Milepost 205 Richardson Highway Spill
Groundwater Monitoring Well Report
Summit Lake, Alaska

September 2010

ALASKA RESOURCES & ENVIRONMENTAL SERVICES, LLC

SUBMITTED TO:
Alaska Department of Environmental Conservation
Northern Regional Office
Spill Prevention and Response
610 University Avenue
Fairbanks, Alaska 99709-3643

BY:
ALASKA RESOURCES & ENVIRONMENTAL SERVICES, LLC
284 TOPSIDE
P.O. BOX 83050
FAIRBANKS, ALASKA 99708
(907) 374-3226 FAX (907) 374-3219

INTRODUCTION

This report was prepared on behalf of Big State Logistics Inc., who has contracted with Alaska Resources & Environmental Services (ARES) to perform the groundwater investigation associated with the petroleum release of diesel fuel as detailed in the ARES Release Investigation / Phase II ESA dated April 2010. The release occurred at milepost 205 of the Richardson highway. The ADEC file ID number for this site is 140.38.052. The work described in this report was conducted as described in the ADEC approved Work Plan submitted in March 2009.

The objective of our work was to obtain groundwater sample data near the site of a former petroleum release in order to access the impacts to groundwater and to evaluate the extent of groundwater migration. Groundwater samples were collected from monitoring wells MW-1 through MW-6 that were installed in March 2009. All groundwater samples were collected from monitoring wells in general accordance with ADEC Oil and Other Hazardous Substances Pollution Control Regulations (18 AAC 75 – amended October 09, 2008).

SITE BACKGROUND

Site Description

The petroleum release occurred on State of Alaska owned property located at Mile 205 Richardson Highway within the State of Alaska Department of Transportation (D.O..T.) right-of-way (ROW) corridor (Figure 1,2). The D.O.T. manages the ROW which is 150' from road centerline. Lands outside of the D.O.T. corridor are owned and managed by Department of Interior Bureau of Land Management (BLM).

Lands in the vicinity of the spill are undeveloped. The GPS coordinates for the spill site is N 63º 15.447', W -145 º 41.118'. The elevation of the site is approximately 2800' above mean sea level according to topographical map of the area.

History

On December 30, 2008 a tanker truck owned and operated by Big State Logistics Inc., (BSL) was involved in an accident at milepost 205 on the Richardson highway (Appendix A, Figure 1). A fuel trailer separated from the tanker truck, overturned and came to rest in a ditch on the east side of the highway. No injuries were reported. The trailer released all of the approximately 4,000-gallons of #2 Diesel fuel it contained onto the ground surface.

Initial cleanup attempts took place January 19, 2009. A total of 140 cubic yards of contaminated soil/ snow was transported to OIT, Moose Creek facility for thermal remediation.

In March 2009 ARES conducted a groundwater investigation that included the installation of six permanent groundwater monitoring wells. Monitoring well locations can be found in Appendix A, Figure 2.

Topography

The United States Geological Survey (USGS) Mt. Hayes quad (B-4) provides topographic map coverage of the site (Figure 1). The subject property is located in the foothills of the Alaska Range within the Tanana-Kuskokwim Lowland physiographic province. Summit Lake occupies the broad valley to the south, a basin scooped out by glaciers and damned by alluvial debris deposited by Falls Creek at the basin's north end. Based upon the topographic map of the Mt Hayes Quadrangle, the site elevation is approximately 2800 feet above the mean sea level.

Regional Hydrology

The Delta River is the dominant influence on ground-water flow in the subject area. Two discharge peaks characterize the Delta River: spring snowmelt runoff and summer glacial melt (mid-late July). The stage of nearby water bodies such as Phelan Creek typically rises and falls in response to stage changes of the Delta River. The depth to groundwater varies in response to these controlling factors. Based on interpretation of USGS data, regional groundwater flow direction is generally to the north-northwest. However, the direction of flow may vary depending upon the stage of the Delta River. The seasonal high groundwater table for the surrounding area is unknown at this time.

The subject property is situated approximately 200 feet east of Phelan Creek a tributary to the Delta River and approximately 4 miles north of Summit Lake.

Site Hydrology

Groundwater was encountered at approximately 4 - 4.5 feet bgs in all boreholes during the subsurface investigation at Milepost 205 Richardson Highway. The regional water table was considered normal for the time of year. Based on groundwater data from nearby monitoring wells, the groundwater direction flows to the 5.5 degrees east of north with a fairly steep hydraulic gradient (< 0.0088 vertical ft/horizontal ft).

GROUNDWATER SAMPLING

Scope of Work

To achieve the stated objectives, ARES performed the following tasks:

- Collected groundwater samples from monitoring wells MW-1 through MW-6. A duplicate sample from MW-5 was collected for QA/QC purposes. Samples were analyzed for diesel range organics (DRO) by method AK 102 and benzene, toluene, ethylbenzene and xylenes (BTEX) constituents by method EPA 8260B; and

- Data review and report preparation.

Sampling Method

The monitoring well was developed, purged and sampled in accordance with the UST Procedures Manual and standard procedures. A disposable polyethylene bailer and new nitrile gloves were used during the sampling event. Before sampling, the groundwater elevation was measured to 0.010 feet using a Heron Model D-T Interface Meter. Well volume was then calculated, and at least three times the well volume was purged prior to sampling. Recharge rates were observed during purging, and water levels measurements taken following sampling. Water parameters were recorded to include temperature, pH, conductivity, turbidity, dissolved oxygen, and salinity using a Horiba Water Meter Model U-10.

Once well was sufficiently recharged and groundwater parameters stabilized, samples were collected in order of decreasing volatility. The bailers were carefully lowered in to the well to avoid loss of volatiles and water collected from the bailers was placed directly into lab supplied sample bottles. Volatile samples were collected to avoid any headspace in the bottle. All bottles were labeled and placed in a pre-chilled cooler (at approximately 4°C) and submitted to ADEC approved laboratory following chain of custody (COC) procedures.

Purge water was placed in drums and stored at an off-site location pending laboratory results. Groundwater samples were collected from MW-1 through MW-6 on September 25, 2010. A blind duplicate sample was collected from monitoring well MW-5 for quality assurance/quality control purposes.

Field Observations

There was a diesel odor and visible sheen observed in groundwater collected from monitoring wells MW-1 and MW-2 during sampling activities. Purge water was almost clear in appearance. Groundwater was approximately 4’ below ground surface at the time of sampling.

Analytical Results

The monitoring wells were sampled and analyzed for DRO by method AK102 and BTEX by method EPA 8260B. A summary of groundwater analytical results are shown in Table 1. The summary table also includes historical analytical results for comparative purposes with the current sampling event. Complete laboratory results are included in Appendix B. Analytical results indicate that MW-1, MW-2 and MW-4 remain above ADEC target cleanup levels for DRO.

Table 1
Groundwater Analytical Results Summary
(Results shown as mg/L)

Sample Location	Sample ID	Date Sampled	EPA Method 8260B				Alaska Method AK 102
			Benzene in mg/L	Toluene in mg/L	Ethyl-benzene in mg/L	Total xylenes in mg/L	DRO in mg/L
MW-1	MW1-0309	03/24/09	ND	0.598	0.204	1.190	**5.23**
	MW1-0909	10/04/09	**0.0461**	.0284	0.120	0.843	**46.7**
	MW1-0910	09/25/10	0.00142	0.0439	0.0551	0.266	**126**
MW-2	MW2-0309	03/24/09	0.00120	0.0166	0.00540	.0475	0.471
	DUP-W-0309	03/24/09	.00137	.0181	.00601	.0505	ND
	MW2-0909	10/04/09	ND	.0266	.0528	.388	**1210**
	MWDUP-0909	10/04/09	ND	.0228	.0503	.373	**555**
	MW2-0910	09/25/10	ND	ND	0.00223	0.0218	**27.1**
MW-3	MW3-0309	03/24/09	ND	ND	ND	ND	ND
	MW3-0909	10/04/09	ND	ND	ND	ND	0.725
	MW3-0910	09/25/10	ND	ND	ND	ND	ND
MW-4	MW4-0309	03/24/09	0.000610	0.00616	0.00231	0.0102	ND
	MW4-0909	10/04/09	ND	0.00563	0.0283	.224	**108**
	MW4-0910	09/25/10	ND	ND	ND	0.00759	**14.1**
MW-5	MW5-0309	03/24/09	ND	ND	ND	ND	ND
	MW5-0909	10/04/09	ND	ND	ND	ND	ND
	MW5-0910	09/25/10	ND	ND	ND	ND	ND
	DUP	09/25/10	ND	ND	ND	ND	ND
MW-6	MW6-0309	03/24/09	ND	ND	ND	ND	ND
	MW6-0909	10/04/09	ND	ND	ND	ND	ND
	MW6-0910	09/25/10	ND	ND	ND	ND	ND
ADEC Cleanup Level [1]			0.005	1.0	0.7	10.0	1.5

Results above ADEC cleanup levels are **highlighted and bold**.
[1] Title 18 of the Alaska Administrative Code, Chapter 75. Section 345. Table C.
ND= Not detected at the MRL (Method Reporting Limit).
N/A = Not Analyzed.
Results above ADEC Regulatory Limit in Bold.

Quality Assurance / Quality Control

Field quality control (QC) procedures for this project included the collection and analysis of a field duplicate and trip blank, which accompanied the samples in the field. One field duplicate (DUP) was collected for quality control purposes. Sample ID DUP was a blind duplicate to MW5-0910. The QC sample was analyzed to assess the quality of sample collection and handling, as well as the accuracy and precision of the laboratory's analytical procedures.

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

A complete set of quality control parameters were reviewed as listed below.

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

Laboratory Report Number: ATI0088

All quality control parameters were reviewed and met quality control standards for this analytical sampling event.

Precision, expressed as the relative percent difference (RPD) between field duplicate sample results, is an indication of the consistency of sampling, sample handling, preservation, and laboratory analysis. As required by the 18AAC 78 and the UST Procedures Manual, field quality control sampling consisted of 10% field duplicates and 5% trip blanks. RPD calculations were not possible for any compounds due to non-detect values for both samples for all analyzed compounds. Analysis of the trip blanks showed no analytes above the practical quantitation limit (PQL). Thus, there is no indication that cross-contamination among samples occurred.

RPD calculations provide a comparison of two theoretically identical samples that are submitted blind to the laboratory in order to provide an un-biased measure of precision. Due to the nature of the RPD calculation, sample data for both samples must be reported in order for the RPD calculation to provide meaningful data.

Laboratory quality assurance included the procedures outlined in the laboratory's ADEC-approved standard operating procedures documentation. As presented in the laboratory report's QC summary sheet, the laboratory QC parameters fell within the acceptable limits.

Conclusions and Recommendations

Hydraulically down gradient monitoring wells MW-2 through MW-6 appear to have decreased contaminant levels compared to previous sampling events. Monitoring well MW-1 is slightly cross-gradient and adjacent to the spill site and shows increased contaminant levels in contrast to previous sampling events. Monitoring wells MW-1, MW-2, and MW-4 remain above groundwater cleanup levels for DRO.

Additional sampling events will be required to determine if the contaminant plume is expanding, decreasing, or has stabilized.

ARES recommends the following:

- Bi-annual sampling of wells MW-1 through MW-6 should continue during periods of high and low seasonal groundwater conditions (Spring and late fall respectively) for DRO and BTEX analysis. Groundwater results will be used for trend analysis to determine if the plume has stabilized or is in a decreasing or increasing trend.

Limitations

This report presents the analytical results from a limited number of groundwater samples, and should not be construed as a comprehensive study of groundwater quality at the site. The samples were intended to evaluate the presence or absence of contaminants at the locations selected. Detectable levels of petroleum hydrocarbons may be present at other locations. It was also not the intent of our sampling and testing to detect the presence of groundwater affected by contaminants other than those for which laboratory analysis were preformed. No conclusions can be drawn on the presence or absence of other contaminants. This is not a geotechnical study.

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

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

Qualifications & Signature of Environmental Professional

Lyle Gresehover is an ADEC 'Qualified Person' and has extensive field experience as an environmental project manager and has worked on all aspects of environmental assessments, investigations, and clean-up efforts.

Lyle Gresehover
Project Manager

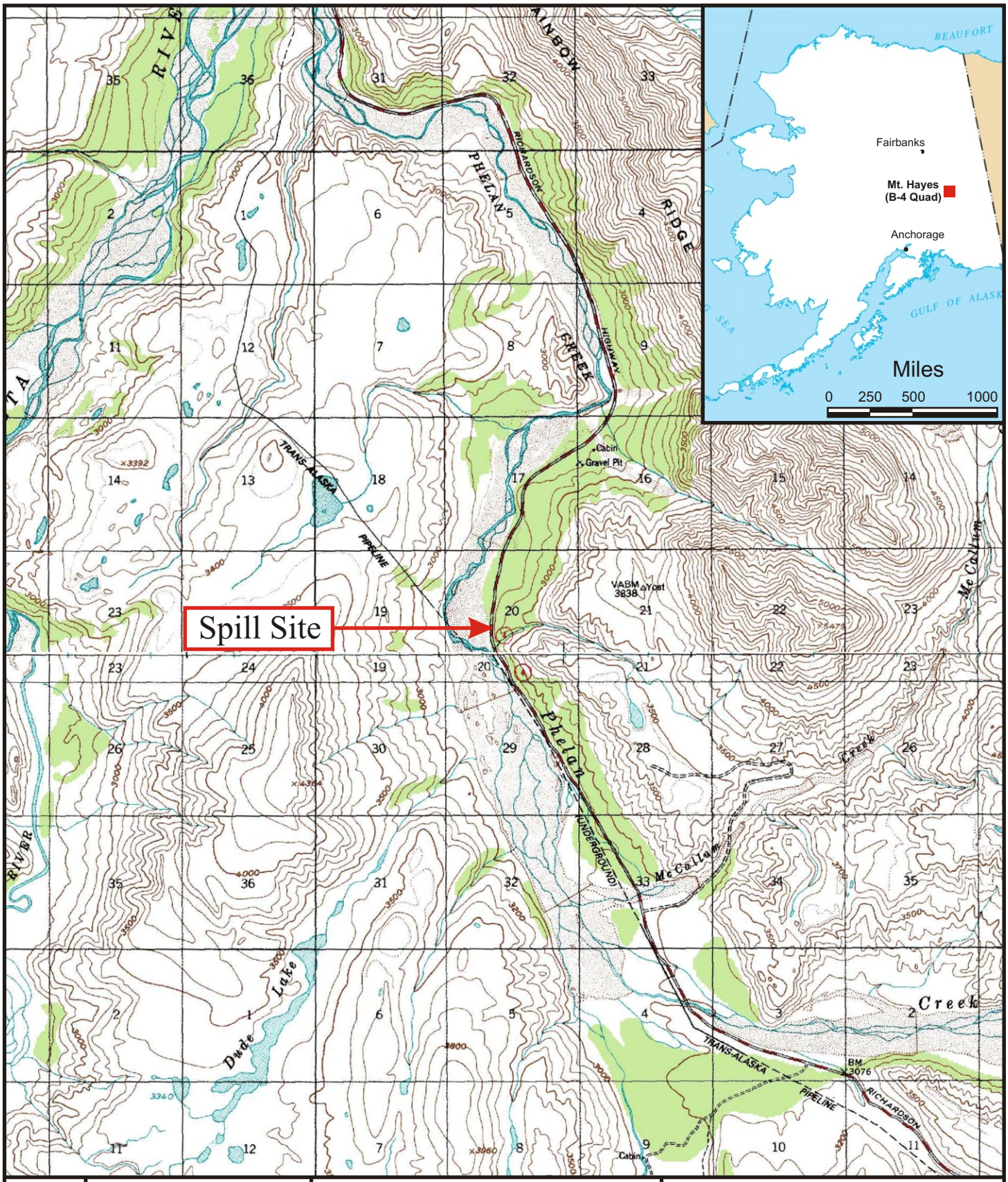
Sincerely,

Lyle Gresehover
Alaska Resources and Environmental Services, LLC

Enclosure: Appendix A – Figure 1 (Area map), Figure 2 (Well location map).
Appendix B – Test America laboratory results and ADEC QA/QC analytical lab checklist.

Appendix A

Figures



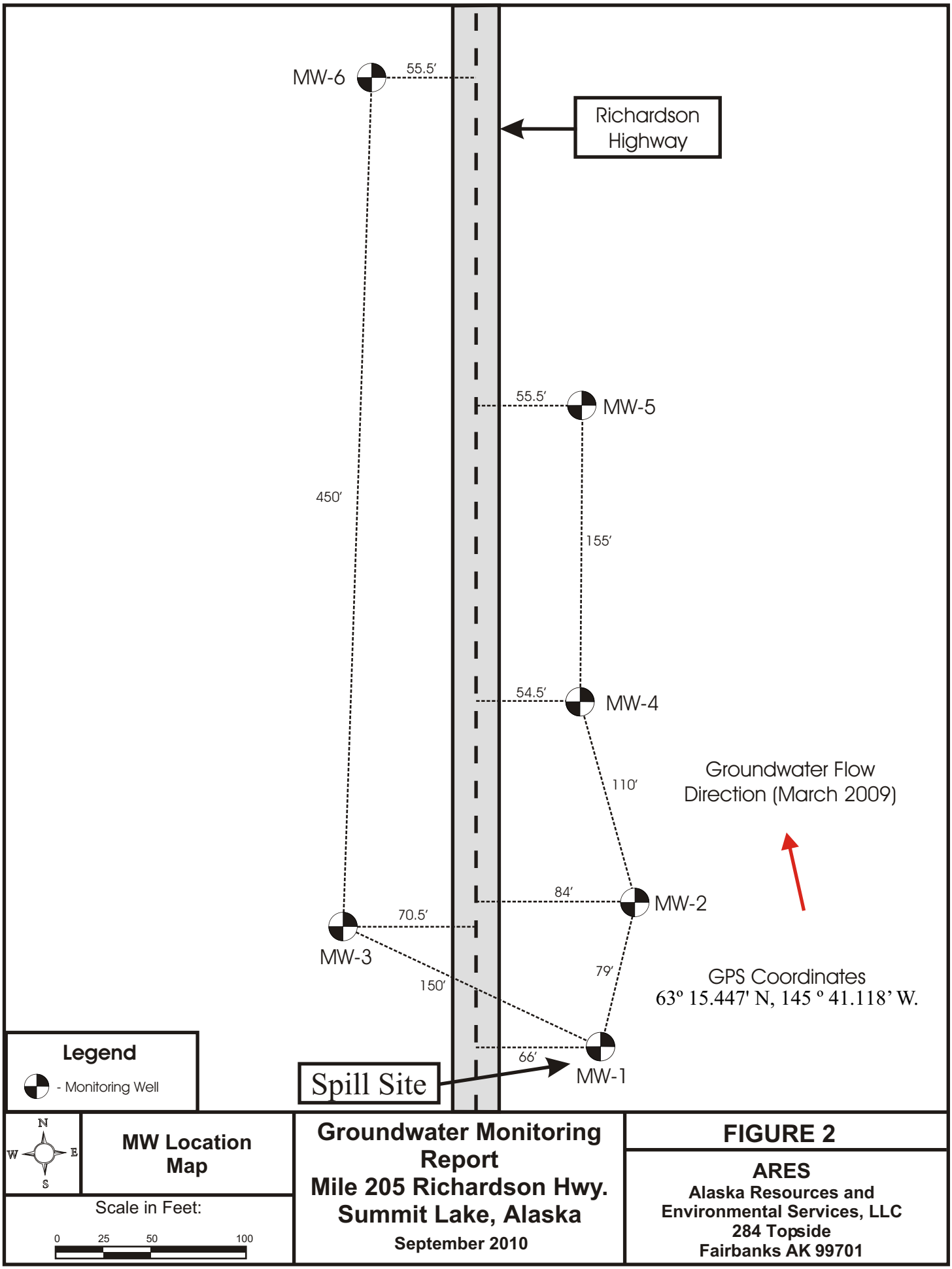
1954 Topo Map
Mt. Hayes, Alaska
Quad B-4

Groundwater Monitoring Report
Mile 205 Richardson Hwy.
Summit Lake, Alaska

September 2010

FIGURE 1

ARES
Alaska Resources and Environmental Services, LLC
284 Topside
Fairbanks AK 99701


MW-6
55.5′
Richardson Highway
55.5′
MW-5
450′
155′
54.5′
MW-4
110′
Groundwater Flow Direction (March 2009)
84′
MW-2
70.5′
MW-3
150′
79′
GPS Coordinates
63º 15.447' N, 145 º 41.118' W.
66′
MW-1
Spill Site
Legend
- Monitoring Well
N
W
E
S
MW Location Map
Scale in Feet:
0
25
50
100
Groundwater Monitoring Report
Mile 205 Richardson Hwy.
Summit Lake, Alaska
September 2010
FIGURE 2
ARES
Alaska Resources and Environmental Services, LLC
284 Topside
Fairbanks AK 99701

Appendix B

Analytical Results

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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

TestAmerica Job ID: ATI0088
TestAmerica Sample Delivery Group: ATI0088
Client Project/Site: [none]
Client Project Description: BSL Mile 205 Richardson

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

Attn: Lyle Gresehover

Johanna Dreher

Authorized for release by:
10/20/2010 7:18 PM

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

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

Table of Contents

Qualifier Definition/Glossary

Client: Alaska Resources & Environmental Services
Project/Site: [none]

TestAmerica Job ID: ATI0088
SDG: ATI0088

Qualifiers

Fuels

Qualifier	Qualifier Description
Q11	Detected hydrocarbons in the diesel range do not have a distinct diesel pattern and may be due to heavily weathered diesel.
Q2	Typical pattern for diesel
R2	The RPD exceeded the acceptance limit.
RL7	Sample required dilution due to high concentrations of target analyte.

Glossary

Glossary	Glossary Description
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis.

Client: Alaska Resources & Environmental Services
Project/Site: [none]

TestAmerica Job ID: ATI0088
SDG: ATI0088

Notes

Report revised on 20 October 2010:

Project name was changed at the request of the client.

Project: Double -D Leasing changed to Project: BSL Mile 205 Richardson

Detection Summary

Client: Alaska Resources & Environmental Services
Project/Site: [none]

TestAmerica Job ID: ATI0088
SDG: ATI0088

Client Sample ID: MW1-0910 — Lab Sample ID: ATI0088-01

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.42		0.500		ug/l	1		EPA 8260B	total
Ethylbenzene	55.1		1.00		ug/l	1		EPA 8260B	total
Toluene	43.9		1.00		ug/l	1		EPA 8260B	total
Xylenes (total)	266		3.00		ug/l	1		EPA 8260B	total
Diesel Range Organics	126	RL7, Q11	3.91		mg/l	10		AK 102	total

Client Sample ID: MW2-0910 — Lab Sample ID: ATI0088-02

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	2.23		1.00		ug/l	1		EPA 8260B	total
Xylenes (total)	21.8		3.00		ug/l	1		EPA 8260B	total
Diesel Range Organics	27.1	Q2	0.391		mg/l	1		AK 102	total

Client Sample ID: MW3-0910 — Lab Sample ID: ATI0088-03

No Detections.

Client Sample ID: MW4-0910 — Lab Sample ID: ATI0088-04

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Xylenes (total)	7.59		3.00		ug/l	1		EPA 8260B	total
Diesel Range Organics	14.1	Q2	0.391		mg/l	1		AK 102	total

Client Sample ID: MW5-0910 — Lab Sample ID: ATI0088-05

No Detections.

Client Sample ID: MW6-0910 — Lab Sample ID: ATI0088-06

No Detections.

Client Sample ID: Dup — Lab Sample ID: ATI0088-07

No Detections.

Client Sample ID: Trip Blank — Lab Sample ID: ATI0088-08

No Detections.

Client Sample ID: MW1-0910

Lab Sample ID: ATI0088-01

Date Collected: 09/25/10 11:05

Matrix: Water

Date Received: 09/28/10 17:30

Method: EPA 8260B - Selected Volatile Organic Compounds per EPA Method 8260B

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**1.42**		0.500		ug/l		09/29/10 14:02	09/30/10 04:11	1
Toluene	**43.9**		1.00		ug/l		09/29/10 14:02	09/30/10 04:11	1
Ethylbenzene	**55.1**		1.00		ug/l		09/29/10 14:02	09/30/10 04:11	1
Xylenes (total)	**266**		3.00		ug/l		09/29/10 14:02	09/30/10 04:11	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-BFB	*110*		*85 - 115*	*09/29/10 14:02*	*09/30/10 04:11*	*1*
Dibromofluoromethane	*113*		*65 - 125*	*09/29/10 14:02*	*09/30/10 04:11*	*1*
Toluene-d8	*104*		*78 - 115*	*09/29/10 14:02*	*09/30/10 04:11*	*1*

Method: AK 102 - Diesel Range Organics (C10-C25) per AK102

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	**126**	**RL7, Q11**	3.91		mg/l		10/01/10 13:14	10/04/10 17:48	10

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*138*		*50 - 150*	*10/01/10 13:14*	*10/04/10 17:48*	*10*

Client Sample ID: MW2-0910

Lab Sample ID: ATI0088-02

Date Collected: 09/25/10 11:48

Matrix: Water

Date Received: 09/28/10 17:30

Method: EPA 8260B - Selected Volatile Organic Compounds per EPA Method 8260B

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/l		09/29/10 14:02	09/30/10 04:43	1
Toluene	ND		1.00		ug/l		09/29/10 14:02	09/30/10 04:43	1
Ethylbenzene	**2.23**		1.00		ug/l		09/29/10 14:02	09/30/10 04:43	1
Xylenes (total)	**21.8**		3.00		ug/l		09/29/10 14:02	09/30/10 04:43	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-BFB	*102*		*85 - 115*	*09/29/10 14:02*	*09/30/10 04:43*	*1*
Dibromofluoromethane	*106*		*65 - 125*	*09/29/10 14:02*	*09/30/10 04:43*	*1*
Toluene-d8	*98.1*		*78 - 115*	*09/29/10 14:02*	*09/30/10 04:43*	*1*

Method: AK 102 - Diesel Range Organics (C10-C25) per AK102

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	**27.1**	**Q2**	0.391		mg/l		10/01/10 13:14	10/04/10 15:48	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*142*		*50 - 150*	*10/01/10 13:14*	*10/04/10 15:48*	*1*

Client Sample ID: MW3-0910

Lab Sample ID: ATI0088-03

Date Collected: 09/25/10 12:38

Matrix: Water

Date Received: 09/28/10 17:30

Method: EPA 8260B - Selected Volatile Organic Compounds per EPA Method 8260B

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/l		09/29/10 14:02	09/30/10 05:15	1
Toluene	ND		1.00		ug/l		09/29/10 14:02	09/30/10 05:15	1
Ethylbenzene	ND		1.00		ug/l		09/29/10 14:02	09/30/10 05:15	1
Xylenes (total)	ND		3.00		ug/l		09/29/10 14:02	09/30/10 05:15	1

Client Sample ID: MW3-0910
Date Collected: 09/25/10 12:38
Date Received: 09/28/10 17:30

Lab Sample ID: ATI0088-03
Matrix: Water

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-BFB	*102*		*85 - 115*	*09/29/10 14:02*	*09/30/10 05:15*	*1*
Dibromofluoromethane	*103*		*65 - 125*	*09/29/10 14:02*	*09/30/10 05:15*	*1*
Toluene-d8	*98.3*		*78 - 115*	*09/29/10 14:02*	*09/30/10 05:15*	*1*

Method: AK 102 - Diesel Range Organics (C10-C25) per AK102

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	ND		0.391		mg/l		10/01/10 13:14	10/04/10 16:20	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*82.4*		*50 - 150*	*10/01/10 13:14*	*10/04/10 16:20*	*1*

Client Sample ID: MW4-0910
Date Collected: 09/25/10 13:18
Date Received: 09/28/10 17:30

Lab Sample ID: ATI0088-04
Matrix: Water

Method: EPA 8260B - Selected Volatile Organic Compounds per EPA Method 8260B

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/l		09/29/10 14:02	09/30/10 05:47	1
Toluene	ND		1.00		ug/l		09/29/10 14:02	09/30/10 05:47	1
Ethylbenzene	ND		1.00		ug/l		09/29/10 14:02	09/30/10 05:47	1
Xylenes (total)	**7.59**		3.00		ug/l		09/29/10 14:02	09/30/10 05:47	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-BFB	*102*		*85 - 115*	*09/29/10 14:02*	*09/30/10 05:47*	*1*
Dibromofluoromethane	*103*		*65 - 125*	*09/29/10 14:02*	*09/30/10 05:47*	*1*
Toluene-d8	*99.1*		*78 - 115*	*09/29/10 14:02*	*09/30/10 05:47*	*1*

Method: AK 102 - Diesel Range Organics (C10-C25) per AK102

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	**14.1**	**Q2**	0.391		mg/l		10/01/10 13:14	10/04/10 16:20	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*101*		*50 - 150*	*10/01/10 13:14*	*10/04/10 16:20*	*1*

Client Sample ID: MW5-0910
Date Collected: 09/25/10 14:04
Date Received: 09/28/10 17:30

Lab Sample ID: ATI0088-05
Matrix: Water

Method: EPA 8260B - Selected Volatile Organic Compounds per EPA Method 8260B

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/l		09/29/10 14:02	09/30/10 06:19	1
Toluene	ND		1.00		ug/l		09/29/10 14:02	09/30/10 06:19	1
Ethylbenzene	ND		1.00		ug/l		09/29/10 14:02	09/30/10 06:19	1
Xylenes (total)	ND		3.00		ug/l		09/29/10 14:02	09/30/10 06:19	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-BFB	*104*		*85 - 115*	*09/29/10 14:02*	*09/30/10 06:19*	*1*
Dibromofluoromethane	*104*		*65 - 125*	*09/29/10 14:02*	*09/30/10 06:19*	*1*
Toluene-d8	*99.7*		*78 - 115*	*09/29/10 14:02*	*09/30/10 06:19*	*1*

Method: AK 102 - Diesel Range Organics (C10-C25) per AK102

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	ND		0.397		mg/l		10/01/10 13:14	10/04/10 17:17	1

Client Sample ID: MW5-0910

Lab Sample ID: ATI0088-05

Date Collected: 09/25/10 14:04

Matrix: Water

Date Received: 09/28/10 17:30

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*76.7*		*50 - 150*	*10/01/10 13:14*	*10/04/10 17:17*	*1*

Client Sample ID: MW6-0910

Lab Sample ID: ATI0088-06

Date Collected: 09/25/10 14:52

Matrix: Water

Date Received: 09/28/10 17:30

Method: EPA 8260B - Selected Volatile Organic Compounds per EPA Method 8260B

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/l		09/29/10 14:02	09/30/10 06:51	1
Toluene	ND		1.00		ug/l		09/29/10 14:02	09/30/10 06:51	1
Ethylbenzene	ND		1.00		ug/l		09/29/10 14:02	09/30/10 06:51	1
Xylenes (total)	ND		3.00		ug/l		09/29/10 14:02	09/30/10 06:51	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-BFB	*102*		*85 - 115*	*09/29/10 14:02*	*09/30/10 06:51*	*1*
Dibromofluoromethane	*104*		*65 - 125*	*09/29/10 14:02*	*09/30/10 06:51*	*1*
Toluene-d8	*99.4*		*78 - 115*	*09/29/10 14:02*	*09/30/10 06:51*	*1*

Method: AK 102 - Diesel Range Organics (C10-C25) per AK102

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	ND		0.391		mg/l		10/01/10 13:14	10/04/10 17:17	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*99.3*		*50 - 150*	*10/01/10 13:14*	*10/04/10 17:17*	*1*

Client Sample ID: Dup

Lab Sample ID: ATI0088-07

Date Collected: 09/25/10 15:37

Matrix: Water

Date Received: 09/28/10 17:30

Method: EPA 8260B - Selected Volatile Organic Compounds per EPA Method 8260B

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/l		09/29/10 14:02	09/30/10 07:23	1
Toluene	ND		1.00		ug/l		09/29/10 14:02	09/30/10 07:23	1
Ethylbenzene	ND		1.00		ug/l		09/29/10 14:02	09/30/10 07:23	1
Xylenes (total)	ND		3.00		ug/l		09/29/10 14:02	09/30/10 07:23	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-BFB	*104*		*85 - 115*	*09/29/10 14:02*	*09/30/10 07:23*	*1*
Dibromofluoromethane	*105*		*65 - 125*	*09/29/10 14:02*	*09/30/10 07:23*	*1*
Toluene-d8	*99.2*		*78 - 115*	*09/29/10 14:02*	*09/30/10 07:23*	*1*

Method: AK 102 - Diesel Range Organics (C10-C25) per AK102

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	ND		0.397		mg/l		10/01/10 13:14	10/04/10 17:48	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctadecane	*89.7*		*50 - 150*	*10/01/10 13:14*	*10/04/10 17:48*	*1*

Client: Alaska Resources & Environmental Services
Project/Site: [none]

TestAmerica Job ID: ATI0088
SDG: ATI0088

Client Sample ID: Trip Blank
Date Collected: 09/25/10 00:00
Date Received: 09/28/10 17:30

Lab Sample ID: ATI0088-08
Matrix: Water

Method: EPA 8260B - Selected Volatile Organic Compounds per EPA Method 8260B

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/l		09/29/10 14:02	09/30/10 03:39	1
Toluene	ND		1.00		ug/l		09/29/10 14:02	09/30/10 03:39	1
Ethylbenzene	ND		1.00		ug/l		09/29/10 14:02	09/30/10 03:39	1
Xylenes (total)	ND		3.00		ug/l		09/29/10 14:02	09/30/10 03:39	1

Surrogate	*% Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-BFB	*105*		*85 - 115*	*09/29/10 14:02*	*09/30/10 03:39*	*1*
Dibromofluoromethane	*105*		*65 - 125*	*09/29/10 14:02*	*09/30/10 03:39*	*1*
Toluene-d8	*99.4*		*78 - 115*	*09/29/10 14:02*	*09/30/10 03:39*	*1*

Surrogate Summary

Client: Alaska Resources & Environmental Services
Project/Site: [none]

TestAmerica Job ID: ATI0088
SDG: ATI0088

Method: EPA 8260B - Selected Volatile Organic Compounds per EPA Method 8260B

Matrix: Water **Prep Type: total**

		Percent Surrogate Recovery (Acceptance Limits)		
		4-BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(85-115)	(65-125)	(78-115)
10I0151-BLK1	10I0151-BLK1	104	103	99.4
10I0151-BS1	10I0151-BS1	98.6	103	102
10I0151-BSD1	10I0151-BSD1	98.5	103	101
ATI0088-01	MW1-0910	110	113	104
ATI0088-02	MW2-0910	102	106	98.1
ATI0088-03	MW3-0910	102	103	98.3
ATI0088-04	MW4-0910	102	103	99.1
ATI0088-05	MW5-0910	104	104	99.7
ATI0088-06	MW6-0910	102	104	99.4
ATI0088-07	Dup	104	105	99.2
ATI0088-08	Trip Blank	105	105	99.4

Surrogate Legend

4-BFB = 4-BFB

DBFM = Dibromofluoromethane

TOL = Toluene-d8

Method: AK 102 - Diesel Range Organics (C10-C25) per AK102

Matrix: Water **Prep Type: total**

		Percent Surrogate Recovery (Acceptance Limits)
		1COD
Lab Sample ID	Client Sample ID	(50-150)
10J0002-BLK1	10J0002-BLK1	76.0
10J0002-DUP1	ATI0069-04	104
ATI0088-01	MW1-0910	138
ATI0088-02	MW2-0910	142
ATI0088-03	MW3-0910	82.4
ATI0088-04	MW4-0910	101
ATI0088-05	MW5-0910	76.7
ATI0088-06	MW6-0910	99.3
ATI0088-07	Dup	89.7

Surrogate Legend

1COD = 1-Chlorooctadecane

Method: AK 102 - Diesel Range Organics (C10-C25) per AK102

Matrix: Water **Prep Type: total**

		Percent Surrogate Recovery (Acceptance Limits)
		1COD
Lab Sample ID	Client Sample ID	(60-120)
10J0002-BS1	10J0002-BS1	96.3
10J0002-BS2	10J0002-BS2	97.7
10J0002-BS3	10J0002-BS3	93.3
10J0002-BSD1	10J0002-BSD1	85.8

Surrogate Legend

1COD = 1-Chlorooctadecane

Method: EPA 8260B - Selected Volatile Organic Compounds per EPA Method 8260B

Lab Sample ID: 10I0151-BLK1
Matrix: Water
Analysis Batch: T000528

Client Sample ID: 10I0151-BLK1
Prep Type: total
Prep Batch: 10I0151_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/l		09/29/10 14:02	09/30/10 00:59	1
Toluene	ND		1.00		ug/l		09/29/10 14:02	09/30/10 00:59	1
Ethylbenzene	ND		1.00		ug/l		09/29/10 14:02	09/30/10 00:59	1
Xylenes (total)	ND		3.00		ug/l		09/29/10 14:02	09/30/10 00:59	1

Surrogate	*Blank % Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-BFB	*104*		*85 - 115*	*09/29/10 14:02*	*09/30/10 00:59*	*1*
Dibromofluoromethane	*103*		*65 - 125*	*09/29/10 14:02*	*09/30/10 00:59*	*1*
Toluene-d8	*99.4*		*78 - 115*	*09/29/10 14:02*	*09/30/10 00:59*	*1*

Lab Sample ID: 10I0151-BS1
Matrix: Water
Analysis Batch: T000528

Client Sample ID: 10I0151-BS1
Prep Type: total
Prep Batch: 10I0151_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits		
Benzene			20.0	21.2		ug/l		106	67 - 125		
Toluene			20.0	20.8		ug/l		104	80 - 120		
Ethylbenzene			20.0	21.0		ug/l		105	80 - 120		
Xylenes (total)			60.0	65.7		ug/l		109	80 - 120		

Surrogate	*LCS % Recovery*	*LCS Qualifier*	*Limits*
4-BFB	*98.6*		*85 - 115*
Dibromofluoromethane	*103*		*65 - 125*
Toluene-d8	*102*		*78 - 115*

Lab Sample ID: 10I0151-BSD1
Matrix: Water
Analysis Batch: T000528

Client Sample ID: 10I0151-BSD1
Prep Type: total
Prep Batch: 10I0151_P

Analyte			Spike Added	LCS Dup Result	LCS Dup Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Benzene			20.0	21.8		ug/l		109	67 - 125	2.33	20
Toluene			20.0	21.3		ug/l		106	80 - 120	2.33	20
Ethylbenzene			20.0	21.7		ug/l		108	80 - 120	3.18	20
Xylenes (total)			60.0	67.6		ug/l		113	80 - 120	2.79	20

Surrogate	*LCS Dup % Recovery*	*LCS Dup Qualifier*	*Limits*
4-BFB	*98.5*		*85 - 115*
Dibromofluoromethane	*103*		*65 - 125*
Toluene-d8	*101*		*78 - 115*

Method: AK 102 - Diesel Range Organics (C10-C25) per AK102

Lab Sample ID: 10J0002-BLK1
Matrix: Water
Analysis Batch: T000537

Client Sample ID: 10J0002-BLK1
Prep Type: total
Prep Batch: 10J0002_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics	ND		0.500		mg/l		10/01/10 13:14	10/04/10 13:44	1

Method: AK 102 - Diesel Range Organics (C10-C25) per AK102 (Continued)

Lab Sample ID: 10J0002-BLK1
Matrix: Water
Analysis Batch: T000537

Client Sample ID: 10J0002-BLK1
Prep Type: total
Prep Batch: 10J0002_P

Surrogate	Blank % Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctadecane	76.0		50 - 150	10/01/10 13:14	10/04/10 13:44	1

Lab Sample ID: 10J0002-BS1
Matrix: Water
Analysis Batch: T000537

Client Sample ID: 10J0002-BS1
Prep Type: total
Prep Batch: 10J0002_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits		
Diesel Range Organics			11.1	11.1		mg/l		100	75 - 125		

Surrogate	LCS % Recovery	LCS Qualifier	Limits
1-Chlorooctadecane	96.3		60 - 120

Lab Sample ID: 10J0002-BS2
Matrix: Water
Analysis Batch: T000537

Client Sample ID: 10J0002-BS2
Prep Type: total
Prep Batch: 10J0002_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits		
Diesel Range Organics			11.1	12.1		mg/l		109	75 - 125		

Surrogate	LCS % Recovery	LCS Qualifier	Limits
1-Chlorooctadecane	97.7		60 - 120

Lab Sample ID: 10J0002-BS3
Matrix: Water
Analysis Batch: T000537

Client Sample ID: 10J0002-BS3
Prep Type: total
Prep Batch: 10J0002_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits		
Diesel Range Organics			11.1	13.1		mg/l		118	75 - 125		

Surrogate	LCS % Recovery	LCS Qualifier	Limits
1-Chlorooctadecane	93.3		60 - 120

Lab Sample ID: 10J0002-BSD1
Matrix: Water
Analysis Batch: T000537

Client Sample ID: 10J0002-BSD1
Prep Type: total
Prep Batch: 10J0002_P

Analyte			Spike Added	LCS Dup Result	LCS Dup Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	RPD Limit
Diesel Range Organics			11.1	10.6		mg/l		95.3	75 - 125	5.10	20

Surrogate	LCS Dup % Recovery	LCS Dup Qualifier	Limits
1-Chlorooctadecane	85.8		60 - 120

Lab Sample ID: 10J0002-DUP1
Matrix: Water
Analysis Batch: T000538

Client Sample ID: ATI0069-04
Prep Type: total
Prep Batch: 10J0002_P

Analyte	Sample Result	Sample Qualifier		Duplicate Result	Duplicate Qualifier	Unit	D			RPD	RPD Limit
Diesel Range Organics	0.172			0.424	R2	mg/l				84.8	20

Method: AK 102 - Diesel Range Organics (C10-C25) per AK102 (Continued)

Lab Sample ID: 10J0002-DUP1
Matrix: Water
Analysis Batch: T000538

Client Sample ID: ATI0069-04
Prep Type: total
Prep Batch: 10J0002_P

Surrogate	Duplicate % Recovery	Duplicate Qualifier	Limits
1-Chlorooctadecane	*104*		*50 - 150*

Client: Alaska Resources & Environmental Services
Project/Site: [none]

TestAmerica Job ID: ATI0088
SDG: ATI0088

GCMS Volatiles

Prep Batch: 10I0151_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
10I0151-BS1	10I0151-BS1	total	Water	EPA 5030B	
10I0151-BSD1	10I0151-BSD1	total	Water	EPA 5030B	
10I0151-BLK1	10I0151-BLK1	total	Water	EPA 5030B	
ATI0088-08	Trip Blank	total	Water	EPA 5030B	
ATI0088-01	MW1-0910	total	Water	EPA 5030B	
ATI0088-02	MW2-0910	total	Water	EPA 5030B	
ATI0088-03	MW3-0910	total	Water	EPA 5030B	
ATI0088-04	MW4-0910	total	Water	EPA 5030B	
ATI0088-05	MW5-0910	total	Water	EPA 5030B	
ATI0088-06	MW6-0910	total	Water	EPA 5030B	
ATI0088-07	Dup	total	Water	EPA 5030B	

Analysis Batch: T000528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
10I0151-BS1	10I0151-BS1	total	Water	EPA 8260B	10I0151_P
10I0151-BSD1	10I0151-BSD1	total	Water	EPA 8260B	10I0151_P
10I0151-BLK1	10I0151-BLK1	total	Water	EPA 8260B	10I0151_P
ATI0088-08	Trip Blank	total	Water	EPA 8260B	10I0151_P
ATI0088-01	MW1-0910	total	Water	EPA 8260B	10I0151_P
ATI0088-02	MW2-0910	total	Water	EPA 8260B	10I0151_P
ATI0088-03	MW3-0910	total	Water	EPA 8260B	10I0151_P
ATI0088-04	MW4-0910	total	Water	EPA 8260B	10I0151_P
ATI0088-05	MW5-0910	total	Water	EPA 8260B	10I0151_P
ATI0088-06	MW6-0910	total	Water	EPA 8260B	10I0151_P
ATI0088-07	Dup	total	Water	EPA 8260B	10I0151_P

Fuels

Prep Batch: 10J0002_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
10J0002-BLK1	10J0002-BLK1	total	Water	EPA 3510	
10J0002-DUP1	ATI0069-04	total	Water	EPA 3510	
10J0002-BS1	10J0002-BS1	total	Water	EPA 3510	
10J0002-BS2	10J0002-BS2	total	Water	EPA 3510	
10J0002-BS3	10J0002-BS3	total	Water	EPA 3510	
10J0002-BSD1	10J0002-BSD1	total	Water	EPA 3510	
ATI0088-02	MW2-0910	total	Water	EPA 3510	
ATI0088-03	MW3-0910	total	Water	EPA 3510	
ATI0088-04	MW4-0910	total	Water	EPA 3510	
ATI0088-05	MW5-0910	total	Water	EPA 3510	
ATI0088-06	MW6-0910	total	Water	EPA 3510	
ATI0088-01	MW1-0910	total	Water	EPA 3510	
ATI0088-07	Dup	total	Water	EPA 3510	

Analysis Batch: T000537

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
10J0002-BLK1	10J0002-BLK1	total	Water	AK 102	10J0002_P
10J0002-BS1	10J0002-BS1	total	Water	AK 102	10J0002_P
10J0002-BS2	10J0002-BS2	total	Water	AK 102	10J0002_P
10J0002-BS3	10J0002-BS3	total	Water	AK 102	10J0002_P
10J0002-BSD1	10J0002-BSD1	total	Water	AK 102	10J0002_P
ATI0088-03	MW3-0910	total	Water	AK 102	10J0002_P

Fuels (Continued)

Analysis Batch: T000537 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
ATI0088-05	MW5-0910	total	Water	AK 102	10J0002_P
ATI0088-07	Dup	total	Water	AK 102	10J0002_P

Analysis Batch: T000538

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
10J0002-DUP1	ATI0069-04	total	Water	AK 102	10J0002_P
ATI0088-02	MW2-0910	total	Water	AK 102	10J0002_P
ATI0088-04	MW4-0910	total	Water	AK 102	10J0002_P
ATI0088-06	MW6-0910	total	Water	AK 102	10J0002_P
ATI0088-01	MW1-0910	total	Water	AK 102	10J0002_P

Client Sample ID: MW1-0910
Lab Sample ID: ATI0088-01
Date Collected: 09/25/10 11:05
Matrix: Water
Date Received: 09/28/10 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
total	Prep	EPA 5030B		1	10I0151_P	09/29/10 14:02	jmg	TestAmerica Anchorage
total	Analysis	EPA 8260B		1	T000528	09/30/10 04:11	jmg	TestAmerica Anchorage
total	Prep	EPA 3510		0.7813	10J0002_P	10/01/10 13:14	rt	TestAmerica Anchorage
total	Analysis	AK 102		10	T000538	10/04/10 17:48	deb	TestAmerica Anchorage

Client Sample ID: MW2-0910
Lab Sample ID: ATI0088-02
Date Collected: 09/25/10 11:48
Matrix: Water
Date Received: 09/28/10 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
total	Prep	EPA 5030B		1	10I0151_P	09/29/10 14:02	jmg	TestAmerica Anchorage
total	Analysis	EPA 8260B		1	T000528	09/30/10 04:43	jmg	TestAmerica Anchorage
total	Prep	EPA 3510		0.7813	10J0002_P	10/01/10 13:14	rt	TestAmerica Anchorage
total	Analysis	AK 102		1	T000538	10/04/10 15:48	deb	TestAmerica Anchorage

Client Sample ID: MW3-0910
Lab Sample ID: ATI0088-03
Date Collected: 09/25/10 12:38
Matrix: Water
Date Received: 09/28/10 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
total	Prep	EPA 5030B		1	10I0151_P	09/29/10 14:02	jmg	TestAmerica Anchorage
total	Analysis	EPA 8260B		1	T000528	09/30/10 05:15	jmg	TestAmerica Anchorage
total	Prep	EPA 3510		0.7813	10J0002_P	10/01/10 13:14	rt	TestAmerica Anchorage
total	Analysis	AK 102		1	T000537	10/04/10 16:20	deb	TestAmerica Anchorage

Client Sample ID: MW4-0910
Lab Sample ID: ATI0088-04
Date Collected: 09/25/10 13:18
Matrix: Water
Date Received: 09/28/10 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
total	Prep	EPA 5030B		1	10I0151_P	09/29/10 14:02	jmg	TestAmerica Anchorage
total	Analysis	EPA 8260B		1	T000528	09/30/10 05:47	jmg	TestAmerica Anchorage
total	Prep	EPA 3510		0.7813	10J0002_P	10/01/10 13:14	rt	TestAmerica Anchorage
total	Analysis	AK 102		1	T000538	10/04/10 16:20	deb	TestAmerica Anchorage

Client Sample ID: MW5-0910
Lab Sample ID: ATI0088-05
Date Collected: 09/25/10 14:04
Matrix: Water
Date Received: 09/28/10 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
total	Prep	EPA 5030B		1	10I0151_P	09/29/10 14:02	jmg	TestAmerica Anchorage
total	Analysis	EPA 8260B		1	T000528	09/30/10 06:19	jmg	TestAmerica Anchorage
total	Prep	EPA 3510		0.7937	10J0002_P	10/01/10 13:14	rt	TestAmerica Anchorage
total	Analysis	AK 102		1	T000537	10/04/10 17:17	deb	TestAmerica Anchorage

Lab Chronicle

Client: Alaska Resources & Environmental Services
Project/Site: [none]

TestAmerica Job ID: ATI0088
SDG: ATI0088

Client Sample ID: MW6-0910

Lab Sample ID: ATI0088-06

Date Collected: 09/25/10 14:52

Matrix: Water

Date Received: 09/28/10 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
total	Prep	EPA 5030B		1	10I0151_P	09/29/10 14:02	jmg	TestAmerica Anchorage
total	Analysis	EPA 8260B		1	T000528	09/30/10 06:51	jmg	TestAmerica Anchorage
total	Prep	EPA 3510		0.7813	10J0002_P	10/01/10 13:14	rt	TestAmerica Anchorage
total	Analysis	AK 102		1	T000538	10/04/10 17:17	deb	TestAmerica Anchorage

Client Sample ID: Dup

Lab Sample ID: ATI0088-07

Date Collected: 09/25/10 15:37

Matrix: Water

Date Received: 09/28/10 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
total	Prep	EPA 5030B		1	10I0151_P	09/29/10 14:02	jmg	TestAmerica Anchorage
total	Analysis	EPA 8260B		1	T000528	09/30/10 07:23	jmg	TestAmerica Anchorage
total	Prep	EPA 3510		0.7937	10J0002_P	10/01/10 13:14	rt	TestAmerica Anchorage
total	Analysis	AK 102		1	T000537	10/04/10 17:48	deb	TestAmerica Anchorage

Client Sample ID: Trip Blank

Lab Sample ID: ATI0088-08

Date Collected: 09/25/10 00:00

Matrix: Water

Date Received: 09/28/10 17:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
total	Prep	EPA 5030B		1	10I0151_P	09/29/10 14:02	jmg	TestAmerica Anchorage
total	Analysis	EPA 8260B		1	T000528	09/30/10 03:39	jmg	TestAmerica Anchorage

Certification Summary

Client: Alaska Resources & Environmental Services
Project/Site: [none]

TestAmerica Job ID: ATI0088
SDG: ATI0088

Laboratory	Authority	Program	EPA Region	Certification ID	Expiration Date
TestAmerica Anchorage	Alaska	Alaska UST	10	UST-067	06/16/11
TestAmerica Anchorage	Alaska	State Program	10	AK00975	06/30/11

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Method Summary

Client: Alaska Resources & Environmental Services
Project/Site: [none]

TestAmerica Job ID: ATI0088
SDG: ATI0088

Method	Method Description	Protocol	Laboratory
EPA 8260B	Selected Volatile Organic Compounds per EPA Method 8260B		TAL ANC
AK 102	Diesel Range Organics (C10-C25) per AK102		TAL ANC

Protocol References:

=

Laboratory References:

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

Sample Summary

Client: Alaska Resources & Environmental Services
Project/Site: [none]

TestAmerica Job ID: ATI0088
SDG: ATI0088

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
ATI0088-01	MW1-0910	Water	09/25/10 11:05	09/28/10 17:30
ATI0088-02	MW2-0910	Water	09/25/10 11:48	09/28/10 17:30
ATI0088-03	MW3-0910	Water	09/25/10 12:38	09/28/10 17:30
ATI0088-04	MW4-0910	Water	09/25/10 13:18	09/28/10 17:30
ATI0088-05	MW5-0910	Water	09/25/10 14:04	09/28/10 17:30
ATI0088-06	MW6-0910	Water	09/25/10 14:52	09/28/10 17:30
ATI0088-07	Dup	Water	09/25/10 15:37	09/28/10 17:30
ATI0088-08	Trip Blank	Water	09/25/10 00:00	09/28/10 17:30

ALASKA RESOURCES AND ENVIRONMENTAL SERVICES

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

10/20/2010

Chain of Custody Report

A7100858

Client: Alaska Resources and Environmental Services

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

Project Name: Double D Leasing
Project Number:
Sampled By: Lyle Gresehover

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

P.O. Number:

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

Turnaround Request In Business Days

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

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

Specify Other:

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

Preservative: HCL

Requested Analyses

	Sample Identification	Sampling Date/ Time		EPA 8260B BTEX	AK 102 DRO	Matrix (W,S,O)	# of Cont.	Location / Comments	Lab ID
1	MW1-0910	09/25/10	1105	X	X	W	5		01
2	MW2-0910	09/25/10	1148	X	X	W	5		02
3	MW3-0910	09/25/10	1238	X	X	W	5		03
4	MW4-0910	09/25/10	1318	X	X	W	5		04
5	MW5-0910	09/25/10	1404	X	X	W	5		05
6	MW6-0910	09/25/10	1452	X	X	W	5		06
7	Dup	09/25/10	1537	X	X	W	5		07
8	Trip Blank	9/25/10				W	3		08
9									
10									

Released By: [signature] Date: 09/28/10
Print Name: Lyle Gresehover Firm: ARES Time: 10:30

Received By: [signature] Date: 9/28/10
Print Name: Firm: Time: 1730

Released By: Date:
Print Name: Firm: Time:

Received By: Date:
Print Name: Firm: Time:

Additional Remarks: STANDARD TAT

Temp 1.6°C

COC REV 02/2008

Page 1 of 1

Test America Anchorage Cooler Receipt Form

(Army Corps. Compliant)

WORK ORDER # ATI 0088 CLIENT: ARES PROJECT: Double D Leasing

Date /Time Cooler Arrived 9 / 28/10 17:30 Cooler signed for by: Stephen Lam (Print name)

Preliminary Examination Phase:

Date cooler opened: [X] same as date received *or* ____/____/____

Cooler opened by (print) Stephen Lam (sign) [signature]

1. Delivered by [X] ALASKA AIRLINES [ ] Fed-Ex [ ] UPS [ ] NAC [ ] LYNDEN [ ] CLIENT [ ] Other:

Shipment Tracking # if applicable 027-7752-0774 (include copy of shipping papers in file)

2. Number of Custody Seals 2 Signed by see back Date 9 /28 /10

Were custody seals unbroken and intact on arrival? [X] Yes [ ] No

3. Were custody papers sealed in a plastic bag? [X] Yes [ ] No

4. Were custody papers filled out properly (ink, signed, etc.)? [X] Yes [ ] No

5. Did you sign the custody papers in the appropriate place? [X] Yes [ ] No

6. Was ice used? [ ] Yes [ ] No Type of ice: [ ] blue ice [X] gel ice [ ] real ice [ ] dry ice Condition of Ice: Solid

Temperature by Digi-Thermo Probe 1.6 °C Thermometer # Rec 5

Acceptance Criteria: 0 - 6°C

7. Packing in Cooler: [X] bubble wrap [ ] styrofoam [X] cardboard [ ] Other:

8. Did samples arrive in plastic bags? [X] Yes [ ] No

9. Did all bottles arrive unbroken, and with labels in good condition? [X] Yes [ ] No

10. Are all bottle labels complete (ID, date, time, etc.) [X] Yes [ ] No

11. Do bottle labels and Chain of Custody agree? [X] Yes [ ] No

12. Are the containers and preservatives correct for the tests indicated? [X] Yes [ ] No

13. Conoco Phillips, Alyeska, BP H2O samples only: pH < 2? [ ] Yes [ ] No [X] N/A

14. Is there adequate volume for the tests requested? [X] Yes [ ] No

15. Were VOA vials free of bubbles? [ ] N/A [X] Yes [ ] No

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

Log-in Phase:

Date of sample log-in 9/28/10

Samples logged in by (print) Stephen Lam (sign) [signature]

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
463801

Custody Seal

DATE 9/28/2010

SIGNATURE

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
463801

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
463802

Custody Seal

DATE 9/28/2010

SIGNATURE

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
463802

Laboratory Data Review Checklist

Alaska Resources and Environmental Services
Project: Milepost 205 Richardson Highway Spill

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
   ☒Yes ☐No 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 Comments:

   N/A

2. Chain of Custody (COC)

   a. COC information completed, signed, and dated (including released / received by)?
   ☒Yes ☐No Comments:

   b. Correct analyses requested?
   ☒Yes ☐No Comments:

3. Laboratory sample Receipt Documentation

   a. Sample/ cooler temperature documented and within range at receipt (4° ± 2° C)?
   ☒Yes ☐No Comments:

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

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

   No adverse conditions noted.

d. If there were any discrepancies, were they documented? – For example, incorrect sample containers/ preservation, sample temperature outside of acceptance range, insufficient or missing samples, etc.?
☐Yes ☐No Comments:

N/A

e. Data quality or usability affected? Explain.
Comments:

N/A

4. Case Narrative

a. Present and understandable?
☒Yes ☐No Comments:

b. Discrepancies, errors or QC failures identified by the lab?
☒Yes ☐No Comments:

Internal Lab duplicate sample RPD was above limits.

c. Were all corrective actions documented?
☒Yes ☐No Comments:

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

No effect on data quality was given in the case narrative.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?
☒Yes ☐No Comments:

b. All applicable holding times met?
☒Yes ☐No Comments:

c. All soils reported on a dry weight basis?
☐Yes ☐No Comments:

N/A

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?
☒Yes ☐No Comments:

e. Data quality or usability affected? Explain.
Comments:

N/A

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?
☒Yes ☐No Comments:

ii. All method blank results less than PQL?
☒Yes ☐No Comments:

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

N/A

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
☐Yes ☐No Comments:

N/A

v. Data quality or usability affected? Explain.
Comments:

N/A

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

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples?
☒Yes ☐No Comments:

ii. Metals/Inorganics – One LCS and one sample duplicate reported per matrix, analysis and 20 samples?
☐Yes ☐No Comments:

N/A

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK 101 60%-120%, AK 102 75%-125%, AK 103 60%-120%; all other analyses see the laboratory QC pages)

☒Yes ☐No Comments:

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

☒Yes ☐No Comments:

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

Comments:

N/A

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

☐Yes ☐No Comments:

N/A

vii. Data quality or usability affected? Explain.

Comments:

N/A

c. Surrogates – Organics Only

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

☒Yes ☐No Comments:

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

☒Yes ☐No Comments:

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

☐Yes ☐No Comments:

N/A

iv. Data quality or usability affected? Explain.
Comments:

N/A

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

i. One trip blank reported per matrix, analysis and cooler?
☒Yes ☐No Comments:

ii. All results less than PQL?
☒Yes ☐No Comments:

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

N/A

iv. Data quality or usability affected? Explain.
Comments:

N/A

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?
☒Yes ☐No Comments:

ii. Submitted blind to lab?
☒Yes ☐No Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs?
(Recommended: 30% water, 50% soil) RPD (%) = Absolute Value of: $\frac{(R1-R2)}{((R1+R2)/2)} \times 100$
Where R1 = Sample Concentration
R2 = Field Duplicate Concentration
☒Yes ☐No Comments:

iv. Data quality or usability affected?
☐Yes ☒No Comments:

f. Decontamination or Equipment Blank (if applicable)
☐Yes ☐No ☒Not Applicable

i. All results less than PQL
☐Yes ☐No Comments:

N/A

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

N/A

iii. Data quality or usability affected? Explain.
Comments:

N/A

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

a. Defined and appropriate?
☒Yes ☐No Comments:

Completed by: **Jason Gresehover**

Title: **Environmental Tech.** Date: **5/18/11**

CS Report Name: Report Date: **Sept. 2010**

Consultant Firm: **Alaska Resources and Environmental Services**

Laboratory Name: **Test America** Laboratory Report Number: **ATI0099**

ADEC File Number: **140.38.052** ADEC RecKey Number: