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Semivolatile Organic Fuels Department									
Diesel Range Organics	97800	4520	mg/Kg	AK102	A		11/04/10	11/08/10	HM
DRO Silica Gel	88900	4520	mg/Kg	AK102	A		11/04/10	11/08/10	LCE
Surrogates									
5a Androstane <surr>	90.8		%	AK102	A	50-150	11/04/10	11/08/10	LCE
5a Androstane <surr>	120		%	AK102	A	50-150	11/04/10	11/08/10	HM
Solids									
Total Solids	11.3		%	SM20 2540G	A			10/29/10	SHA

SGS Ref.#	1105828003		
Client Name	Nortech	**Printed Date/Time**	11/11/2010 14:07
Project Name/#	10-1131	**Collected Date/Time**	10/27/2010 9:35
Client Sample ID	CZ03	**Received Date/Time**	10/29/2010 8:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

AK102 SG - The pattern is consistent with a weathered middle distillate.
AK102 - 5a-Androstane (surrogate) recovery is outside QC criteria due to sample matrix.
AK102 - The pattern is consistent with a weathered middle distillate.

Parameter	Results		LOQ	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Semivolatile Organic Fuels Department										
Diesel Range Organics	39100		4580	mg/Kg	AK102	A		11/04/10	11/08/10	HM
DRO Silica Gel	37000		4580	mg/Kg	AK102	A		11/04/10	11/08/10	LCE
Surrogates										
5a Androstane <surr>	89.7			%	AK102	A	50-150	11/04/10	11/08/10	LCE
5a Androstane <surr>	158	!		%	AK102	A	50-150	11/04/10	11/08/10	HM
Solids										
Total Solids	11.5			%	SM20 2540G	A			10/29/10	SHA

SGS Ref.#	1105828004		
Client Name	Nortech	**Printed Date/Time**	11/11/2010 14:07
Project Name/#	10-1131	**Collected Date/Time**	10/27/2010 12:13
Client Sample ID	CZ04	**Received Date/Time**	10/29/2010 8:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

AK102 - Unknown hydrocarbon with several peaks is present.

Parameter	Results	LOQ	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Semivolatile Organic Fuels Department									
Diesel Range Organics	670	616	mg/Kg	AK102	A		11/04/10	11/07/10	LCE
DRO Silica Gel	ND	616	mg/Kg	AK102	A		11/04/10	11/07/10	LCE
Surrogates									
5a Androstane <surr>	89		%	AK102	A	50-150	11/04/10	11/07/10	LCE
5a Androstane <surr>	126		%	AK102	A	50-150	11/04/10	11/07/10	LCE
Solids									
Total Solids	16.2		%	SM20 2540G	A			10/29/10	SHA

SGS Ref.#	1105828005		
Client Name	Nortech	**Printed Date/Time**	11/11/2010 14:07
Project Name/#	10-1131	**Collected Date/Time**	10/27/2010 12:44
Client Sample ID	CZ05	**Received Date/Time**	10/29/2010 8:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

AK102 - Unknown hydrocarbon with several peaks is present.

AK102 - 5a-Androstane (surrogate) recovery is outside QC criteria due to sample matrix.

Parameter	Results		LOQ	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Semivolatile Organic Fuels Department										
Diesel Range Organics	2670		867	mg/Kg	AK102	A		11/04/10	11/09/10	HM
DRO Silica Gel	ND		867	mg/Kg	AK102	A		11/04/10	11/07/10	LCE
Surrogates										
5a Androstane <surr>	72.9			%	AK102	A	50-150	11/04/10	11/07/10	LCE
5a Androstane <surr>	210	!		%	AK102	A	50-150	11/04/10	11/09/10	HM
Solids										
Total Solids	10.6			%	SM20 2540G	A			10/29/10	SHA

SGS Ref.#	1105828006		
Client Name	Nortech	**Printed Date/Time**	11/11/2010 14:07
Project Name/#	10-1131	**Collected Date/Time**	10/27/2010 13:32
Client Sample ID	CZ06	**Received Date/Time**	10/29/2010 8:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

AK102 - Unknown hydrocarbon with several peaks is present.

