SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

ALASKA
CALIFORNIA
COLORADO
FLORIDA
MISSOURI
OREGON
WASHINGTON

August 5, 2008

Tim Woster
1066 Eliz Road
North Pole, Alaska 99505

Attn: Mr. Tim Woster

RE: HOME HEATING-OIL UNDERGROUND STORAGE TANK CORRECTIVE ACTION AND ASSESSMENT, 1066 ELIZ ROAD, NORTH POLE, ALASKA

This report presents the observations and the results of our sampling during the closure of a 500-gallon home heating-oil underground storage tank (UST) at 1066 Eliz Road in North Pole, Alaska. We understand you replaced the UST because your fuel-usage inventory was not consistent with past records. We were called to the site after the UST had been removed and you were notified by Stanford Construction (SC) that the former system appeared to be leaking. Although the UST is not regulated by the Alaska Department of Environmental Conservation (ADEC), we performed the UST closure site assessment in general accordance with the ADEC UST Regulations (18 AAC 78) and the ADEC UST Procedures Manual.

SCOPE OF SERVICES

The objective of this work was to characterize the area surrounding the former UST to determine if the spills or releases from the home heating-oil tank had affected the soil and groundwater. To meet this objective, we completed the following tasks:

- We assessed subsurface conditions and field-screened soils during the removal of contaminated soil;
- We collected representative soil samples from the limits of the excavation and from a test pit for analysis of hydrocarbons by an ADEC-approved laboratory;
- We installed a collection gallery for floating-product removal and collected product to the extent practicable;

2355 HILL ROAD
FAIRBANKS, ALASKA 99709-5326
907-479-0600 • FAX 907-479-5691

- We installed and sampled two driven well points;
- We collected water samples from the on-site and neighboring drinking water wells; and
- We prepared this site assessment report summarizing the results of the field observations, analytical results, and our conclusions and recommendations.

SITE DESCRIPTION

We understand the 500-gallon tank was used to store heating oil for the residence at 1066 Eliz Road, North Pole, Alaska (Figure 1). At the time of our initial site visit, the tank had been taken out of service, and was replaced with another UST.

The site is in a residential neighborhood and generally level. There is a drinking water supply well on site; the neighboring property to the south also has a drinking water supply well. Regional groundwater flow is to the northwest.

FIELD WORK

Shannon & Wilson geologist Mark Lockwood (Alaska UST decommissioning license #258) visited the site on July 11, 2007, following the removal of the fuel tank on July 10, 2007. The former tank was southwest of the residence, oriented in an east-west direction (Figure 1). The top of the old UST was reportedly about 2.5 feet below the ground surface. SC had removed the old UST and placed a new UST in the same location on July 10; the new tank had not been backfilled. SC notified the owner, Mr. Tim Woster, of encountering fuel odors during the excavation, prompting Mr. Woster to call Shannon & Wilson.

Mark Lockwood performed field screening on July 11 and found contaminated soil stockpiled along the southern edge of the UST excavation. A MiniRAE photoionization detector (PID) was used to measure the relative concentration of volatile organic compounds (VOCs) in the stockpile soil and from the excavation. The PID was calibrated prior to use at the work site using a 100 parts per million (ppm) isobutylene-in-air standard calibration gas. We collected screening samples from the site soils and transferred them into resealable plastic bags, filling the bags

about half full. The samples were then allowed to warm to room temperature, and VOC concentrations in each bag's headspace were measured with the PID within one hour of sampling. Each plastic bag was shaken for about 15 seconds; the seal of the bag was then opened to allow the PID probe to sample the air space above the soil. The maximum ionization response was recorded as the PID drew VOC vapor from the sample bag, providing a semiquantitative indication of the concentration of volatile compounds in the soil.

We collected field screening samples from the excavation at a depth of 4 feet below ground surface (bgs) and at 7 feet bgs on the south side of the UST. The samples from 4 feet bgs in the excavation yielded PID readings ranging from 1 ppm to 17 ppm. PID readings exceeded 500 ppm for warmed samples from 7 feet bgs in the excavation; the stockpile samples' PID reading exceeded 300 ppm.

Ms. Deborah Williams of the ADEC was notified of the release on July 12, 2007; she concurred with the plan to remove the contaminated soil to the extent practicable and transport it to Organic Incineration Technology, Inc. (OIT) for treatment. Ms. Williams provided an email with an approval to transport the contaminated soil. On July 12, 2007, the contaminated soil was excavated and the groundwater table exposed at a depth of about 10 feet bgs. We observed approximately 1 inch of fuel product on the ground water. Sorbent pillows were repeatedly placed on the water surface to collect the fuel; once diesel-soaked, we placed them into an open-top drum.

On July 12, 2007, SC removed contaminated soil from the area of the UST and stockpiled it adjacent to the excavation. The final size of the excavation was approximately 8 feet by 10 feet by 10 feet deep; approximately 80 cubic yards of contaminated material was removed. On July 13, 2007, SC transported the contaminated soil to OIT for treatment. On July 14, 2007, we collected samples from the limits of the excavation. SC installed a fuel-collection gallery (slotted vertical 1.5-foot-diameter culvert) in the excavation and backfilled around it with clean, sandy gravel. Sorbent pads were placed in the culvert; no additional fuel product was recovered from the collection gallery. SC excavated a test pit (TP-1; Figure 1) 10 feet deep to determine the extent of contamination; this appeared to be within the zone of groundwater fluctuation. We collected sample *1369-0714-01* from TP-1 at a depth of 10 feet. Soil in the area of the TP-1

sample was sandy gravel and moist to wet. We encountered groundwater in the sample; a sheen was observed.

To determine whether the groundwater had been affected by the release, we installed two wells on the property at the locations shown in Figure 1. The wells consisted of 1 5/16-inch (outside diameter) drill rods with machine-cut slots. Homestead Drilling installed the wells by drilling through seasonally frozen soils in the shallow subsurface and advancing the screened section of the wells to below the water table using a hydraulic hammer. Sampling was performed using a peristaltic pump with a new hose for each well point.

We collected analytical groundwater samples from the wells, and from two residential wells in close proximity to the site, to assess the potential extent of contamination. Details regarding analytical samples are detailed in the next section.

ANALYTICAL SAMPLE COLLECTION AND HANDLING

Three soil samples and a field duplicate were collected on July 14, 2007, following the UST excavation. Sample *1369-0714-01* was collected from TP-1 (Figure 1) at the water-table interface at an approximate depth of 10 feet bgs. Sample *1369-0714-02* and its field duplicate *1369-0714-03* were collected from the south side of the UST excavation at a depth of about 7 feet bgs; sample *1369-0714-04* was collected directly above the duplicate samples at a depth of about 6 feet bgs. The analytical soil samples were collected from undisturbed soil and placed into the appropriate laboratory-provided jars. The soil samples were placed in a cooler maintained at approximately 4 °C, and hand-delivered to SGS Environmental Services, Inc. (SGS) in Fairbanks using chain-of-custody (COC) documentation. The samples were analyzed for diesel range organics (DRO) by Alaska Method AK 102, and benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8021B. Analytical results for this sampling event are tabulated in Table 1.

Four groundwater samples were collected on September 5, 2007. Sample *1369-090507-001* was collected from a nearby residential well at 1074 Eliz Road; sample *1369-090507-003* was collected from the residential well within the project property's limits. We also collected samples

from monitoring wells at 1066 Eliz Rd (Figure 2). Samples *1369-090507-002* and *1369-090507-004* were collected from WP-2 and WP-1, respectively. The groundwater samples were placed in a cooler maintained at approximately 4 ° C, and hand-delivered to SGS in Fairbanks. The samples were analyzed for DRO and BTEX by the methods noted above. Analytical results for the groundwater sampling event are tabulated in Table 2.

The residential well at 1066 Eliz Road was re-sampled on September 24, 2007, due to errors in the laboratory method blank. The water sample collected during the September re-sampling was collected downstream from the residence's filter system; therefore, the well was sampled a third time on November 2, 2007. These results are also tabulated in Table 2.

QUALITY ASSURANCE AND QUALITY CONTROL

Quality Assurance/Quality Control (QA/QC) procedures assist in producing data of acceptable quality and reliability. We reviewed the analytical results for laboratory QC samples and also conducted our own QA assessment for this project. Our QA review procedures allowed us to document the accuracy and precision of the analytical data, as well as check that the analyses were sufficiently sensitive to detect analytes at levels below regulatory standards. The laboratory reports for all project samples, including the case narratives describing the laboratory QA results in detail, are included as an appendix to this report. Details regarding the results of our QA review are presented below.

Sample Handling

Samples were analyzed at SGS in Anchorage, Alaska. SGS is an ADEC-approved Laboratory for Contaminated Sites.

We reviewed the COC records and laboratory-receipt forms to confirm custody was not breached. Temperature blanks and cooler temperatures were measured to confirm the samples were kept properly chilled during shipping. The coolers were within the acceptable temperature range (between 2 ºC and 6 ºC) for both soil and water samples associated with this project. All samples were analyzed within their specified hold times.

There were no sample-handling anomalies identified that would adversely affect data quality for this project.

Analytical Sensitivity

The soil results had practical quantitation limits (PQLs) below the ADEC migration-to-groundwater (MTG) soil cleanup levels. The water sample results had PQLs below the ADEC groundwater cleanup levels.

Trip blanks were shipped with soil and water samples to be analyzed for VOCs to determine whether cross-contamination or contamination from an outside source may have occurred during shipment or storage. The trip blanks associated with this project did not contain detectable analytes.

Laboratory method blanks were run in association with the samples collected for this project to check for contributions to the analytical results possibly attributable to laboratory-based contamination. The method blank for work order # 1074295 contained detectable concentrations of benzene, toluene, and p- & m-xylenes. Sample *1369-0905407-003* contained these analytes in concentrations less than five times the method blank concentrations; therefore, the detections in the sample may be attributable to the equipment. However, none of the other samples contained these analytes.

Accuracy

Laboratory analytical accuracy may be assessed through evaluating the analyte recoveries from laboratory control spike (LCS) and LCS duplicate (LCSD) analyses, as well as the recovery of analyte surrogates added to project samples.

The LCS recovery was below the laboratory limits (36 percent) for DRO (work order # 1075670). In addition, the surrogate recovery associated with the LCS was also below laboratory control limits (47 percent). This analyte was not detected above its PQL; however, the result may be biased low.

The other LCS/LCSD, method blank, and surrogate recoveries were within the QC criteria for all analytes.

Precision

We collected field duplicate samples for soil analysis at a frequency of at least 10 percent to evaluate the precision of analytical measurements, as well as the reproducibility of our sampling technique. To evaluate the precision of the data, we calculated the relative percent difference (RPD; difference between the sample and its field duplicate divided by the mean of the two); RPD can be evaluated only if the results of the analyses for both the sample and its duplicate are above the method detection limits. Field duplicate soil sample *1369-0714-03* was collected in conjunction with sample *1369-0714-02.* The calculated RPD for soil DRO results was 114.31 percent. This result exceeds Shannon & Wilson's soil data quality objective (50 percent); soil heterogeneity likely contributed to the exceedance. Results of RPDs for BTEX results could not be calculated. One the duplicates did not have analytes detected above their PQL.

The laboratory also analyzed LCSs and LCSDs to assess the accuracy of their analytical procedures. The LCS analysis allows the laboratory to evaluate their ability to recover analytes added to clean aqueous matrices. The LCS/LCSD RPD can also be used to assess analytical precision. The results of the LCS/LCSD RPD calculations were outside the laboratory's acceptable range for DRO associated with 11369-110207-001. The LCSD was within limits for *11369-110207-001,* but the LCS was not.

QC Summary

By working in general accordance with our work plan, the samples we collected are considered to be representative of site conditions at the locations and times they were obtained. Based on our QA review, no samples were rejected as unusable due to quality control failures, and our completeness goal of obtaining 85 percent useable data was met. In general, the quality of the analytical data for this project does not appear to have been compromised by any analytical irregularities.

It is our opinion that the laboratory QA anomalies noted above did not compromise the utility of the data for this project, with the exception on the low bias for DRO for the sample collected

from the on-site water well in November 2007. The results are valid for interpreting the soil and groundwater quality at the site.

CONCLUSIONS AND RECOMMENDATIONS

Contaminated soil surrounding the former UST was removed to the extent practicable. Soil remaining at the edge of the excavation containing DRO in excess of the ADEC cleanup level appeared to be restricted to a narrow zone about 6 feet bgs on the south side of the UST. Benzene was not detected above the ADEC cleanup level. Soil collected at a depth of 10 feet bgs in TP-1 did not exceed the ADEC cleanup levels.

Floating fuel product was recovered during the excavation process and the collection gallery allows for monitoring of the groundwater; no additional product has been collected or observed.

Based on our conclusions we provide the following recommendations:

- Provide this report to the ADEC.
- Collect additional groundwater samples from the on-site and neighboring wells, as well as the monitoring wells, during summer 2008. Analyze the samples for DRO and BTEX. Provide this information to ADEC.
- Once the results of groundwater monitoring continue to show releases from the former UST have not affected the groundwater quality, apply for a conditional closure from the ADEC.

LIMITATIONS

The data presented in this report are based on the sampling and analysis we performed; they should not be construed as a guarantee of the soil quality at the site. Our sampling was intended to confirm the presence or absence of selected contaminants at the sampled locations. It is possible our subsurface tests do not represent the highest levels of contamination. In addition, conclusions cannot be drawn on the presence or absence of contaminants for which laboratory

analyses were not performed. As a result, the sampling and analysis performed can only provide you with our judgment as to the environmental characteristics of the site, and in no way guarantees an agency or its staff will reach the same conclusions.

Changes due to natural forces or human activity can occur on the site. The data presented in this report should be considered representative only of the time the data were collected. In addition, changes in government codes, regulations, or laws may occur. Because of such changes beyond our control, our observations and interpretations may need to be revised.

Please do not hesitate to contact us if you have any questions regarding this project.

Sincerely,

SHANNON & WILSON, INC.

Mark S. Lockwood, C.P.G.
Senior Principal Geologist

Reviewed by: Jon Lindstrom
Associate

Enclosures:

Table 1	July 2007 Soil Sample BTEX and DRO Analysis
Table 2	Groundwater Sample BTEX and DRO Analysis
Figure 1	Site Plan
Figure 2	Sample Locations

SGS Analytical Laboratory Reports 1073501, 1074295, 1075670

Table 1. July 2007 Soil Sample BTEX and DRO Analysis
Eliz Road UST

Sample Number	Soil Sample Date	Location	Depth (feet)	DRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	p- & m-Xylenes (mg/kg)	o-Xylene (mg/kg)
ADEC Cleanup Level				***250***	***0.02***	***5.4***	***5.5***	***78 (total)***	
1369-0714-01	7/14/07	Test Pit TP-1	10	<22.4	<0.00710	<0.0284	<0.0284	<0.0284	<0.0284
1369-0714-02	7/14/07	South side wall	7	179	0.0105	0.298	0.0646	1.51	0.694
*1369-0714-03**	7/14/07	South side wall	7	48.8	<0.00628	<0.0251	<0.0251	<0.0251	<0.0251
1369-0714-04	7/14/07	South side wall	6	**439**	<0.0140	<0.0560	<0.0560	<0.0560	<0.0560

Notes:

BOLD Analyte concentration exceeds the ADEC cleanup level.

ADEC Cleanup Levels based on migration to groundwater (Table B2)

See Appendix for complete analytical laboratory reports.

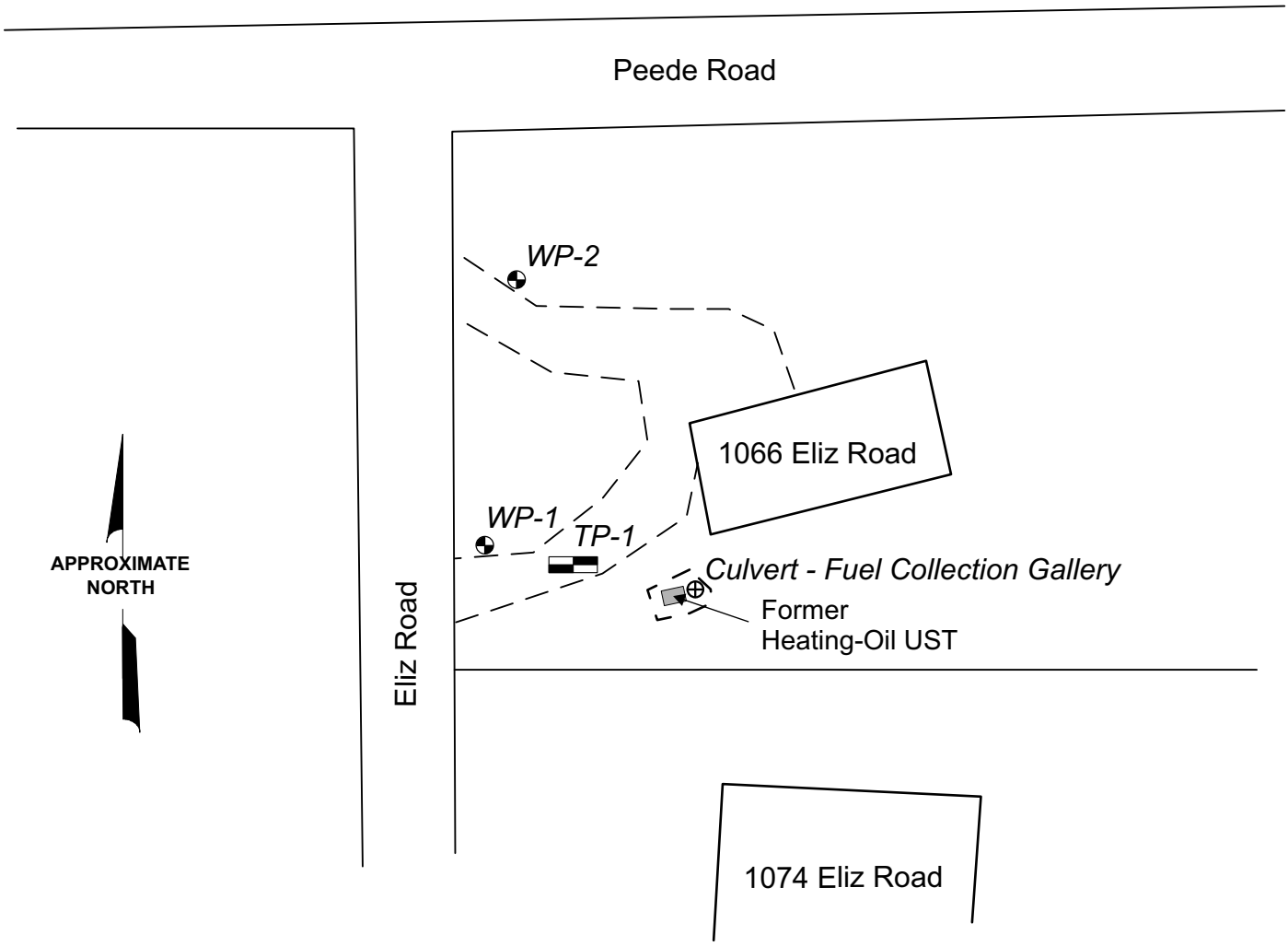
* Field duplicate of *1369-0714-02*

Table 2. September 2007 Groundwater Sample BTEX and DRO Analysis
Eliz Road UST

Sample Number	Water Sample Date	Location	DRO (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	p- & m-Xylenes (µg/L)	o-Xylene (µg/L)
		ADEC Cleanup Level	***1.5***	***5***	***1,000***	***700***	***10,000 (total)***	
1369-090507-001	9/5/07	1074 Eliz Rd.	<0.326	<0.500	<2.00	<2.00	<2.00	<2.00
1369-090507-002	9/5/07	WP-2	<0.326	<0.500	<2.00	<2.00	<2.00	<2.00
11369-110207-001	11/2/07 *	1066 Eliz Rd.	<0.323	<0.500	<2.00	<2.00	<2.00	<2.00
1369-090507-004	9/5/07	WP-1	<0.323	<0.500	<2.00	<2.00	<2.00	<2.00

Notes:

BOLD Analyte concentration exceeds the ADEC cleanup level.
See Appendix for complete analytical laboratory reports.
WP Well Point
* Second Resampling of Residential Well



LEGEND:

- Test Pit

- Monitoring Well

APPROXIMATE SCALE: 1 inch = 50 feet

0 25 50 100 150

(feet)

UST Release Investigation
1066 Eliz Street
North Pole, Alaska

SITE PLAN

August 2008 **31-1-11369-001**

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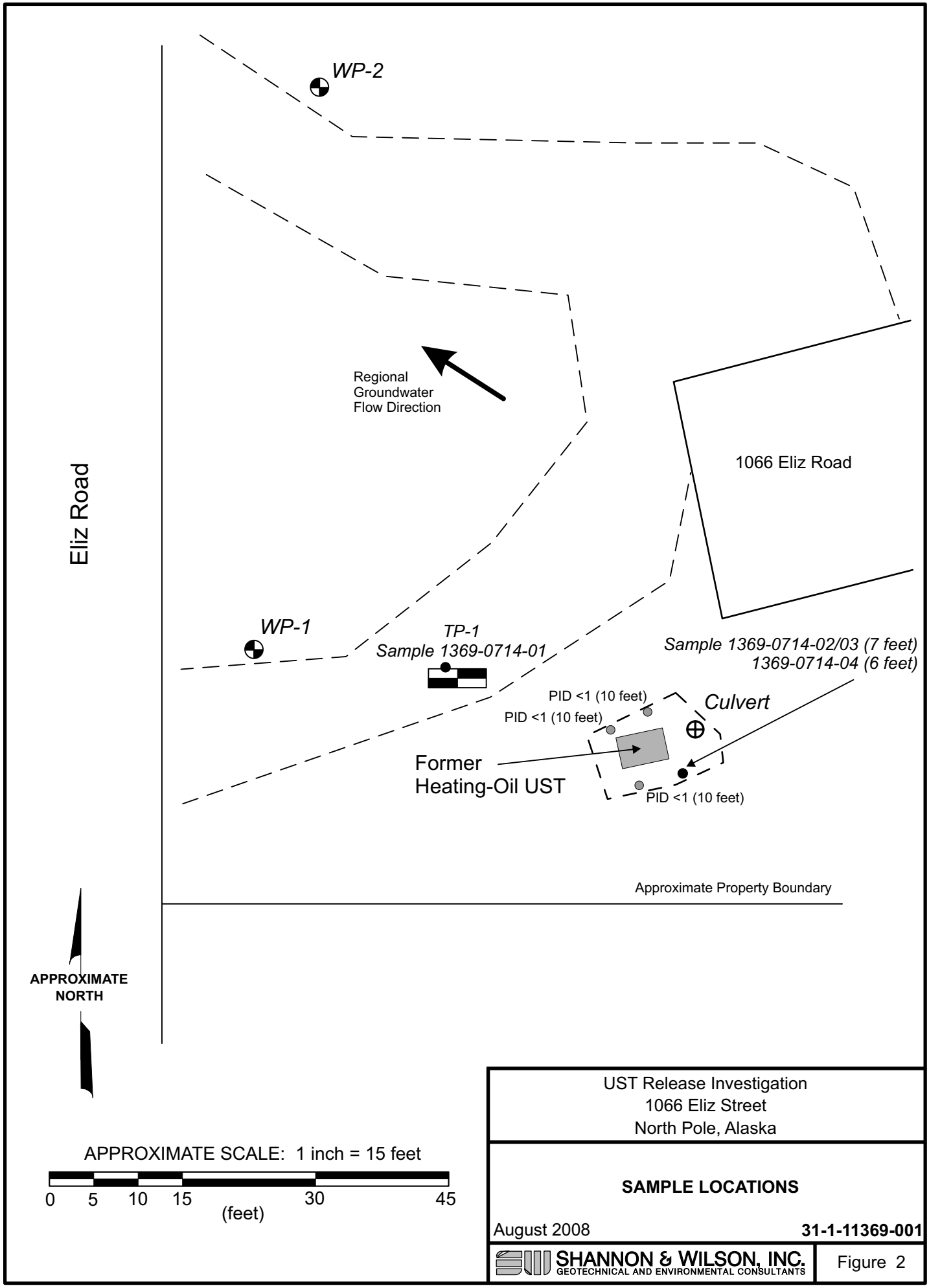
Figure 1



UST Release Investigation
1066 Eliz Street
North Pole, Alaska

SAMPLE LOCATIONS

August 2008 **31-1-11369-001**

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Figure 2

SGS Environmental Services
Alaska Division
Level II Laboratory Data Report

Project:	31-1-11369-001 Eliz UST
Client:	Shannon & Wilson-Fairbanks
SGS Work Order:	1073501

Released by: Stephen C. Ede
Alaska Division Technical Director

Stephen C. Ede
2007.07.31
15:56:56 -08'00'

Contents:

Note:
Unless otherwise noted, all quality assurance/quality control criteria is in compliance with the standards set forth by the proper regulatory authority, the SGS Quality Assurance Program Plan, and the National Environmental Accreditation Conference.

SGS

Case Narrative

Client	SHANFBK	Shannon & Wilson-Fairbanks	**Printed Date/Time**	7/31/2007	15:37
Workorder	1073501	31-1-11369-001 Eliz UST			

Sample ID	Client Sample ID

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

1073501002 **PS** **1369-0714-02**

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

1073501003 **PS** **1369-0714-03**

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

1073501004 **PS** **1369-0714-04**

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

Laboratory Analysis Report

200 W. Potter Drive
Anchorage, AK 99518-1605
Tel: (907) 562-2343
Fax: (907) 561-5301
Web: http://www.us.sgs.com

Mark Lockwood
Shannon & Wilson-Fairbanks
2355 Hill Rd
Fairbanks, AK 99709

Work Order:	1073501	
	31-1-11369-001 Eliz UST	**Released by:**
Client:	Shannon & Wilson-Fairbanks	
Report Date:	July 31, 2007	

Enclosed are the analytical results associated with the above workorder.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by SGS. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request.

The laboratory certification numbers are AK971-05 (DW), UST-005 (CS) and AK00971 (Micro) for ADEC and 001582 for NELAP (RCRA methods: 1010/1020, 1311, 6000/7000, 9040/9045, 9056, 9060, 9065, 8015B, 8021B, 8081A/8082, 8260B, 8270C).

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP, the National Environmental Laboratory Accreditation Program and, when applicable, other regulatory authorities.

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.

The following descriptors may be found on your report which will serve to further qualify the data.

PQL	Practical Quantitation Limit (reporting limit).
U	Indicates the analyte was analyzed for but not detected.
F	Indicates value that is greater than or equal to the MDL.
J	The quantitation is an estimation.
ND	Indicates the analyte is not detected.
B	Indicates the analyte is found in a blank associated with the sample.
*	The analyte has exceeded allowable regulatory or control limits.
GT	Greater Than
D	The analyte concentration is the result of a dilution.
LT	Less Than
!	Surrogate out of control limits.
Q	QC parameter out of acceptance range.
M	A matrix effect was present.
JL	The analyte was positively identified, but the quantitation is a low estimation.
E	The analyte result is above the calibrated range.

Note: Soil samples are reported on a dry weight basis unless otherwise specified.

SGS

SGS Ref.#	1073501001
Client Name	Shannon & Wilson-Fairbanks
Project Name/#	31-1-11369-001 Eliz UST
Client Sample ID	1369-0714-01
Matrix	Soil/Solid

All Dates/Times are Alaska Standard Time

Printed Date/Time	07/31/2007 15:37
Collected Date/Time	07/14/2007 11:20
Received Date/Time	07/19/2007 9:00
Technical Director	**Stephen C. Ede**

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Benzene	ND	0.00710	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
Toluene	ND	0.0284	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
Ethylbenzene	ND	0.0284	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
P & M -Xylene	ND	0.0284	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
o-Xylene	ND	0.0284	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
Surrogates									
1,4-Difluorobenzene <surr>	100		%	SW8021B	A	80-120	07/14/07	07/23/07	NHN
Semivolatile Organic Fuels Department									
Diesel Range Organics	ND	22.4	mg/Kg	AK102	B		07/27/07	07/29/07	HKG
Surrogates									
5a Androstane <surr>	90		%	AK102	B	50-150	07/27/07	07/29/07	HKG
Solids									
Total Solids	88.3		%	SM20 2540G	B			07/25/07	IWM

SGS Ref.#	1073501002	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	07/31/2007 15:37
Project Name/#	31-1-11369-001 Eliz UST	**Collected Date/Time**	07/14/2007 11:25
Client Sample ID	1369-0714-02	**Received Date/Time**	07/19/2007 9:00
Matrix	Soil/Solid	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

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

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Benzene	0.0105	0.00677	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
Toluene	0.298	0.0271	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
Ethylbenzene	0.0646	0.0271	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
P & M -Xylene	1.51	0.0271	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
o-Xylene	0.694	0.0271	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
Surrogates									
1,4-Difluorobenzene <surr>	104		%	SW8021B	A	80-120	07/14/07	07/23/07	NHN
Semivolatile Organic Fuels Department									
Diesel Range Organics	179	21.0	mg/Kg	AK102	B		07/27/07	07/29/07	HKG
Surrogates									
5a Androstane <surr>	97.4		%	AK102	B	50-150	07/27/07	07/29/07	HKG
Solids									
Total Solids	94.8		%	SM20 2540G	B			07/25/07	IWM

SGS Ref.#	1073501003	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	07/31/2007 15:37
Project Name/#	31-1-11369-001 Eliz UST	**Collected Date/Time**	07/14/2007 11:30
Client Sample ID	1369-0714-03	**Received Date/Time**	07/19/2007 9:00
Matrix	Soil/Solid	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

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

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Benzene	ND	0.00628	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
Toluene	ND	0.0251	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
Ethylbenzene	ND	0.0251	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
P & M -Xylene	ND	0.0251	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
o-Xylene	ND	0.0251	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
Surrogates									
1,4-Difluorobenzene <surr>	94.9		%	SW8021B	A	80-120	07/14/07	07/23/07	NHN
Semivolatile Organic Fuels Department									
Diesel Range Organics	48.8	20.7	mg/Kg	AK102	B		07/27/07	07/29/07	HKG
Surrogates									
5a Androstane <surr>	104		%	AK102	B	50-150	07/27/07	07/29/07	HKG
Solids									
Total Solids	96.1		%	SM20 2540G	B			07/25/07	IWM

SGS Ref.#	1073501004	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	07/31/2007 15:37
Project Name/#	31-1-11369-001 Eliz UST	**Collected Date/Time**	07/14/2007 11:35
Client Sample ID	1369-0714-04	**Received Date/Time**	07/19/2007 9:00
Matrix	Soil/Solid	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

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

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Benzene	ND	0.0140	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
Toluene	ND	0.0560	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
Ethylbenzene	0.0592	0.0560	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
P & M -Xylene	0.319	0.0560	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
o-Xylene	0.253	0.0560	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
Surrogates									
1,4-Difluorobenzene <surr>	94.8		%	SW8021B	A	80-120	07/14/07	07/23/07	NHN
Semivolatile Organic Fuels Department									
Diesel Range Organics	439	22.1	mg/Kg	AK102	B		07/27/07	07/29/07	HKG
Surrogates									
5a Androstane <surr>	89.1		%	AK102	B	50-150	07/27/07	07/29/07	HKG
Solids									
Total Solids	90.2		%	SM20 2540G	B			07/25/07	IWM

SGS

SGS Ref.#	1073501005
Client Name	Shannon & Wilson-Fairbanks
Project Name/#	31-1-11369-001 Eliz UST
Client Sample ID	Trip Blank
Matrix	Soil/Solid

All Dates/Times are Alaska Standard Time

Printed Date/Time	07/31/2007 15:37
Collected Date/Time	07/14/2007 11:35
Received Date/Time	07/19/2007 9:00
Technical Director	**Stephen C. Ede**

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Benzene	ND	0.0134	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
Toluene	ND	0.0536	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
Ethylbenzene	ND	0.0536	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
P & M -Xylene	ND	0.0536	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
o-Xylene	ND	0.0536	mg/Kg	SW8021B	A		07/14/07	07/23/07	NHN
Surrogates									
1,4-Difluorobenzene <surr>	99.6		%	SW8021B	A	80-120	07/14/07	07/23/07	NHN
Solids									
Total Solids	100		%	SM20 2540G	A			07/25/07	IWM

SGS Ref.#	777838 Method Blank	**Printed Date/Time**		07/31/2007 15:37
Client Name	Shannon & Wilson-Fairbanks	**Prep**	**Batch**	VXX16998
Project Name/#	31-1-11369-001 Eliz UST		**Method**	AK101
Matrix	Soil/Solid		**Date**	07/22/2007

QC results affect the following production samples:

1073501001, 1073501002, 1073501003, 1073501004, 1073501005

Parameter	Results	Reporting/Control Limit	MDL	Units	Analysis Date
Volatile Fuels Department					
Benzene	ND	0.0125	0.00400	mg/Kg	07/22/07
Toluene	ND	0.0500	0.0150	mg/Kg	07/22/07
Ethylbenzene	ND	0.0500	0.0150	mg/Kg	07/22/07
P & M -Xylene	ND	0.0500	0.0150	mg/Kg	07/22/07
o-Xylene	ND	0.0500	0.0150	mg/Kg	07/22/07
Surrogates					
1,4-Difluorobenzene <surr>	101	80-120		%	07/22/07

Batch VFC8480
Method SW8021B
Instrument HP 5890 Series II PID+FID VCA

SGS Ref.#	778767	Method Blank	**Printed Date/Time**	07/31/2007 15:37
Client Name	Shannon & Wilson-Fairbanks		**Prep Batch**	
Project Name/#	31-1-11369-001 Eliz UST		**Method**	
Matrix	Soil/Solid		**Date**	

QC results affect the following production samples:

1073501001, 1073501002, 1073501003, 1073501004, 1073501005

Parameter	Results	Reporting/Control Limit	MDL	Units	Analysis Date
Solids					
Total Solids	100			%	07/25/07
Batch SPT7301					
Method SM20 2540G					
Instrument					

SGS Ref.#	779246	Method Blank	**Printed Date/Time**		07/31/2007 15:37
Client Name	Shannon & Wilson-Fairbanks		**Prep**	**Batch**	XXX18344
Project Name/#	31-1-11369-001 Eliz UST			**Method**	SW3550B
Matrix	Soil/Solid			**Date**	07/27/2007

QC results affect the following production samples:

1073501001, 1073501002, 1073501003, 1073501004

Parameter	Results	Reporting/Control Limit	MDL	Units	Analysis Date
Semivolatile Organic Fuels Department					
Diesel Range Organics	ND	19.9	1.99	mg/Kg	07/30/07
Surrogates					
5a Androstane <surr>	98.4	60-120		%	07/30/07

Batch XFC7491
Method AK102
Instrument HP 5890 Series II FID SV D F

SGS Ref.#	778768	Duplicate	**Printed Date/Time**	07/31/2007 15:37
Client Name	Shannon & Wilson-Fairbanks		**Prep Batch**	
Project Name/#	31-1-11369-001 Eliz UST		**Method**	
Original	1073431001		**Date**	
Matrix	Soil/Solid			

QC results affect the following production samples:

1073501001, 1073501002, 1073501003, 1073501004, 1073501005

Parameter	Original Result	QC Result	Units	RPD	RPD Limits	Analysis Date
Solids						
Total Solids	95.0	95.6	%	1	(< 5)	07/25/2007
Batch SPT7301						
Method SM20 2540G						
Instrument						

SGS

SGS Ref.#	777839	Lab Control Sample	**Printed Date/Time**	07/31/2007	15:37
	777840	Lab Control Sample Duplicate	**Prep Batch**	VXX16998	
Client Name	Shannon & Wilson-Fairbanks		**Method**	AK101	
Project Name/#	31-1-11369-001 Eliz UST		**Date**	07/22/2007	
Matrix	Soil/Solid				

QC results affect the following production samples:

1073501001, 1073501002, 1073501003, 1073501004, 1073501005

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department								
Benzene	LCS	1.18	94	(80-125)			1.25 mg/Kg	07/22/2007
	LCSD	1.19	95		0	(< 20)	1.25 mg/Kg	07/22/2007
Toluene	LCS	1.22	98	(85-120)			1.25 mg/Kg	07/22/2007
	LCSD	1.22	98		0	(< 20)	1.25 mg/Kg	07/22/2007
Ethylbenzene	LCS	1.24	99	(85-125)			1.25 mg/Kg	07/22/2007
	LCSD	1.25	100		1	(< 20)	1.25 mg/Kg	07/22/2007
P & M -Xylene	LCS	2.49	100	(85-125)			2.50 mg/Kg	07/22/2007
	LCSD	2.50	100		0	(< 20)	2.50 mg/Kg	07/22/2007
o-Xylene	LCS	1.22	98	(85-125)			1.25 mg/Kg	07/22/2007
	LCSD	1.23	98		0	(< 20)	1.25 mg/Kg	07/22/2007
Surrogates								
1,4-Difluorobenzene <surr>	LCS		103	(80-120)				07/22/2007
	LCSD		103		0			07/22/2007

Batch	VFC8480
Method	SW8021B
Instrument	HP 5890 Series II PID+FID VCA

SGS Ref.#	779247	Lab Control Sample	**Printed Date/Time**	07/31/2007	15:37
	779248	Lab Control Sample Duplicate	**Prep Batch**	XXX18344	
Client Name	Shannon & Wilson-Fairbanks		**Method**	SW3550B	
Project Name/#	31-1-11369-001 Eliz UST		**Date**	07/27/2007	
Matrix	Soil/Solid				

QC results affect the following production samples:

1073501001, 1073501002, 1073501003, 1073501004

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Semivolatile Organic Fuels Department								
Diesel Range Organics	LCS	28.2	86	(75-125)			32.9 mg/Kg	07/30/2007
	LCSD	26.5	80		6	(< 20)	33.3 mg/Kg	07/30/2007
Surrogates								
5a Androstane <surr>	LCS		87	(60-120)				07/30/2007
	LCSD		74		15			07/30/2007

Batch XFC7491
Method AK102
Instrument HP 5890 Series II FID SV D F

1073501

Shannon & Wilson, Inc.

400 N. 34th Street, Suite 100
Seattle, WA 98103
(206) 632-8020

1150 Olive Blvd., Suite 276
St. Louis, MO 63141
(314) 872-8170

2355 Hill Road
Fairbanks, AK 99707
(907) 479-0600

5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
(907) 561-2120

Chain of Custody Record

Laboratory SGS
Attn: Kim T

Analysis Parameters/Sample Container Description
(include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled (2007)	Comp.	Grab	DRO	BTEX 8021					Total Number of Containers	Remarks/Matrix
1369-0714-01	1 A-B	11:20	7-14		X	X	X					2	Soil
1369-0714-02	2	11:25	"		"	X	X					2	"
1369-0714-03	3	11:30	"		"	X	X					2	"
1369-0714-04	4	11:35	"		"	X	X					2	"
trip blank	5 A											1	

Project Information		Sample Receipt	
Project Number:	31-1-11369-001	Total Number of Containers	
Project Name:	Eliz. UST	COC Seals/Intact? Y/N/NA	
Contact:	Mark Lockwood	Received Good Cond./Cold	
Ongoing Project?	Yes ☒ No ☐	Delivery Method:	hand
Sampler:	MGL	(attach shipping bill, if any)	

Instructions

Requested Turn Around Time: standard

Special Instructions: potentially contaminated samples.

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: Time: 13:45	Signature: Time: 1345	Signature: Time:
Printed Name: Mark Lockwood Date: 7/18/07	Printed Name: Sunny Castlebery Date: 7/18/07	Printed Name: Date:
Company: SEW FBX	Company: SGS	Company:

Received By: 1.	Received By: 2.	Received By: 3.
Signature: Time: 1345	Signature: Time:	Signature: Time: 0900
Printed Name: Sunny Castlebery Date: 7/18/07	Printed Name: Date:	Printed Name: Joe Rudi Date: 7/19/07
Company: SGS	Company:	Company: SGS

Distribution: White - w/shipment - returned to Shannon & Wilson w/ Laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

F-19-91/UR

SGS

SAMPLE RECEIPT FORM (page 2)

SGS WO#: 1073501

#	Container ID	Matrix	Test	QC	TB	Container Volume: 1 L	500 mL	250 mL	125 mL	60 mL	40 mL	8oz (250 mL)	4oz (125 mL)	Other	Container Type: AG	CG	HDPE	Nalgene	Cubie	Coli	Septa	Other	Preservative: None	HCl	HNO_3	H_2SO_4	MeOH	$Na_2S_2O_3$	NaOH	Other
1-4	A	2	BTEX 8021										4		X						X						X			
	B		DRO									4			X								X							
5	A	2	BTEX 8021		X								1		X						X						X			
Bottle Totals												4	5																	

Completed by: Sunny Castleberry Date: 7/18/07

SGS

SAMPLE RECEIPT FORM

SGS WO#: 10735501

Yes	No	NA		
	X		Are samples **RUSH**, priority, or *w/n 72 hrs.* of **hold time**?	**Due Date:** 8/1/07
		X	If yes have you done *e-mail notification*?	**Received Date:** 7/18/07
	X		Are samples *within 24 hrs.* of **hold time** or **due date**?	**Received Time:** 1345
		X	If yes, have you *spoken with* Supervisor?	Is **date/time conversion** necessary?
		X	Archiving bottles – if req., are they properly marked?	# of hours to AK Local Time:
		X	Are there any **problems**? PM Notified?	**Thermometer ID:** Longstem 7
		X	Were samples preserved correctly and pH verified?	
		X	If this is for PWS, provide **PWSID.**	
		X	Will courier charges apply?	
		X	Method of payment?	
X			Data package required? (Level: 1 / 2 / 3 / 4)	
			Notes:	
	X		Is this a DoD project? (USACE, Navy, AFCEE)	

Cooler ID	Temp Blank	Cooler Temp
1	5.9 °C	5.7 °C
	°C	°C
	°C	°C
	°C	°C
	°C	°C
	°C	°C

*Temperature readings include thermometer correction factors

Delivery method (circle all that apply): (Client)
Alert Courier / UPS / FedEx / USPS /
AA Goldstreak / NAC / ERA / PenAir / Carlile
Lynden / SGS / Other:

Airbill #

Additional Sample Remarks: *(√ if applicable)*

- Extra Sample Volume?
- Limited Sample Volume?
- X Field preserved for volatiles?
- Field-filtered for dissolved?
- Lab-filtered for dissolved?
- Ref Lab required?
- Foreign Soil?

This section must be filled out for DoD projects (USACE, Navy, AFCEE)

Yes	No	
		Is received temperature 4 ± 2°C?
		Exceptions: Samples/Analyses Affected:
		Rad Screen performed? Result:
		Was there an airbill? *(Note # above in the right hand column)*
		Was cooler sealed with custody seals?
		# / where:
		Were seal(s) intact upon arrival?
		Was there a COC with cooler?
		Was COC sealed in plastic bag & taped inside lid of cooler?
		Was the COC filled out properly?
		Did the COC indicate COE / AFCEE / Navy project?
		Did the COC and samples correspond?
		Were all sample packed to prevent breakage?
		Packing material:
		Were all samples unbroken and clearly labeled?
		Were all samples sealed in separate plastic bags?
		Were all VOCs free of headspace and/or MeOH preserved?
		Were correct container / sample sizes submitted?
		Is sample condition good?
		Was copy of CoC, SRF, and custody seals given to PM to fax?

This section must be filled if problems are found.

Yes	No	
		Was client notified of problems?

Individual contacted:
Via: Phone / Fax / Email (*circle one*)
Date/Time:
Reason for contact:

Change Order Required?
SGS Contact:

Notes:

Completed by (sign): Sunny Castlebery **(print):** Sunny Castlebery

Login proof (check one): waived ____ required ✓ performed by:

SGS

SGS WO#: 1073501

SAMPLE RECEIPT FORM FOR TRANSFERS
From
FAIRBANKS, ALASKA OR HONOLULU, HAWAII
To

ANCHORAGE, AK

TO BE COMPLETED IN ANCHORAGE UPON ARRIVAL FROM FAIRBANKS OR HAWAII. NOTES RECORDED BELOW ARE ACTIONS NEEDED UPON ARRIVAL IN ANCHORAGE.

Notes: _____

Receipt Date / Time: 7/19/07

Is Sample Date/Time Conversion Necessary? Yes _____ No ✓

Number of Hours From Alaska Local Time: ~

Foreign Soil? Yes _____ No ✓

Delivery method to Anchorage (*circle all that apply*):

Alert Courier / UPS / FedEx / USPS / AA Goldstreak / NAC / ERA / PenAir / Carlile / (Lynden) / SGS

Other: _____

Airbill # _____

COOLER AND TEMP BLANK READINGS*

Cooler ID	Temp Blank (°C)	Cooler (°C)	Cooler ID	Temp Blank (°C)	Cooler (°C)
3	690 2.0	700 1.5			

CUSTODY SEALS INTACT: (YES) / NO

#/WHERE: one on front + one on back

COMPLETED BY: [signature]

**Temperature readings include thermometer correction factors.*

Cooler 3 WO# 3050, 3049, 3501 70DC = 1.5 690TB = 2.0

SGS Environmental

CUSTODY SEAL WO# 3050, 3049, 3501

Signature: Sunny Castleberry Date/Time: 7/18/07 1640

SGS Environmental

CUSTODY SEAL WO# 3050, 3049, 3501

Signature: Sunny Castleberry Date/Time: 7/18/07 1640

SGS Environmental Services
Alaska Division
Level II Laboratory Data Report

Project:	31-1-11369-001 Eliz Rd UST
Client:	Shannon & Wilson-Fairbanks
SGS Work Order:	1074295

Released by: Stephen C. Ede
Alaska Division Technical Director

Stephen C. Ede
2007.09.20
08:19:29 -08'00'

Contents:

Note:
Unless otherwise noted, all quality assurance/quality control criteria is in compliance with the standards set forth by the proper regulatory authority, the SGS Quality Assurance Program Plan, and the National Environmental Accreditation Conference.

Case Narrative

Client	SHANFBK	Shannon & Wilson-Fairbanks	**Printed Date/Time**	9/19/2007	16:56
Workorder	1074295	31-1-11369-001 Eliz Rd UST			

Sample ID	Client Sample ID

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

Laboratory Analysis Report

200 W. Potter Drive
Anchorage, AK 99518-1605
Tel: (907) 562-2343
Fax: (907) 561-5301
Web: http://www.us.sgs.com

Mark Lockwood
Shannon & Wilson-Fairbanks
2355 Hill Rd
Fairbanks, AK 99709

Work Order:	1074295	
	31-1-11369-001 Eliz Rd UST	**Released by:**
Client:	Shannon & Wilson-Fairbanks	
Report Date:	September 19, 2007	

Enclosed are the analytical results associated with the above workorder.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by SGS. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request.

The laboratory certification numbers are AK971-05 (DW), UST-005 (CS) and AK00971 (Micro) for ADEC and 001828 for NELAP (RCRA methods: 1010/1020, 1311, 6000/7000, 9040/9045, 9056, 9060, 9065, 8015B, 8021B, 8081A/8082, 8260B, 8270C).

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP, the National Environmental Laboratory Accreditation Program and, when applicable, other regulatory authorities.

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.

The following descriptors may be found on your report which will serve to further qualify the data.

PQL	Practical Quantitation Limit (reporting limit).
U	Indicates the analyte was analyzed for but not detected.
F	Indicates value that is greater than or equal to the MDL.
J	The quantitation is an estimation.
ND	Indicates the analyte is not detected.
B	Indicates the analyte is found in a blank associated with the sample.
*	The analyte has exceeded allowable regulatory or control limits.
GT	Greater Than
D	The analyte concentration is the result of a dilution.
LT	Less Than
!	Surrogate out of control limits.
Q	QC parameter out of acceptance range.
M	A matrix effect was present.
JL	The analyte was positively identified, but the quantitation is a low estimation.
E	The analyte result is above the calibrated range.

Note: Soil samples are reported on a dry weight basis unless otherwise specified.

SGS Ref.#	1074295001	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	09/19/2007 16:56
Project Name/#	31-1-11369-001 Eliz Rd UST	**Collected Date/Time**	09/05/2007 12:45
Client Sample ID	1369-090507-001	**Received Date/Time**	09/07/2007 10:30
Matrix	Water (Surface, Eff., Ground)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Benzene	ND	0.500	ug/L	SW8021B	B		09/12/07	09/12/07	HM
Toluene	ND	2.00	ug/L	SW8021B	B		09/12/07	09/12/07	HM
Ethylbenzene	ND	2.00	ug/L	SW8021B	B		09/12/07	09/12/07	HM
P & M -Xylene	ND	2.00	ug/L	SW8021B	B		09/12/07	09/12/07	HM
o-Xylene	ND	2.00	ug/L	SW8021B	B		09/12/07	09/12/07	HM
Surrogates									
1,4-Difluorobenzene <surr>	92.3		%	SW8021B	B	80-120	09/12/07	09/12/07	HM
Semivolatile Organic Fuels Department									
Diesel Range Organics	ND	0.326	mg/L	AK102	D		09/15/07	09/18/07	HKG
Surrogates									
5a Androstane <surr>	96.1		%	AK102	D	50-150	09/15/07	09/18/07	HKG

SGS Ref.#	1074295002	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	09/19/2007 16:56
Project Name/#	31-1-11369-001 Eliz Rd UST	**Collected Date/Time**	09/05/2007 13:49
Client Sample ID	1369-090507-002	**Received Date/Time**	09/07/2007 10:30
Matrix	Water (Surface, Eff., Ground)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Benzene	ND	0.500	ug/L	SW8021B	B		09/12/07	09/12/07	HM
Toluene	ND	2.00	ug/L	SW8021B	B		09/12/07	09/12/07	HM
Ethylbenzene	ND	2.00	ug/L	SW8021B	B		09/12/07	09/12/07	HM
P & M -Xylene	ND	2.00	ug/L	SW8021B	B		09/12/07	09/12/07	HM
o-Xylene	ND	2.00	ug/L	SW8021B	B		09/12/07	09/12/07	HM
Surrogates									
1,4-Difluorobenzene <surr>	94.3		%	SW8021B	B	80-120	09/12/07	09/12/07	HM
Semivolatile Organic Fuels Department									
Diesel Range Organics	ND	0.326	mg/L	AK102	D		09/15/07	09/18/07	HKG
Surrogates									
5a Androstane <surr>	86.7		%	AK102	D	50-150	09/15/07	09/18/07	HKG

SGS Ref.#	1074295003	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	09/19/2007 16:56
Project Name/#	31-1-11369-001 Eliz Rd UST	**Collected Date/Time**	09/05/2007 14:10
Client Sample ID	1369-090507-003	**Received Date/Time**	09/07/2007 10:30
Matrix	Water (Surface, Eff., Ground)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Benzene	0.598	0.500	ug/L	SW8021B	B		09/12/07	09/12/07	HM
Toluene	2.10	2.00	ug/L	SW8021B	B		09/12/07	09/12/07	HM
Ethylbenzene	ND	2.00	ug/L	SW8021B	B		09/12/07	09/12/07	HM
P & M -Xylene	ND	2.00	ug/L	SW8021B	B		09/12/07	09/12/07	HM
o-Xylene	ND	2.00	ug/L	SW8021B	B		09/12/07	09/12/07	HM
Surrogates									
1,4-Difluorobenzene <surr>	94.6		%	SW8021B	B	80-120	09/12/07	09/12/07	HM
Semivolatile Organic Fuels Department									
Diesel Range Organics	ND	0.309	mg/L	AK102	D		09/15/07	09/18/07	HKG
Surrogates									
5a Androstane <surr>	98		%	AK102	D	50-150	09/15/07	09/18/07	HKG

SGS Ref.#	1074295004	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	09/19/2007 16:56
Project Name/#	31-1-11369-001 Eliz Rd UST	**Collected Date/Time**	09/05/2007 16:05
Client Sample ID	1369-090507-004	**Received Date/Time**	09/07/2007 10:30
Matrix	Water (Surface, Eff., Ground)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Benzene	ND	0.500	ug/L	SW8021B	B		09/12/07	09/12/07	HM
Toluene	ND	2.00	ug/L	SW8021B	B		09/12/07	09/12/07	HM
Ethylbenzene	ND	2.00	ug/L	SW8021B	B		09/12/07	09/12/07	HM
P & M -Xylene	ND	2.00	ug/L	SW8021B	B		09/12/07	09/12/07	HM
o-Xylene	ND	2.00	ug/L	SW8021B	B		09/12/07	09/12/07	HM
Surrogates									
1,4-Difluorobenzene <surr>	93.8		%	SW8021B	B	80-120	09/12/07	09/12/07	HM
Semivolatile Organic Fuels Department									
Diesel Range Organics	ND	0.323	mg/L	AK102	D		09/15/07	09/18/07	HKG
Surrogates									
5a Androstane <surr>	94.6		%	AK102	D	50-150	09/15/07	09/18/07	HKG

SGS Ref.#	1074295005
Client Name	Shannon & Wilson-Fairbanks
Project Name/#	31-1-11369-001 Eliz Rd UST
Client Sample ID	Trip Blank
Matrix	Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time

Printed Date/Time	09/19/2007 16:56
Collected Date/Time	09/05/2007 12:45
Received Date/Time	09/07/2007 10:30
Technical Director	**Stephen C. Ede**

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Benzene	ND	0.500	ug/L	SW8021B	B		09/12/07	09/12/07	HM
Toluene	ND	2.00	ug/L	SW8021B	B		09/12/07	09/12/07	HM
Ethylbenzene	ND	2.00	ug/L	SW8021B	B		09/12/07	09/12/07	HM
P & M -Xylene	ND	2.00	ug/L	SW8021B	B		09/12/07	09/12/07	HM
o-Xylene	ND	2.00	ug/L	SW8021B	B		09/12/07	09/12/07	HM
Surrogates									
1,4-Difluorobenzene <surr>	93.9		%	SW8021B	B	80-120	09/12/07	09/12/07	HM

SGS Ref.#	790291 Method Blank	**Printed Date/Time**		09/19/2007 16:56
Client Name	Shannon & Wilson-Fairbanks	**Prep**	**Batch**	VXX17287
Project Name/#	31-1-11369-001 Eliz Rd UST		**Method**	SW5030B
Matrix	Water (Surface, Eff., Ground)		**Date**	09/12/2007

QC results affect the following production samples:

1074295001, 1074295002, 1074295003, 1074295004, 1074295005

Parameter	Results	Reporting/Control Limit	MDL	Units	Analysis Date
Volatile Fuels Department					
Benzene	0.172 J	0.500	0.150	ug/L	09/12/07
Toluene	0.909 J	2.00	0.620	ug/L	09/12/07
Ethylbenzene	ND	2.00	0.620	ug/L	09/12/07
P & M -Xylene	0.930 J	2.00	0.620	ug/L	09/12/07
o-Xylene	ND	2.00	0.620	ug/L	09/12/07
Surrogates					
1,4-Difluorobenzene <surr>	93.9	80-120		%	09/12/07

Batch VFC8601
Method SW8021B
Instrument HP 5890 Series II PID+HECD VBA

SGS Ref.#	790936	Method Blank	**Printed Date/Time**		09/19/2007 16:56
Client Name	Shannon & Wilson-Fairbanks		**Prep**	**Batch**	XXX18576
Project Name/#	31-1-11369-001 Eliz Rd UST			**Method**	SW3520C
Matrix	Water (Surface, Eff., Ground)			**Date**	09/15/2007

QC results affect the following production samples:

1074295001, 1074295002, 1074295003, 1074295004

Parameter	Results	Reporting/Control Limit	MDL	Units	Analysis Date
Semivolatile Organic Fuels Department					
Diesel Range Organics	ND	0.300	0.0600	mg/L	09/18/07
Surrogates					
5a Androstane <surr>	92	60-120		%	09/18/07
Batch	XFC7592				
Method	AK102				
Instrument	HP 5890 Series II FID SV D F				

SGS Ref.#	790292	Lab Control Sample	**Printed Date/Time**	09/19/2007	16:56
	790293	Lab Control Sample Duplicate	**Prep Batch**	VXX17287	
Client Name	Shannon & Wilson-Fairbanks		**Method**	SW5030B	
Project Name/#	31-1-11369-001 Eliz Rd UST		**Date**	09/12/2007	
Matrix	Water (Surface, Eff., Ground)				

QC results affect the following production samples:

1074295001, 1074295002, 1074295003, 1074295004, 1074295005

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department								
Benzene	LCS	93.8	94	(80-120)			100 ug/L	09/12/2007
	LCSD	93.5	94		0	(< 20)	100 ug/L	09/12/2007
Toluene	LCS	95.0	95	(80-120)			100 ug/L	09/12/2007
	LCSD	96.7	97		2	(< 20)	100 ug/L	09/12/2007
Ethylbenzene	LCS	101	101	(87-125)			100 ug/L	09/12/2007
	LCSD	100	100		1	(< 20)	100 ug/L	09/12/2007
P & M -Xylene	LCS	201	101	(87-125)			200 ug/L	09/12/2007
	LCSD	198	99		1	(< 20)	200 ug/L	09/12/2007
o-Xylene	LCS	99.6	100	(85-120)			100 ug/L	09/12/2007
	LCSD	98.9	99		1	(< 20)	100 ug/L	09/12/2007
Surrogates								
1,4-Difluorobenzene <surr>	LCS		100	(80-120)				09/12/2007
	LCSD		102		3			09/12/2007

Batch	VFC8601
Method	SW8021B
Instrument	HP 5890 Series II PID+HECD VBA

SGS

SGS Ref.#	790937	Lab Control Sample	**Printed Date/Time**	09/19/2007	16:56
	790938	Lab Control Sample Duplicate	**Prep Batch**	XXX18576	
Client Name	Shannon & Wilson-Fairbanks		**Method**	SW3520C	
Project Name/#	31-1-11369-001 Eliz Rd UST		**Date**	09/15/2007	
Matrix	Water (Surface, Eff., Ground)				

QC results affect the following production samples:

1074295001, 1074295002, 1074295003, 1074295004

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Semivolatile Organic Fuels Department								
Diesel Range Organics	LCS	0.878	88	(75-125)			1 mg/L	09/18/2007
	LCSD	1.06	106		19	(< 20)	1 mg/L	09/18/2007
Surrogates								
5a Androstane <surr>	LCS		81	(60-120)				09/18/2007
	LCSD		98		19			09/18/2007

Batch XFC7593
Method AK102
Instrument HP 5890 Series II FID SV D F

1074295

Shannon & Wilson, Inc.

400 N. 34th Street, Suite 100
Seattle, WA 98103
(206) 632-8020

1150 Olive Blvd., Suite 276
St. Louis, MO 63141
(314) 872-8170

2355 Hill Road
Fairbanks, AK 99707
(907) 479-0600

5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
(907) 561-2120

Chain of Custody Recor

Page 1 of 1
Laboratory SGS
Attn: KLINT

Analysis Parameters/Sample Container Description (include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	Comp.	Grab	DRO (102)	BTEX (8021)					Total Number of Containers	Remarks/Matrix
1369-090507-001	1 A-E	12:45	9.5.07		X	X	X					5	
1369-090507-002	2 ↓	13:49	↓		X	X	X					5	
1369-090507-003	3	14:10			X	X	X					5	
1369-090507-004	4 ↓	16:05	↓		X	X	X					5	
TRIP BLANK	5 A-C						X					3	

Project Information

Project Number: 31-1-1369-001
Project Name: ELIZ RD UST
Contact: Mark Lockwood
Ongoing Project? Yes ☐ No ☐
Sampler: ANDREA CARLSON

Sample Receipt

Total Number of Containers: 23
COC Seals/Intact? Y/N/NA
Received Good Cond./Cold
Delivery Method:
(attach shipping bill, if any)

Instructions

Requested Turn Around Time: Standard
Special Instructions: Level II

Relinquished By: 1	Relinquished By: 2	Relinquished By: 3
Signature: [signature] Time: Hi:35	Signature: [signature] Time: 1700	Signature: Time:
Printed Name: ANDREA CARLSON Date: 9.5.07	Printed Name: KLINT FRIEDENAUER Date: 9/6/07	Printed Name: Date:
Company: S&W	Company: SGS	Company:

Received By: 1	Received By: 2	Received By: 3
Signature: [signature] Time: 16:35	Signature: Time:	Signature: Time:
Printed Name: KLINT FRIEDENAUER Date: 9/5/07	Printed Name: Date:	Printed Name: Date:
Company: SGS	Company:	Company:

Distribution: White - w/shipment - returned to Shannon & Wilson w/ Laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

F-19-91/UR

cooler 4.0
TB 3.8

1074295

Shannon & Wilson, Inc.

400 N. 34th Street, Suite 100
Seattle, WA 98103
(206) 632-8020

1150 Olive Blvd., Suite 276
St. Louis, MO 63141
(314) 872-8170

2355 Hill Road
Fairbanks, AK 99707
(907) 479-0600

5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
(907) 561-2120

Chain of Custody Recor

Page 1 of 1
Laboratory SGS
Attn: KLINT

Analysis Parameters/Sample Container Description
(include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	Comp.	Grab	DRO (102)	BTEX (8021)					Total Number of Containers	Remarks/Matrix
1369-090507-001	1 A-E	12:45	9.5.07		X	X	X					5	
1369-090507-002	2	13:49	"		X	X	X					5	
1369-090507-003	3	14:10			X	X	X					5	
1369-090507-004	4	16:05	↓		X	X	X					5	
TRIP BLANK	5 A-C						X					3	

Project Information		Sample Receipt	
Project Number:	3-1-1369-001	Total Number of Containers	23
Project Name:	FIZ RD UST	COC Seals/Intact? Y/N/NA	
Contact:	MARK LOCKWOOD	Received Good Cond./Cold	
Ongoing Project?	Yes ☐ No ☐	Delivery Method:	
Sampler:	ANDREA CARLSON	(attach shipping bill, if any)	

Instructions

Requested Turn Around Time: Standard

Special Instructions: Level II

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: Time: 16:35	Signature: Time: 1700	Signature: Time:
Printed Name: ANDREA CARLSON Date: 9.5.07	Printed Name: KLINT FRIEDRICHSEN Date: 9/6/07	Printed Name: Date:
Company: SW	Company: SGS	Company:

Received By: 1.	Received By: 2.	Received By: 3.
Signature: Time: 16:35	Signature: Time:	Signature: Time:
Printed Name: KLINT FRIEDRICHSEN Date: 9/6/07	Printed Name: Date:	Printed Name: Date:
Company: SGS	Company:	Company:

Distribution: White - w/shipment - returned to Shannon & Wilson w/ Laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

Page 14 of 1

F-19-91/UR

COOLER 4.0
TR 3.5

1074295

SGS

SAMPLE RECEIPT FORM

SGS WO#:

Yes	No	NA		
___	X	___	Are samples **RUSH**, priority, or *w/n 72 hrs.* of **hold time**?	**Due Date:** 9/19/07
___	___	X	If yes have you done *e-mail notification*?	**Received Date:** 8/15/07
___	X	___	Are samples *within 24 hrs.* of **hold time** or **due date**?	**Received Time:** 1635
___	___	X	If yes, have you *spoken with* Supervisor?	Is **date/time conversion** necessary? ___
___	___	X	Archiving bottles – if req., are they properly marked?	# of hours to AK Local Time: ___
___	X	___	Are there any **problems**? PM Notified? ___	**Thermometer ID:** Lab Stem 710
X	___	___	Were samples preserved correctly and pH verified?	
___	___	X	If this is for PWS, provide **PWSID.** ___	
___	___	X	Will courier charges apply?	
___	___	X	Method of payment? ___	
X	___	___	Data package required? (Level: 1 / (2) / 3 / 4)	
			Notes: ___	
___	X	___	Is this a DoD project? (USACE, Navy, AFCEE)	

Cooler ID	Temp Blank	Cooler Temp
1	3.8 °C	4.0 °C
	°C	°C
	°C	°C
	°C	°C
	°C	°C

*Temperature readings include thermometer correction factors

Delivery method (circle all that apply): (Client) / Alert Courier / UPS / FedEx / USPS / AA Goldstreak / NAC / ERA / PenAir / Carlile Lynden / SGS / Other: ___

Airbill # ___

Additional Sample Remarks: *(√ if applicable)*

___ Extra Sample Volume?
___ Limited Sample Volume?
X Field preserved for volatiles?
___ Field-filtered for dissolved? ___
___ Lab-filtered for dissolved? ___
___ Ref Lab required? ___
___ Foreign Soil?

This section must be filled out for DoD projects (USACE, Navy, AFCEE)

Yes	No		
___	___	Is received temperature 4 ± 2°C?	
		Exceptions:	Samples/Analyses Affected:
___	___	Rad Screen performed? Result: ___	
___	___	Was there an airbill? *(Note # above in the right hand column)*	
___	___	Was cooler sealed with custody seals?	
		# / where: ___	
___	___	Were seal(s) intact upon arrival?	
___	___	Was there a COC with cooler?	
___	___	Was COC sealed in plastic bag & taped inside lid of cooler?	
___	___	Was the COC filled out properly?	
___	___	Did the COC indicate COE / AFCEE / Navy project?	
___	___	Did the COC and samples correspond?	
___	___	Were all sample packed to prevent breakage?	
		Packing material: ___	
___	___	Were all samples unbroken and clearly labeled?	
___	___	Were all samples sealed in separate plastic bags?	
___	___	Were all VOCs free of headspace and/or MeOH preserved?	
___	___	Were correct container / sample sizes submitted?	
___	___	Is sample condition good?	
___	___	Was copy of CoC, SRF, and custody seals given to PM to fax?	

This section must be filled if problems are found.

Yes No
___ ___ Was client notified of problems?

Individual contacted: ___
Via: Phone / Fax / Email (*circle one*)
Date/Time: ___
Reason for contact: ___

Change Order Required? ___
SGS Contact: ___

Notes: ___

Completed by (sign): K K [signature] **(print):** KRISTI FRIEDENAUER

Login proof (check one): waived ____ required ____ performed by: ___

SGS

1074295

SGS WO:

SAMPLE RECEIPT FORM FOR TRANSFERS
From
FAIRBANKS, ALASKA OR HONOLULU, HAWAII
To

ANCHORAGE, AK

TO BE COMPLETED IN ANCHORAGE UPON ARRIVAL FROM FAIRBANKS OR HAWAII
NOTES RECORDED BELOW ARE ACTIONS NEEDED UPON ARRIVAL IN ANCHORAGE.

Notes: _____

_____

_____

_____

_____

Receipt Date / Time: 9/7/07 1030

Is Sample Date/Time Conversion Necessary? Yes _____ No ✓

Number of Hours From Alaska Local Time: _____

Foreign Soil? Yes _____ No ✓

Delivery method to Anchorage (*circle all that apply*):

Alert Courier / UPS / FedEx / USPS / AA Goldstreak / NAC / ERA / PenAir / Carlile / Lynden / SGS

Other: _____

Airbill # _____

COOLER AND TEMP BLANK READINGS*

Cooler ID	Temp Blank (°C)	Cooler (°C)	Cooler ID	Temp Blank (°C)	Cooler (°C)
1	6.7	3.5			

CUSTODY SEALS INTACT: (YES) / NO

#'/ WHERE: front/back of cooler

COMPLETED BY: _____

*Temperature readings include thermometer correction factors.

SGS

SAMPLE RECEIPT FORM (page 2)

SGS WO#: 1074295

#	Container ID	Matrix	Test	QC	TB	Container Volume: 1 L	500 mL	250 mL	125 mL	60 mL	40 mL	8oz (250 mL)	4oz (125 mL)	Other	Container Type: AG	CG	HDPE	Nalgene	Cubie	Coli	Septa	Other	Preservative: None	HCl	HNO_3	H_2SO_4	MeOH	$Na_2S_2O_3$	NaOH	Other
1-4	A-C	1	Btex								12				X						X			X						
	D-E	1	DRO			X									X									X						
5 KF	A-C	1	Btex								3				X									X						
Bottle Totals						5					15 KF																			

Completed by: [signature] Date: 9/6/07

Page 17 of 18

C:\Documents and Settings\scastleberry.FAIRBANKS\Local Settings\Temporary Internet Files\OLK10C\F004r15_SampleReceiptForm_pg12.doc

SGS Environmental

200 W. Potter Dr.
Anchorage, AK 99518
(907) 562-2343
Fax: (907) 561-5301

Sample ID: [illegible]

Date 9/6 | Time 1730 | Sampler

Analysis: 4295

Special Instructions:

Cool: 4° C

Cooler
TB = 6.7
C = 3.5

1074295

SGS Environmental

200 W. Potter Dr.
Anchorage, AK 99518
(907) 562-2343
Fax: (907) 561-5301

Sample ID: [illegible]

Date 9/6 | Time 1730 | Sampler

Analysis: 4295

Special Instructions:

Cool: 4° C

SGS Environmental

200 W. Potter Dr.
Anchorage, AK 99518
(907) 562-2343
Fax: (907) 561-5301

Sample ID: [illegible]

Date 9/6 | Time 1730 | Sampler

Analysis: 4295

Special Instructions:

Cool: 4° C

SGS Environmental Services
Alaska Division
Level II Laboratory Data Report

Project:	31-1-11369-001 Eliz Rd
Client:	Shannon & Wilson-Fairbanks
SGS Work Order:	1075670

Released by: Stephen C. Ede
Alaska Division Technical Director

Stephen C. Ede
2007.11.29
09:57:14 -09'00'

Contents:

Note:
Unless otherwise noted, all quality assurance/quality control criteria is in compliance with the standards set forth by the proper regulatory authority, the SGS Quality Assurance Program Plan, and the National Environmental Accreditation Conference.

SGS

Case Narrative

Client	SHANFBK	Shannon & Wilson-Fairbanks	**Printed Date/Time**	11/29/2007	9:01
Workorder	1075670	31-1-11369-001 Eliz Rd			

Sample ID	Client Sample ID

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

1075670001 PS 11369-110207-001

AK102 - LCS is outside controls, biased low (36%).
AK102 - The sample was re-extracted and reanalyzed and results were confirmed.

806064 LCS LCS for HBN 194752 [XXX/18897

AK102/103 - 5a-Androstane (surrogate) recovery is outside QC goals (biased low). LCS recovery is outside QC goals (biased low). LCS/LCSD RPD is outside controls.

806065 LCSD LCSD for HBN 194752 [XXX/1889

AK102/103 - LCS/LCSD RPD is outside QC goals.

Laboratory Analysis Report

200 W. Potter Drive
Anchorage, AK 99518-1605
Tel: (907) 562-2343
Fax: (907) 561-5301
Web: http://www.us.sgs.com

Mark Lockwood
Shannon & Wilson-Fairbanks
2355 Hill Rd
Fairbanks, AK 99709

Work Order:	1075670	
	31-1-11369-001 Eliz Rd	**Released by:**
Client:	Shannon & Wilson-Fairbanks	
Report Date:	November 29, 2007	

Enclosed are the analytical results associated with the above workorder.

As required by the state of Alaska and the USEPA, a formal Quality Assurance/Quality Control Program is maintained by SGS. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request.

The laboratory certification numbers are AK971-05 (DW), UST-005 (CS) and AK00971 (Micro) for ADEC and 001828 for NELAP (RCRA methods: 1010/1020, 1311, 6000/7000, 9040/9045, 9056, 9060, 9065, 8015B, 8021B, 8081A/8082, 8260B, 8270C).

Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP, the National Environmental Laboratory Accreditation Program and, when applicable, other regulatory authorities.

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.

The following descriptors may be found on your report which will serve to further qualify the data.

PQL	Practical Quantitation Limit (reporting limit).
U	Indicates the analyte was analyzed for but not detected.
F	Indicates value that is greater than or equal to the MDL.
J	The quantitation is an estimation.
ND	Indicates the analyte is not detected.
B	Indicates the analyte is found in a blank associated with the sample.
*	The analyte has exceeded allowable regulatory or control limits.
GT	Greater Than
D	The analyte concentration is the result of a dilution.
LT	Less Than
!	Surrogate out of control limits.
Q	QC parameter out of acceptance range.
M	A matrix effect was present.
JL	The analyte was positively identified, but the quantitation is a low estimation.
E	The analyte result is above the calibrated range.

Note: Soil samples are reported on a dry weight basis unless otherwise specified.

SGS Ref.#	1075670001	**All Dates/Times are Alaska Standard Time**	
Client Name	Shannon & Wilson-Fairbanks	**Printed Date/Time**	11/29/2007 9:01
Project Name/#	31-1-11369-001 Eliz Rd	**Collected Date/Time**	11/02/2007 8:43
Client Sample ID	11369-110207-001	**Received Date/Time**	11/07/2007 8:40
Matrix	Water (Surface, Eff., Ground)	**Technical Director**	**Stephen C. Ede**

Sample Remarks:

AK102 - LCS is outside controls, biased low (36%).

AK102 - The sample was re-extracted and reanalyzed and results were confirmed.

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Benzene	ND	0.500	ug/L	SW8021B	A		11/08/07	11/08/07	NHN
Toluene	ND	2.00	ug/L	SW8021B	A		11/08/07	11/08/07	NHN
Ethylbenzene	ND	2.00	ug/L	SW8021B	A		11/08/07	11/08/07	NHN
P & M -Xylene	ND	2.00	ug/L	SW8021B	A		11/08/07	11/08/07	NHN
o-Xylene	ND	2.00	ug/L	SW8021B	A		11/08/07	11/08/07	NHN
Surrogates									
1,4-Difluorobenzene <surr>	91.3		%	SW8021B	A	80-120	11/08/07	11/08/07	NHN
Semivolatile Organic Fuels Department									
Diesel Range Organics	ND	0.323	mg/L	AK102	D		11/15/07	11/19/07	BME
Surrogates									
5a Androstane <surr>	61.6		%	AK102	D	50-150	11/15/07	11/19/07	BME

SGS Ref.#	1075670002
Client Name	Shannon & Wilson-Fairbanks
Project Name/#	31-1-11369-001 Eliz Rd
Client Sample ID	Trip Blank
Matrix	Water (Surface, Eff., Ground)

All Dates/Times are Alaska Standard Time

Printed Date/Time	11/29/2007 9:01
Collected Date/Time	11/02/2007 8:43
Received Date/Time	11/07/2007 8:40
Technical Director	**Stephen C. Ede**

Sample Remarks:

Parameter	Results	PQL	Units	Method	Container ID	Allowable Limits	Prep Date	Analysis Date	Init
Volatile Fuels Department									
Benzene	ND	0.500	ug/L	SW8021B	A		11/08/07	11/08/07	NHN
Toluene	ND	2.00	ug/L	SW8021B	A		11/08/07	11/08/07	NHN
Ethylbenzene	ND	2.00	ug/L	SW8021B	A		11/08/07	11/08/07	NHN
P & M -Xylene	ND	2.00	ug/L	SW8021B	A		11/08/07	11/08/07	NHN
o-Xylene	ND	2.00	ug/L	SW8021B	A		11/08/07	11/08/07	NHN
Surrogates									
1,4-Difluorobenzene <surr>	91.1		%	SW8021B	A	80-120	11/08/07	11/08/07	NHN

SGS Ref.#	804716 Method Blank	**Printed Date/Time**		11/29/2007 9:01
Client Name	Shannon & Wilson-Fairbanks	**Prep**	**Batch**	VXX17686
Project Name/#	31-1-11369-001 Eliz Rd		**Method**	SW5030B
Matrix	Water (Surface, Eff., Ground)		**Date**	11/08/2007

QC results affect the following production samples:

1075670001, 1075670002

Parameter	Results	Reporting/Control Limit	MDL	Units	Analysis Date
Volatile Fuels Department					
Benzene	ND	0.500	0.150	ug/L	11/08/07
Toluene	ND	2.00	0.620	ug/L	11/08/07
Ethylbenzene	ND	2.00	0.620	ug/L	11/08/07
P & M -Xylene	ND	2.00	0.620	ug/L	11/08/07
o-Xylene	ND	2.00	0.620	ug/L	11/08/07
Surrogates					
1,4-Difluorobenzene <surr>	91.8	80-120		%	11/08/07

Batch VFC8755
Method SW8021B
Instrument HP 5890 Series II PID+FID VCA

SGS Ref.#	806063 Method Blank	**Printed Date/Time**		11/29/2007 9:01
Client Name	Shannon & Wilson-Fairbanks	**Prep**	**Batch**	XXX18897
Project Name/#	31-1-11369-001 Eliz Rd		**Method**	SW3520C
Matrix	Water (Surface, Eff., Ground)		**Date**	11/15/2007

QC results affect the following production samples:

1075670001

Parameter	Results	Reporting/Control Limit	MDL	Units	Analysis Date
Semivolatile Organic Fuels Department					
Diesel Range Organics	ND	0.300	0.0600	mg/L	11/19/07
Surrogates					
5a Androstane <surr>	68.8	60-120		%	11/19/07
Batch XFC7755					
Method AK102					
Instrument HP 5890 Series II FID SV D F					

SGS Ref.#	804717	Lab Control Sample	**Printed Date/Time**	11/29/2007	9:01
	804718	Lab Control Sample Duplicate	**Prep Batch**	VXX17686	
Client Name	Shannon & Wilson-Fairbanks		**Method**	SW5030B	
Project Name/#	31-1-11369-001 Eliz Rd		**Date**	11/08/2007	
Matrix	Water (Surface, Eff., Ground)				

QC results affect the following production samples:

1075670001, 1075670002

Parameter		QC Results	Pct Recov	LCS/LCSD Limits	RPD	RPD Limits	Spiked Amount	Analysis Date
Volatile Fuels Department								
Benzene	LCS	104	104	(80-120)			100 ug/L	11/08/2007
	LCSD	106	106		2	(< 20)	100 ug/L	11/08/2007
Toluene	LCS	103	103	(80-120)			100 ug/L	11/08/2007
	LCSD	105	105		3	(< 20)	100 ug/L	11/08/2007
Ethylbenzene	LCS	105	105	(87-125)			100 ug/L	11/08/2007
	LCSD	107	107		2	(< 20)	100 ug/L	11/08/2007
P & M -Xylene	LCS	205	103	(87-125)			200 ug/L	11/08/2007
	LCSD	209	105		2	(< 20)	200 ug/L	11/08/2007
o-Xylene	LCS	102	102	(85-120)			100 ug/L	11/08/2007
	LCSD	104	104		2	(< 20)	100 ug/L	11/08/2007
Surrogates								
1,4-Difluorobenzene <surr>	LCS		100	(80-120)				11/08/2007
	LCSD		97		3			11/08/2007

Batch	VFC8755
Method	SW8021B
Instrument	HP 5890 Series II PID+FID VCA

SGS Ref.#	806064	Lab Control Sample	**Printed Date/Time**	11/29/2007	9:01
	806065	Lab Control Sample Duplicate	**Prep Batch**	XXX18897	
Client Name	Shannon & Wilson-Fairbanks		**Method**	SW3520C	
Project Name/#	31-1-11369-001 Eliz Rd		**Date**	11/15/2007	
Matrix	Water (Surface, Eff., Ground)				

QC results affect the following production samples:

1075670001

Parameter		QC Results	Pct Recov		LCS/LCSD Limits	RPD		RPD Limits	Spiked Amount	Analysis Date
Semivolatile Organic Fuels Department										
Diesel Range Organics	LCS	0.357	36	*	(75-125)				1 mg/L	11/19/2007
	LCSD	0.773	77			74	*	(< 20)	1 mg/L	11/19/2007
Surrogates										
5a Androstane <surr>	LCS		47	*	(60-120)					11/19/2007
	LCSD		74			45				11/19/2007

Batch	XFC7755
Method	AK102
Instrument	HP 5890 Series II FID SV D F

1075670

Shannon & Wilson, Inc.

400 N. 34th Street, Suite 100
Seattle, WA 98103
(206) 632-8020

1150 Olive Blvd., Suite 276
St. Louis, MO 63141
(314) 872-8170

2355 Hill Road
Fairbanks, AK 99707
(907) 479-0600

5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
(907) 561-2120

Chain of Custody Record

Page 1 of 1
Laboratory SGS
Attn:

Analysis Parameter (Include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	Comp.	Grab	BTEX (4C) (SW8021B)	DRO (HCl) (AK102)					Total Number of Containers	Remarks/Matrix
11369-110207-001	1A-E	8:43	11/2/07		X	X	X					5	water
Trip blanks	2A-C	-	-			X						3	water

Project Information		Sample Receipt	
Project Number:	51-1-11369-001	Total Number of Containers	8
Project Name:	Eliz. Rd	COC Seals/Intact? Y/N/NA	
Contact:	Mark Lockwood	Received Good Cond./Cold	
Ongoing Project?	Yes ☒ No ☐	Delivery Method:	
Sampler:	KRW	Hand (attach shipping bill, if any)	

Instructions

Requested Turn Around Time:

Special Instructions:

Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature: Time: 10:20	Signature: Time: 1645	Signature: Time:
Printed Name: Kristen R Williams Date: 11/5/07	Printed Name: Klint Friedman Date: 11/6/07	Printed Name: Date:
Company: S&W	Company: SGS	Company:

Received By: 1.	Received By: 2.	Received By: 3.
Signature: Time: 10:20	Signature: Time:	Signature: Time: 0840
Printed Name: Klint Friedman Date: 11/6/07	Printed Name: Date:	Printed Name: James Doughty Date: 11-7-07
Company: SGS	Company:	Company: SGS ANCH

Distribution: White - w/shipment - returned to Shannon & Wilson w/ Laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

F-19-91/UR

COOLER 4.6 TB 2.2

SGS

1075670

SAMPLE RECEIPT FORM

SGS WO#:

Yes	No	NA		
	X		Are samples **RUSH**, priority, or *w/n 72 hrs.* of **hold time**?	**Due Date:** 11/19/07
		X	If yes have you done *e-mail notification*?	**Received Date:** 11/5
	X		Are samples *within 24 hrs.* of **hold time** or **due date**?	**Received Time:** 1030
		X	If yes, have you *spoken with* Supervisor?	Is **date/time conversion** necessary? —
	X		Archiving bottles – if req., are they properly marked?	# of hours to AK Local Time: —
	X		Are there any **problems**? PM Notified?	**Thermometer ID:** 7/D
X			Were samples preserved correctly and pH verified?	

Cooler ID	Temp Blank	Cooler Temp
1	3.2 °C	4.6 °C
	°C	°C
	°C	°C
	°C	°C
	°C	°C

*Temperature readings include thermometer correction factors

		X	If this is for PWS, provide **PWSID.**
		X	Will courier charges apply?
		X	Method of payment?
X			Data package required? (Level: 1 / (2) / 3 / 4)
			Notes:
	X		Is this a DoD project? (USACE, Navy, AFCEE)

Delivery method (circle all that apply): ~~Client~~ / Alert Courier / UPS / FedEx / USPS / AA Goldstreak / NAC / ERA / PenAir / Carlile Lynden / SGS / Other:

Airbill #

Additional Sample Remarks: *(√ if applicable)*

- Extra Sample Volume?
- Limited Sample Volume?
- Field preserved for volatiles?
- Field-filtered for dissolved?
- Lab-filtered for dissolved?
- Ref Lab required?
- Foreign Soil?

This section must be filled out for DoD projects (USACE, Navy, AFCEE)

Yes	No	
		Is received temperature 4 ± 2°C?
		Exceptions: Samples/Analyses Affected:
		Rad Screen performed? Result:
		Was there an airbill? *(Note # above in the right hand column)*
		Was cooler sealed with custody seals?
		# / where:
		Were seal(s) intact upon arrival?
		Was there a COC with cooler?
		Was COC sealed in plastic bag & taped inside lid of cooler?
		Was the COC filled out properly?
		Did the COC indicate COE / AFCEE / Navy project?
		Did the COC and samples correspond?
		Were all sample packed to prevent breakage?
		Packing material:
		Were all samples unbroken and clearly labeled?
		Were all samples sealed in separate plastic bags?
		Were all VOCs free of headspace and/or MeOH preserved?
		Were correct container / sample sizes submitted?
		Is sample condition good?
		Was copy of CoC, SRF, and custody seals given to PM to fax?

This section must be filled if problems are found.

Yes	No	
		Was client notified of problems?

Individual contacted:

Via: Phone / Fax / Email (*circle one*)

Date/Time:

Reason for contact:

Change Order Required?

SGS Contact:

Notes:

Completed by (sign): **(print):**

Login proof (check one): waived ____ required ✓ performed by:

SGS

SGS WO#: 1075670

SAMPLE RECEIPT FORM FOR TRANSFERS
From
FAIRBANKS, ALASKA OR HONOLULU, HAWAII
To

ANCHORAGE, AK

TO BE COMPLETED IN ANCHORAGE UPON ARRIVAL FROM FAIRBANKS OR HAWAII. NOTES RECORDED BELOW ARE ACTIONS NEEDED UPON ARRIVAL IN ANCHORAGE.

Notes: _____

_____

_____

_____

_____

Receipt Date / Time: 0 11-7-07 0840

Is Sample Date/Time Conversion Necessary? Yes _____ No ✓

Number of Hours From Alaska Local Time: —

Foreign Soil? Yes _____ No ✓

Delivery method to Anchorage (*circle all that apply*):

Alert Courier / UPS / FedEx / USPS / AA Goldstreak / NAC / ERA / PenAir / Carlile / Lynden / SGS

Other: _____

Airbill # _____

COOLER AND TEMP BLANK READINGS*

Cooler ID	Temp Blank (°C)	Cooler (°C)	Cooler ID	Temp Blank (°C)	Cooler (°C)
1	2.1	2.9			

CUSTODY SEALS INTACT: YES / NO

#/ WHERE: FRONT & BACK TOP LID

COMPLETED BY: Jon Payne

**Temperature readings include thermometer correction factors.*

SGS

SAMPLE RECEIPT FORM (page 2)

SGS WO# 1075670

#	Container ID	Matrix	Test	QC	TB	Container Volume: 1 L	500 mL	250 mL	125 mL	60 mL	40 mL	8oz (250 mL)	4oz (125 mL)	Other	Container Type: AG	CG	HDPE	Nalgene	Cubie	Coli	Septa	Other	Preservative: None	HCl	HNO_3	H_2SO_4	MeOH	$Na_2S_2O_3$	NaOH	Other
1	A-C	1	Btex								3				X						X			X						
	D-E		DRO			2									X									X						
2	A-C	1	Btex		V						3				X						X			X						

Bottle Totals	2					6			

Completed by: [signature] Date: 11/5/07

SGS Environmental

CUSTODY SEAL WO 5671 5673 5670 5672

Signature: _____ Date/Time: 11/6/07 1645

SGS Environmental

CUSTODY SEAL WO 5671 5673 5670 5672

Date/Time: 11/6/07 1645

1075670

69d TB = 2.1
C = 2.9

SGS Laboratory Report Number: 1073501, 1074295, 1075670

LABORATORY DATA REVIEW CHECKLIST

(**NOTE**: **NA** = not applicable)

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses? **Yes / No**

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**

2. Chain of Custody (COC)

a. COC information completed, signed, and dated (including released/received by)? **Yes / No**

b. Were the correct analyses requested? **Yes / No**

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (4° ± 2° C)? **Yes / No The cooler associated with the water samples (1074295) was received at the Anchorage SGS laboratory at a temperature of 6.7**°C.

b. Sample preservation acceptable - acidified waters, MeOH-preserved VOC soil (GRO, BTEX, VOCs, etc.)? **Yes / No**

c. Sample condition documented - broken, leaking (soil MeOH), zero headspace (VOC vials)? **NA / Yes / No**

d. If there were any discrepancies, were they documented (e.g., incorrect sample containers/preservation, sample temperatures outside range, insufficient sample size, missing samples)? **NA / Yes / No**

e. Data quality or usability affected? **Yes (explain) / No**

4. Case Narrative

a. Present and understandable? **Yes / No (explain)**

b. Discrepancies, errors or QC failures noted by the lab? **NA / Yes / No (explain)**

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c. Were all corrective actions documented? **NA / Yes / No (explain) – Note: No corrective action was required.**

d. Is there an effect on data quality/usability, according to the case narrative? **No / Yes (explain)**

5. Sample Results

a. Correct analyses performed/reported as requested on COC? **Yes / No (explain)**

b. All applicable holding times met? **Yes / No**

c. All soils reported on a dry-weight basis? **NA / Yes / No**

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project? **Yes / No** (explain only for non-detects with elevated PQLs)

e. Data quality or usability affected? **No / Yes (explain)**

6. QC Samples

a. Method Blank

i. Is at least one method blank (MB) reported per matrix, analysis, and 20 samples? **Yes / No**
ii. Are all method blank results less than PQL? **Yes / No**
iii. If MB above PQL, what samples are affected?

iv. Do the affected sample(s) have data flags? **Yes / No / NA**

If so, are the data flags clearly defined? **Yes / No / NA**

v. Are data quality or usability affected? **No** (i.e., MB data are acceptable) / **Yes** (Explain)
See Text

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

i. Organics - Is at least one LCS/LCSD reported per matrix, analysis, and 20 samples?
NA / Yes / No

ii. Metals/Inorganics - Is at least one LCS and one sample duplicate reported per matrix, analysis and 20 samples? **NA / Yes / No**

iii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits or project-specified DQOs? [*AK petroleum methods %R < 20%; other analyses, refer to lab QC pages*] **Yes / No** (explain) **The LCS for 11369-110207-001 was lower than laboratory limits.**

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iv. Precision – Are all relative percent differences (RPDs) reported and less than method or laboratory limits, or project-specified DQOs? **Yes / No** (explain) **The LCSD was within limits for 11369-110207-001, but the LCS was lower than limits. Therefore the RPD value was larger than limits.**

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

vi. Do the affected samples(s) have data flags? **NA /Yes / No (explain)**

If so, are the data flags clearly defined?

vii. Is the data quality or usability affected? **NA** or **explain**.

c. Surrogates - Organics Only

i. Are surrogate recoveries reported for organic analyses, including field, QC and laboratory samples? **Yes / No**

ii. Accuracy – Are all percent recoveries (%R) reported and within method or laboratory limits or project-specified DQOs? **Yes / No**

iii. Do the sample results with failed surrogate recoveries have data flags? **NA /Yes / No (explain)**

If so, are the data flags clearly defined? **Yes / No / NA**

iv. Is the data quality or usability affected? **No** or **explain**

d. Trip Blank - Volatile analyses only (GRO, BTEX, VOCs, etc.)

i. Is at least one trip blank (TB) reported per matrix, analysis and cooler? **NA / Yes / No**

ii. Are all results less than the PQL? **NA / Yes / No**

iii. If TB is above the PQL, what samples are affected? **NA** or **list samples**

iv. Is the data quality or usability affected? **No** or **explain**.

e. Field Duplicate

i. Was at least one field duplicate submitted per matrix, analysis and 10 project samples?
Yes / No There were no field duplicates taken for water samples, although there was a field duplicate taken for soil samples.

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ii. Was the field duplicate submitted blind to the lab? **Yes / No**

iii. Precision – Are all relative percent differences (RPDs) less than specified DQOs (recommended: 30% for water, 50% for soil) ? **Yes / No**

iv. Is the data quality or usability affected? **No / Yes** (explain)

f. Decontamination or Equipment Blank (if applicable)

Not Applicable or…

i. Are all results less than the PQL? **Yes / No**

ii. If results are above PQL, what samples are affected? **NA** or **list**

iii. Is the data quality or usability affected? Explain.

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

Not applicable or …

a. Are they defined and appropriate? **Yes / No**

Completed by: Kristen Williams
Title: Environmental Chemist **Date:** January 17, 2008

CS Report Name: ELIZ ROAD HOME HEATING OIL UNDERGROUND STORAGE TANK CORRECTIVE ACTION AND ASSESSMENT

Laboratory Report Date: July 31, 2007 (1073501), September 20, 2007 (1074295), November 29, 2007 (1075670)

Consultant Firm: Shannon & Wilson, Inc.

Laboratory Name: SGS Environmental Services, Inc.
SGS Laboratory Report Number: 1073501, 1074295, 1075670