AK102 - 5a-Androstane (surrogate) recovery is outside QC criteria due to sample matrix.

Parameter	Results		LOQ	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Semivolatile Organic Fuels Department										
Diesel Range Organics	1860		868	mg/Kg	AK102	A		11/04/10	11/07/10	LCE
DRO Silica Gel	ND		868	mg/Kg	AK102	A		11/04/10	11/07/10	LCE
Surrogates										
5a Androstane <surr>	159	!		%	AK102	A	50-150	11/04/10	11/07/10	LCE
5a Androstane <surr>	85.4			%	AK102	A	50-150	11/04/10	11/07/10	LCE
Solids										
Total Solids	11.8			%	SM20 2540G	A			10/29/10	SHA

SGS Ref.#	1105828007		
Client Name	Nortech	**Printed Date/Time**	11/11/2010 14:07
Project Name/#	10-1131	**Collected Date/Time**	10/27/2010 11:00
Client Sample ID	CZ07	**Received Date/Time**	10/29/2010 8:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

AK102 SG - The pattern is consistent with a weathered middle distillate.

AK102 - The pattern is consistent with a weathered middle distillate.

Parameter	Results	LOQ	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Semivolatile Organic Fuels Department									
Diesel Range Organics	6490	5900	mg/Kg	AK102	A		11/04/10	11/08/10	HM
DRO Silica Gel	5220	1180	mg/Kg	AK102	A		11/04/10	11/07/10	LCE
Surrogates									
5a Androstane <surr>	89.8		%	AK102	A	50-150	11/04/10	11/07/10	LCE
5a Androstane <surr>	114		%	AK102	A	50-150	11/04/10	11/08/10	HM
Solids									
Total Solids	8.42		%	SM20 2540G	A			10/29/10	SHA

SGS Ref.#	1105828008		
Client Name	Nortech	**Printed Date/Time**	11/11/2010 14:07
Project Name/#	10-1131	**Collected Date/Time**	10/28/2010 10:15
Client Sample ID	CZ08	**Received Date/Time**	10/29/2010 8:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

AK102 SG - The pattern is consistent with a weathered middle distillate.

AK102 - The pattern is consistent with a weathered middle distillate.

Parameter	Results	LOQ	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Semivolatile Organic Fuels Department									
Diesel Range Organics	36000	4330	mg/Kg	AK102	A		11/04/10	11/08/10	HM
DRO Silica Gel	37900	4330	mg/Kg	AK102	A		11/04/10	11/08/10	LCE
Surrogates									
5a Androstane <surr>	105		%	AK102	A	50-150	11/04/10	11/08/10	LCE
5a Androstane <surr>	93		%	AK102	A	50-150	11/04/10	11/08/10	HM
Solids									
Total Solids	13.0		%	SM20 2540G	A			10/29/10	SHA

SGS Ref.#	1105828009		
Client Name	Nortech	**Printed Date/Time**	11/11/2010 14:07
Project Name/#	10-1131	**Collected Date/Time**	10/27/2010 9:37
Client Sample ID	CZ09	**Received Date/Time**	10/29/2010 8:40
Matrix	Soil/Solid (dry weight)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

AK102 SG - The pattern is consistent with a weathered middle distillate.

AK102 - The pattern is consistent with a weathered middle distillate.

Parameter	Results	LOQ	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Semivolatile Organic Fuels Department									
Diesel Range Organics	35500	5080	mg/Kg	AK102	A		11/04/10	11/08/10	HM
DRO Silica Gel	34500	5080	mg/Kg	AK102	A		11/04/10	11/08/10	LCE
Surrogates									
5a Androstane <surr>	89		%	AK102	A	50-150	11/04/10	11/08/10	LCE
5a Androstane <surr>	142		%	AK102	A	50-150	11/04/10	11/08/10	HM
Solids									
Total Solids	10.7		%	SM20 2540G	A			10/29/10	SHA

SGS Ref.#	1001086	Method Blank	**Printed Date/Time**	11/11/2010 14:07
Client Name	Nortech		**Prep Batch**	
Project Name/#	10-1131		**Method**	
Matrix	Soil/Solid (dry weight)		**Date**	

QC results affect the following production samples:

1105828001, 1105828002, 1105828003, 1105828004, 1105828005, 1105828006, 1105828007, 1105828008, 1105828009

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
Solids					
Total Solids	100			%	10/29/10
Batch SPT8279					
Method SM20 2540G					
Instrument					

SGS Ref.#	1002191	Method Blank	**Printed Date/Time**	11/11/2010 14:07
Client Name	Nortech		**Prep Batch**	XXX24055
Project Name/#	10-1131		**Method**	SW3550C
Matrix	Soil/Solid (dry weight)		**Date**	11/04/2010

QC results affect the following production samples:

1105828001, 1105828002, 1105828003, 1105828004, 1105828005, 1105828006, 1105828007, 1105828008, 1105828009

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
Semivolatile Organic Fuels Department, Silica Gel					
DRO Silica Gel	ND	40.0	12.4	mg/Kg	11/07/10
Surrogates					
5a Androstane <surr>	92.3	70-125		%	11/07/10

Batch XFC9633
Method AK102
Instrument HP 7890A FID SV E R

SGS Ref.#	1002194	Method Blank	**Printed Date/Time**	11/11/2010 14:07
Client Name	Nortech		**Prep Batch**	XXX24056
Project Name/#	10-1131		**Method**	SW3550C
Matrix	Soil/Solid (dry weight)		**Date**	11/04/2010

QC results affect the following production samples:

1105828001, 1105828002, 1105828003, 1105828004, 1105828005, 1105828006, 1105828007, 1105828008, 1105828009

Parameter	Results	LOQ/CL	DL	Units	Analysis Date
Semivolatile Organic Fuels Department					
Diesel Range Organics	ND	40.0	12.4	mg/Kg	11/07/10
Surrogates					
5a Androstane <surr>	85.2	60-120		%	11/07/10

Batch	XFC9632	
Method	AK102	
Instrument	HP 7890A	FID SV E F

SGS Ref.#	1001087	Duplicate	**Printed Date/Time**	11/11/2010 14:07
Client Name	Nortech		**Prep Batch**	
Project Name/#	10-1131		**Method**	
Original	1106878008		**Date**	
Matrix	Soil/Solid (dry weight)			

QC results affect the following production samples:

1105828001, 1105828002, 1105828003, 1105828004, 1105828005, 1105828006, 1105828007, 1105828008, 1105828009

Parameter	Original Result	QC Result	Units	RPD	RPD Limits	Analysis Date
Solids						
Total Solids	90.4	88.9	%	2	(< 15)	10/29/2010

Batch SPT8279
Method SM20 2540G
Instrument

SGS Ref.#	1002192	Lab Control Sample	**Printed Date/Time**	11/11/2010	14:07
	1002193	Lab Control Sample Duplicate	**Prep Batch**	XXX24055	
Client Name	Nortech		**Method**	SW3550C	
Project Name/#	10-1131		**Date**	11/04/2010	
Matrix	Soil/Solid (dry weight)				

QC results affect the following production samples:

1105828001, 1105828002, 1105828003, 1105828004, 1105828005, 1105828006, 1105828007, 1105828008, 1105828009

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Semivolatile Organic Fuels Department, Silica Gel								
DRO Silica Gel	LCS	158	95	(70-125)			167 mg/Kg	11/07/2010
	LCSD	181	109		13	(< 20)	167 mg/Kg	11/07/2010
Surrogates								
5a Androstane <surr>	LCS		87	(70-125)				11/07/2010
	LCSD		96		10			11/07/2010

Batch	XFC9633	
Method	AK102	
Instrument	HP 7890A	FID SV E R

SGS Ref.#	1002195	Lab Control Sample	**Printed Date/Time**	11/11/2010	14:07
	1002196	Lab Control Sample Duplicate	**Prep Batch**	XXX24056	
Client Name	Nortech		**Method**	SW3550C	
Project Name/#	10-1131		**Date**	11/04/2010	
Matrix	Soil/Solid (dry weight)				

QC results affect the following production samples:

1105828001, 1105828002, 1105828003, 1105828004, 1105828005, 1105828006, 1105828007, 1105828008, 1105828009

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Semivolatile Organic Fuels Department								
Diesel Range Organics	LCS	159	95	(75-125)			167 mg/Kg	11/07/2010
	LCSD	148	89		7	(< 20)	167 mg/Kg	11/07/2010
Surrogates								
5a Androstane <surr>	LCS		91	(60-120)				11/07/2010
	LCSD		83		9			11/07/2010

Batch	XFC9632	
Method	AK102	
Instrument	HP 7890A	FID SV E F

SGS North America Inc.
CHAIN OF CUSTODY RECORD

Loc
- Alaska
- New Jer
- North Ca
- West Vir

1105828

(1)

CLIENT: Nortech

CONTACT: Jason Ginter PHONE NO: 907-586-6813

PROJECT NAME: 10-1131 PROJECT/ PWSID/ PERMIT# :

REPORTS TO: Jason EMAIL: Jginter@nortechengr.com

INVOICE TO: 2400 College Rd Fairbanks AK 99709 QUOTE #: 8884 P.O.#:

SGS Reference #:

page 1 of 1

(2)

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX/ MATRIX CODE	# CONTAINERS	SAMPLE TYPE C= COMP G= GRAB MI= Multi Incremental Samples	Preservatives Used	Analysis Required (3) DRO/102	REMARKS/ LOC ID
(1) A	CZ01	10/27/10	0843	S	1	G		X	
(2)	CZ02	10/27/10	0900	S	1	G		X	
(3)	CZ03	10/27/10	0935	S	1	G		X	
(4)	CZ04	10/27/10	1213	S	1	G		X	
(5)	CZ05	10/27/10	1244	S	1	G		X	
(6)	CZ06	10/27/10	1332	S	1	G		X	
(7)	CZ07	10/27/10	1100	S	1	G		X	
(8)	CZ08	10/28/10	1015	S	1	G		X	
(9) V	CZ09	10/27/10	0937	S	1	G		X	

(5)

Collected/Relinquished By:(1)	Date	Time	Received By:
	10/28/10		
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date 10/29/10	Time 0840	Received For Laboratory By: Amy Amil

(4)

DOD Project? YES NO

Cooler ID _____

Data Deliverable Requirements:

Requested Turnaround Time and-or Special Instructions:

Silica gel cleanup Normal Turnaround

Temperature Blank °C: 3.1 0.1

or Ambient [ ]

(See attached Sample Receipt Form)

Chain of Custody Seal: (Circle)

INTACT BROKEN ABSENT

(See attached Sample Receipt Form)

SGS

1105828

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 N/A	
Temperature blank compliant* (i.e., 0-6°C after correction factor)? * *Note: Exemption permitted for chilled samples collected less than 8 hours ago.* Cooler ID: 1 @ 3.1 w/ Therm.ID: 201 Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ *Note: If non-compliant, use form FS-0029 to document affected samples/analyses.* 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." **If temperature(s) <0°C, were all sample containers ice free?**	Yes No N/A Yes No N/A	
Delivery method (specify all that apply): USPS Alert Courier Road Runner AK Air Client Lynden Carlile ERA PenAir FedEx UPS NAC Other:	Note airbill/tracking # See Attached or N/A	
→ For samples received with payment, note amount ($) and cash / check / CC (circle one). → For samples received in FBKS, ANCH staff will verify all criteria are reviewed.	SRF Initiated by:	N/A
Do samples **match COC*** (i.e., sample IDs, dates/times collected)? * *Note: Exemption permitted if collection times differ by less than an hour; in which case, the times on the COC will be used.* Are analyses requested unambiguous?	Yes No N/A Yes No N/A	
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 N/A	
Were all VOA vials **free of headspace** (i.e., bubbles ≤6 mm)? Were all soil VOAs **field extracted** with MeOH+BFB? Were the bottles provided by SGS? (Note apparent exceptions.)	Yes No N/A Yes No N/A	
Were **proper containers** (type/mass/volume/preservative*) used? * *Note: Exemption permitted for waters to be analyzed for metals.* Were **Trip Blanks** (i.e., VOAs, LL-Hg) in cooler with samples?	Yes No N/A Yes No N/A	
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)? *Refer to attached bottle sheet (form F066) for documentation.*	Yes No N/A Yes No N/A	
For **RUSH** or **SHORT HOLD TIME** samples, were the COC & this SRF flagged, bottles flagged (e.g., stickers) and lab notified?	Yes No N/A	
For client requested, **site-specific QC** (e.g., MS/MSD/DUP), were bottles flagged (e.g., stickers) and numbered accordingly?	Yes No N/A	
For **special handling** (e.g., "MI" or foreign soils, lab filter, limited volume, Ref Lab), were bottles/paperwork flagged (e.g., sticker)?	Yes No N/A	
Was the WO# recorded in Front Counter/Sample Receiving log? **For any question answered "No," has the PM been notified and the problem resolved (or paperwork put in their bin)?**	Yes No N/A Yes No N/A	SRF Completed by: ale Bottle Sheet by: ale PM = N/A
Was **PEER REVIEW** of sample numbering completed (i.e., compare WO# on containers to COC, container ID on containers to COC, unique lab ID on each container?)	Yes No N/A	Peer Reviewed by: Metrics:
Additional notes (if applicable):		

WO# (7 digits)	Sample # - Sample #	Container ID - Container ID	Matrix	QC	Preservative (CHECKED)	TEST GROUP	PRINT LABELS	Notes: ANOMALIES - *e.g., preservative added* or SPECIAL HANDLING - *e.g., Multi-Incremental (MI), Field Filter (FF), Lab Filter (LF), use "same jar as" (SJA) for QC, 2xMeOH, bubbles, etc.*
SAMPLE ID			TYPE		CONTAINERS	ANALYSIS		Type comments below:
1105828	001 - 009	A - A	2 Soil		N/A	S_Weigh_Out		

027 JNU 8651 9613 5 027-8651 9613 10/29

Shipper's Name and Address	Shipper's Account Number	Not Negotiable
NORTECH 2400 COLLEGE RD FAIRBANKS, AK 99709 USA Tel: 9074525688	27442126076 Customer's ID Number 10588	**Air Waybill** Issued By Alaska Air Cargo ALASKA AIRLINES & HORIZON AIR P.O. BOX 68900 SEATTLE, WA 98168 800-225-2752 ALASKACARGO.COM

Consignee's Name and Address	Consignee's Account Number	Also notify
SGS North America Inc 200 W Potter Drive Anchorage, AK 99518 USA Tel: 9075622343	27400215947	NTTFD Tel:

Issuing Carrier's Agent and City		Accounting Information
		10588 NORTECH 2400 COLLEGE RD FAIRBANKS, AK 99709 USA GoldStreak
Agent's IATA Code	Account No.	

Airport of Departure (Addr. of First Carrier) and Requested Routing: Juneau

To	By First Carrier	To / By	To / By	Currency	CHGS	WT/VAL	Other	Declared Value For Carriage	Declared Value For Customs
ANC	Alaska Airlines			USD	PX	X	X	NVD	NCV

Airport of Destination	Flight/Date	Flight/Date	Amount of Insurance
Anchorage	AS 067/28		XXX

Handling Information
SHIPPED BY ASHLEY BRUCE

SCI

No of Pieces	Gross Weight	kg lb	Commodity Item No.	Chargeable Weight	Rate / Charge	Total	Nature and Quantity of Goods (Incl. Dimensions or Volume)
1	11.0	L		11.0		AS AGREED	SOIL SAMPLES Dims: 12 x 9 x11 x 1 GSX
1	11.0					AS AGREED	Volume: 0.690

1105828

Prepaid	Weight Charge	Collect	Other Charges
AS AGREED			MYC 1.32 SCC 2.00
	Valuation Charge		
	Tax		
	Total Other Charges Due Agent		
	Total Other Charges Due Carrier		

Shipper certifies that the particulars on the face hereof are correct and that **insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations. I consent to the inspection of this cargo.**

For: NORTECH

Signature of Shipper or his Agent

[ab] THIS SHIPMENT DOES NOT CONTAIN DANGEROUS GOODS

[ ] THIS SHIPMENT DOES CONTAIN DANGEROUS GOODS

Total Prepaid	Total Collect
AS AGREED	

28 Oct 2010 14:18	Juneau	Alaska Airlines
Executed On (Date)	at (Place)	Signature of Issuing Carrier or its Agent

027-8651 9613

Alert Expeditors Inc.
DBA/Petroleum Courier Service

315448

Citywide Delivery
272-0349 • 440-3351
8421 Flamingo Drive • Anchorage, Alaska 99502

Date 10-29-10

From MOR TECH

To SGS

Collect ☐	Prepay ☐ Account ☐	Advance Charges ☐
Job #	PO#	

1 COOLER

GSP - 8051-9613

1105828

Shipped Signature

Received By: [signature] Total Charge 0840

APPENDIX D
Laboratory Data Review Checklist

Laboratory Data Review Checklist

Completed by: Ashley Bruce, ***NORTECH*** Engineering

Title: Date: 11/18/2010

CS Report Name: Report Date: 11/17/2010

Consultant Firm: ***NORTECH*** Engineering

Laboratory Name: SGS North America Inc. Laboratory Report Number: 1105828

ADEC File Number: ADEC RecKey Number:

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

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

      Samples were not transferred

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

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

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

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

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

No damages

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 X NA (Please explain.) Comments:

No discrepancies

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

Data useable

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

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

No discrepancies

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

No corrective actions needed

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

Data useable

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

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

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

e. Data quality or usability affected?
Comments:

Data useable

6. QC Samples
a. Method Blank
i. One method blank reported per matrix, analysis and 20 samples?
X Yes No NA (Please explain.) Comments:

ii. All method blank results less than PQL?
X 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 X No NA (Please explain.) Comments:

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

Data Useable

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)
X Yes No NA (Please explain.) Comments:

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

Yes No X NA (Please explain.) Comments:

Not applicable

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)

X 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)

X Yes No NA (Please explain.) Comments:

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

Comments:

Not applicable

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

Yes No X NA (Please explain.) Comments:

Not applicable

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

Comments:

Data useable

c. Surrogates – Organics Only

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

X 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)

XYes 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?

X Yes No NA (Please explain.) Comments:

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

Comments:

Data useable

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 X NA (Please explain.) Comments:

Not applicable

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 X NA (Please explain.) Comments:

Not applicable

iii. All results less than PQL?

Yes No X NA (Please explain.) Comments:

Not appliacable

iv. If above PQL, what samples are affected?

Comments:

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

Comments:

Data useable

e. Field Duplicate

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

X Yes No NA (Please explain.) Comments:

ii. Submitted blind to lab?

X Yes No NA (Please explain.) Comments:

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

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

X Yes No NA (Please explain.) Comments:

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

Comments:

Data useable

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

Yes No NA (Please explain.) Comments:

i. All results less than PQL?

Yes No NA (Please explain.) Comments:

ii. If above PQL, what samples are affected?

Comments:

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

Comments:

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

X Yes No NA (Please explain.) Comments: