



MWH

BUILDING A BETTER WORLD

October 17, 2011

Anastasia Duarte
Tesoro Refining and Marketing Company
3450 South 344th Way, Suite 100
Auburn, WA 98001-5931

*Reviewed Report
12-5-11 for Paul Horvath
and prepared a summary for
his review and oversight.
Alyce Neuhay*
2100.26.085

1010430.010102/14.4
RECEIVED
OCT 20 2011
ADEC
Kenai Area Office

RE: August 2011 Exploratory Soil Test Holes Report – Final
Former Tesoro Northstore #11, 317 Muldoon Road, Anchorage, Alaska
ADEC Facility ID #1502; ADEC File #2100.26.085

Dear Ms. Duarte:

This letter describes the activities and results for the exploratory soil test holes investigation, conducted at Former Tesoro Northstore #11 on August 25, 2011. The location of the site is shown on Figure 1 (Attachment 1). The Alaska Department of Environmental Conservation (ADEC) was notified about the proposed investigation on August 1, 2011. The purpose of the test holes was to check for the presence of petroleum contamination in the shallow (10-foot depth) soil zone and determine the soil type in each test hole for consideration in future work plans.

Cal Larson, Engineering Technician III, and Michael Zidek, Project Manager, both with MWH, completed the work for this investigation. All sampling activities were completed in accordance with ADEC's *Underground Storage Tanks Procedures Manual – Standard Sampling Procedures* (November 7, 2002).

Three exploratory test holes were excavated in the vicinity of MW-15 and VSC-3 down to a depth of 10 feet. The location of the soil test holes are shown on Figure 2 (Attachment 1). Photos of the test holes are provided in Attachment 2. During the excavations, representative soil samples were collected from the backhoe bucket. The samples were screened using a photoionization detector, calibrated with 100 parts per million isobutylene. Field screening found no indication of the presence of petroleum contamination.

One bottom sample was collected from each of the three test holes. These samples were submitted to TestAmerica, Inc. for analysis. Samples were collected in laboratory-supplied sample containers, and delivered to the ADEC-approved laboratory in accordance with standard chain-of-custody procedures.

Laboratory analytical results for the soil samples collected during this sampling event are summarized in Table 1. The test holes were designated in the field as "TP". A copy of the laboratory report is provided in Attachment 3.

Table 1 Soil Analytical Results
Samples collected on August 25, 2011

Sample Identification	Depth (feet)	Benzene ¹ (mg/Kg)	Toluene ¹ (mg/Kg)	Ethylbenzene ¹ (mg/Kg)	Xylenes ¹ (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	PID (ppm)
TP1	10	U (0.00769)	U (0.0154)	U (0.0154)	U (0.0461)	U (1.28)	U (21.6)	2.8
TP2	10	U (0.00845)	U (0.0169)	U (0.0169)	U (0.0507)	U (1.41)	U (23.2)	NT
TP3	10	U (0.00778)	0.0198	U (0.0156)	U (0.0467)	U (1.29)	U (22.0)	6.8
TNS-11 Dup (duplicate of TP3)	10	U (0.00833)	0.0227	U (0.0167)	U (0.0500)	U (1.39)	U (22.5)	NA
Trip Blank	NA	U (0.0200)	U (0.0400)	U (0.0400)	U (0.120)	U (3.33)	NT	NA
SCLs	NA	0.025	6.5	6.9	63	300	250	NA

Key:

1 – Analyzed by U.S. Environmental Protection Agency Method 8021B.

AK – Alaska Test Method

DRO – Diesel range organics, analyzed by AK102.

GRO – Gasoline range organics, analyzed by AK101.

mg/Kg – milligrams per kilogram

NA – not applicable

NT – not tested

PID – photoionization detector

ppm – parts per million

SCLs – Soil cleanup levels, per Alaska Department of Environmental Conservation 18 Alaska Administrative Code 75.345, Table B.

U – Undetected above the practical quantitation limits shown in parentheses.

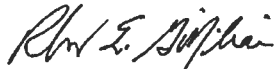
TestAmerica, Inc. met all laboratory quality assurance/quality control (QC) criteria during the analysis of ground water samples for this event. Laboratory QC data and the ADEC Laboratory Data Review Checklist are included with the laboratory report in Attachment 3.

Toluene was detected above the practical quantitation limit (PQL), but below the ADEC soil cleanup level (SCL) in Sample TP3 and its duplicate. All other analytes of concern were not detected above their respective PQLs.

Soil samples from the bottom of each test hole were also submitted to DOWL HKM for particle size distribution analysis. Sample TP-1 was classified as well-graded gravel with silt and sand. Sample TP-2 was classified as poorly-graded gravel with sand. Sample TP-3 was classified as well-graded gravel with sand. The full particle size distribution analysis is provided in Attachment 4.

If you have any questions or need additional information concerning this exploratory test hole investigation, please contact me at (907) 248-8883.

Sincerely,
MWH Americas, Inc.



Robert Gilfilian, PE.
Principal Engineer

- Attachments: 1 Figures
 2 Photo Log
 3 Laboratory Analytical Report
 4 Particle Size Distribution Report

ATTACHMENT 1

Figure 1 Location and Vicinity Map

*Figure 2 Test Hole Locations and Soil
Analytical Results*

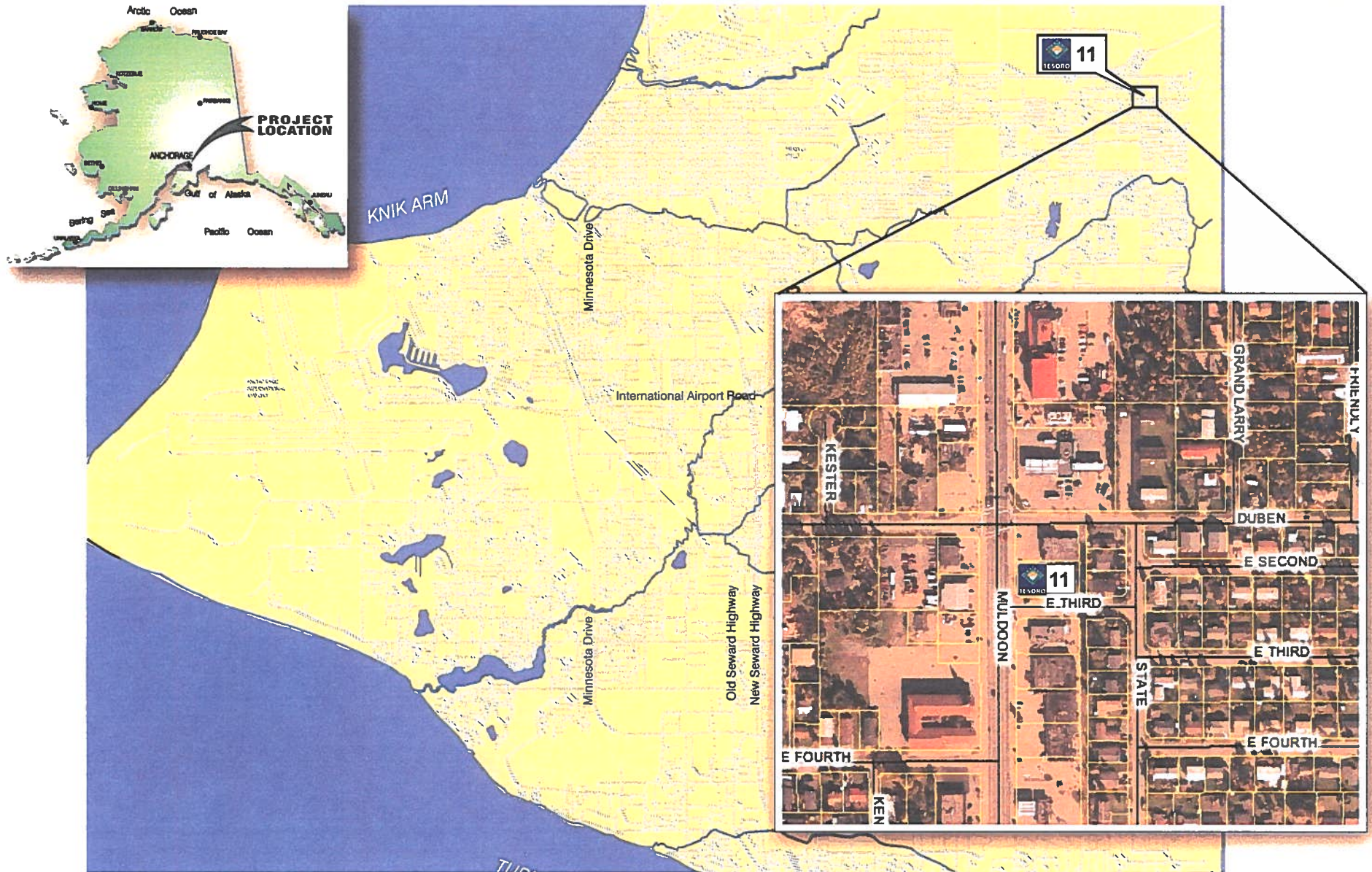
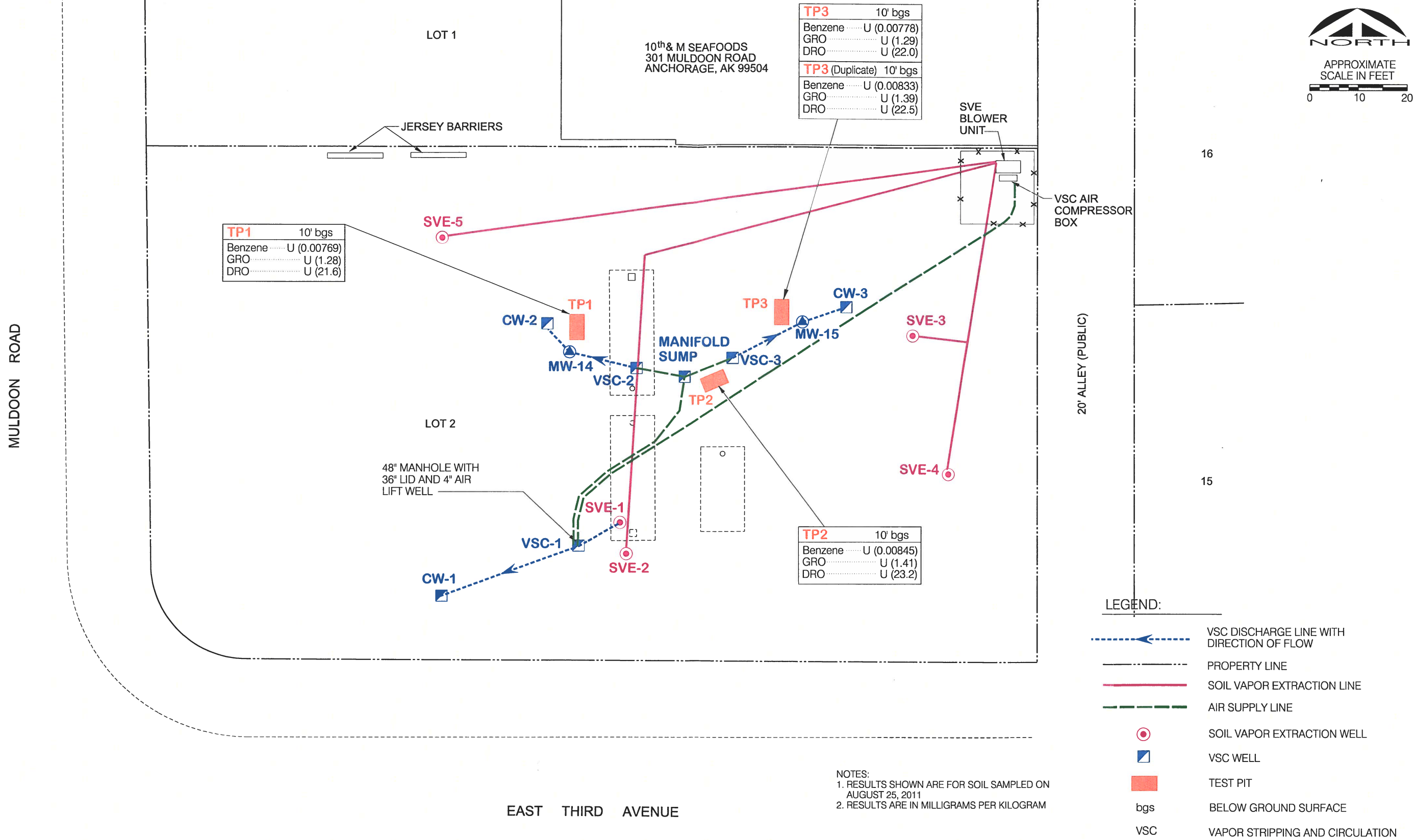
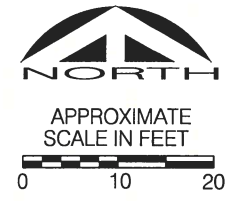


FIGURE 1

TESORO COMPANY – FORMER TESORO NORTHSTORE #11
AUGUST 2011 EXPLORATORY TEST HOLE REPORT

LOCATION AND VICINITY MAP

FILE: D:\CAD\Proj\Tesoro\NorthStore\0112011 Exploratory Hole Report\FINAL\FIG02.dgn
 TIME: 11-OCT-2011 11:36
 JOB NO: 1010430.01002



NOTES:
 1. RESULTS SHOWN ARE FOR SOIL SAMPLED ON AUGUST 25, 2011
 2. RESULTS ARE IN MILLIGRAMS PER KILOGRAM

FIGURE 2
 TESORO COMPANY - FORMER TESORO NORTHSTORE #11
 AUGUST 2011 EXPLORATORY TEST HOLE REPORT
**TEST HOLE LOCATIONS AND
 SOIL ANALYTICAL RESULTS**



ATTACHMENT 2

Photo Log



1. Test Pit 1 completed excavation.



2. Test Pit 1 completed excavation.



3. Test Pit 2 excavation in progress.



4. Test Pit 2 completed excavation.



5. Test Pit 3 excavation in progress.



6. Test Pit 3 completed excavation.

ATTACHMENT 3

Laboratory Analytical Report

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: AUH0068
Client Project/Site: 1010430
Client Project Description: TNS - 11

For:
Montgomery Watson Harza
1835 South Bragaw Suite 350
Anchorage, AK/USA 99508

Attn: Mike Zidek

Johanna Dreher

*Authorized for release by:
09/07/2011 06:44:25 PM*

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

LINKS

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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.



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Definitions/Glossary

Client: Montgomery Watson Harza
Project/Site: 1010430

TestAmerica Job ID: AUH0068

Qualifiers

GC Volatiles

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☒	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit (Dioxin)
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or method detection limit if shown)
PQL	Practical Quantitation Limit
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Montgomery Watson Harza
Project/Site: 1010430

TestAmerica Job ID: AUH0068

Job ID: AUH0068

Laboratory: TestAmerica Anchorage

Narrative

Receipt

All samples were received in good condition within temperature requirements.

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Detection Summary

Client: Montgomery Watson Harza
Project/Site: 1010430

TestAmerica Job ID: AUH0068

Client Sample ID: Trip Blank

Lab Sample ID: AUH0068-01

No Detections

Client Sample ID: TP1@10'

Lab Sample ID: AUH0068-02

No Detections

Client Sample ID: TP-2@10'

Lab Sample ID: AUH0068-03

No Detections

Client Sample ID: TP-3@10'

Lab Sample ID: AUH0068-04

Analyte	Result	Qualifier	RL	MDL	Unit	DII Fac	D	Method	Prep Type
Toluene	0.0198		0.0156		mg/kg dry	33.3	*	AK101/EPA 8021B	Total

Client Sample ID: TNS-11 Dup

Lab Sample ID: AUH0068-05

Analyte	Result	Qualifier	RL	MDL	Unit	DII Fac	D	Method	Prep Type
Toluene	0.0227		0.0167		mg/kg dry	33.3	*	AK101/EPA 8021B	Total

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Client Sample Results

Client: Montgomery Watson Harza
Project/Site: 1010430

TestAmerica Job ID: AUH0068

Client Sample ID: Trip Blank

Lab Sample ID: AUH0068-01

Date Collected: 08/25/11 08:00

Matrix: Soil

Date Received: 08/25/11 15:30

Percent Solids: 100

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	ND		3.33		mg/kg dry	☒	08/29/11 10:20	08/29/11 15:11	33.3
Benzene	ND		0.0200		mg/kg dry	☒	08/29/11 10:20	08/29/11 15:11	33.3
Toluene	ND		0.0400		mg/kg dry	☒	08/29/11 10:20	08/29/11 15:11	33.3
Ethylbenzene	ND		0.0400		mg/kg dry	☒	08/29/11 10:20	08/29/11 15:11	33.3
Xylenes (total)	ND		0.120		mg/kg dry	☒	08/29/11 10:20	08/29/11 15:11	33.3
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-BFB (FID)	78.4		50 - 150				08/29/11 10:20	08/29/11 15:11	33.3
a,a,a-TFT (FID)	110		50 - 150				08/29/11 10:20	08/29/11 15:11	33.3
4-BFB (PID)	69.6		50 - 150				08/29/11 10:20	08/29/11 15:11	33.3
a,a,a-TFT (PID)	97.0		50 - 150				08/29/11 10:20	08/29/11 15:11	33.3

Client Sample ID: TP1@10'

Lab Sample ID: AUH0068-02

Date Collected: 08/25/11 09:30

Matrix: Soil

Date Received: 08/25/11 15:30

Percent Solids: 94.2

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		21.6		mg/kg dry	☒	08/31/11 09:05	09/01/11 12:34	1.00
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctadecane	107		50 - 150				08/31/11 09:05	09/01/11 12:34	1.00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	ND		1.28		mg/kg dry	☒	08/29/11 10:20	08/29/11 22:26	33.3
Benzene	ND		0.00769		mg/kg dry	☒	08/29/11 10:20	08/29/11 22:26	33.3
Toluene	ND		0.0154		mg/kg dry	☒	08/29/11 10:20	08/29/11 22:26	33.3
Ethylbenzene	ND		0.0154		mg/kg dry	☒	08/29/11 10:20	08/29/11 22:26	33.3
Xylenes (total)	ND		0.0461		mg/kg dry	☒	08/29/11 10:20	08/29/11 22:26	33.3
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-BFB (FID)	105		50 - 150				08/29/11 10:20	08/29/11 22:26	33.3
a,a,a-TFT (FID)	110		50 - 150				08/29/11 10:20	08/29/11 22:26	33.3
4-BFB (PID)	98.3		50 - 150				08/29/11 10:20	08/29/11 22:26	33.3
a,a,a-TFT (PID)	93.5		50 - 150				08/29/11 10:20	08/29/11 22:26	33.3

Client Sample ID: TP-2@10'

Lab Sample ID: AUH0068-03

Date Collected: 08/25/11 10:00

Matrix: Soil

Date Received: 08/25/11 15:30

Percent Solids: 91.9

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		23.2		mg/kg dry	☒	08/31/11 09:05	09/01/11 13:28	1.00
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctadecane	97.8		50 - 150				08/31/11 09:05	09/01/11 13:28	1.00

Client Sample Results

Client: Montgomery Watson Harza
Project/Site: 1010430

TestAmerica Job ID: AUH0068

Client Sample ID: TP-2@10'

Lab Sample ID: AUH0068-03

Date Collected: 08/25/11 10:00

Matrix: Soil

Date Received: 08/25/11 15:30

Percent Solids: 91.9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	ND		1.41		mg/kg dry	☒	08/29/11 10:20	08/29/11 22:52	33.3
Benzene	ND		0.00845		mg/kg dry	☒	08/29/11 10:20	08/29/11 22:52	33.3
Toluene	ND		0.0169		mg/kg dry	☒	08/29/11 10:20	08/29/11 22:52	33.3
Ethylbenzene	ND		0.0169		mg/kg dry	☒	08/29/11 10:20	08/29/11 22:52	33.3
Xylenes (total)	ND		0.0507		mg/kg dry	☒	08/29/11 10:20	08/29/11 22:52	33.3

Surrogate	% Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-BFB (FID)	96.9		50 - 150	08/29/11 10:20	08/29/11 22:52	33.3
a,a,a-TFT (FID)	127		50 - 150	08/29/11 10:20	08/29/11 22:52	33.3
4-BFB (PID)	83.0		50 - 150	08/29/11 10:20	08/29/11 22:52	33.3
a,a,a-TFT (PID)	108		50 - 150	08/29/11 10:20	08/29/11 22:52	33.3

Client Sample ID: TP-3@10'

Lab Sample ID: AUH0068-04

Date Collected: 08/25/11 11:00

Matrix: Soil

Date Received: 08/25/11 15:30

Percent Solids: 94.8

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		22.0		mg/kg dry	☒	08/31/11 09:05	09/01/11 13:28	1.00

Surrogate	% Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctadecane	104		50 - 150	08/31/11 09:05	09/01/11 13:28	1.00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	ND		1.29		mg/kg dry	☒	08/29/11 10:20	08/29/11 23:17	33.3
Benzene	ND		0.00778		mg/kg dry	☒	08/29/11 10:20	08/29/11 23:17	33.3
Toluene	0.0198		0.0156		mg/kg dry	☒	08/29/11 10:20	08/29/11 23:17	33.3
Ethylbenzene	ND		0.0156		mg/kg dry	☒	08/29/11 10:20	08/29/11 23:17	33.3
Xylenes (total)	ND		0.0467		mg/kg dry	☒	08/29/11 10:20	08/29/11 23:17	33.3

Surrogate	% Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-BFB (FID)	97.3		50 - 150	08/29/11 10:20	08/29/11 23:17	33.3
a,a,a-TFT (FID)	112		50 - 150	08/29/11 10:20	08/29/11 23:17	33.3
4-BFB (PID)	85.7		50 - 150	08/29/11 10:20	08/29/11 23:17	33.3
a,a,a-TFT (PID)	95.0		50 - 150	08/29/11 10:20	08/29/11 23:17	33.3

Client Sample ID: TNS-11 Dup

Lab Sample ID: AUH0068-05

Date Collected: 08/25/11 11:30

Matrix: Soil

Date Received: 08/25/11 15:30

Percent Solids: 95.7

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		22.5		mg/kg dry	☒	08/31/11 09:05	09/01/11 14:13	1.00

Surrogate	% Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctadecane	95.0		50 - 150	08/31/11 09:05	09/01/11 14:13	1.00

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Client Sample Results

Client: Montgomery Watson Harza
Project/Site: 1010430

TestAmerica Job ID: AUH0068

Client Sample ID: TNS-11 Dup

Lab Sample ID: AUH0068-05

Date Collected: 08/25/11 11:30

Matrix: Soil

Date Received: 08/25/11 15:30

Percent Solids: 95.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	ND		1.39		mg/kg dry	*	08/29/11 10:20	08/29/11 23:42	33.3
Benzene	ND		0.00833		mg/kg dry	*	08/29/11 10:20	08/29/11 23:42	33.3
Toluene	0.0227		0.0167		mg/kg dry	*	08/29/11 10:20	08/29/11 23:42	33.3
Ethylbenzene	ND		0.0167		mg/kg dry	*	08/29/11 10:20	08/29/11 23:42	33.3
Xylenes (total)	ND		0.0500		mg/kg dry	*	08/29/11 10:20	08/29/11 23:42	33.3
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-BFB (FID)	91.8		50 - 150				08/29/11 10:20	08/29/11 23:42	33.3
a,a,a-TFT (FID)	104		50 - 150				08/29/11 10:20	08/29/11 23:42	33.3
4-BFB (PID)	78.8		50 - 150				08/29/11 10:20	08/29/11 23:42	33.3
a,a,a-TFT (PID)	88.9		50 - 150				08/29/11 10:20	08/29/11 23:42	33.3

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Surrogate Summary

Client: Montgomery Watson Harza
Project/Site: 1010430

TestAmerica Job ID: AUH0068

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

Matrix: Soil

Prep Type: Total

Lab Sample ID	Client Sample ID	1COD (50-150)	Percent Surrogate Recovery (Acceptance Limits)			
11H0145-BLK1	Method Blank	106				
11H0145-DUP1	Duplicate	98.8				
11H0145-MS1	Matrix Spike	98.6				
11H0145-MSD1	Matrix Spike Duplicate	103				
AUH0068-02	TP1@10'	107				
AUH0068-03	TP-2@10'	97.8				
AUH0068-04	TP-3@10'	104				
AUH0068-05	TNS-11 Dup	95.0				

Surrogate Legend
1COD = 1-Chlorooctadecane

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

Matrix: Soil

Prep Type: Total

Lab Sample ID	Client Sample ID	1COD (60-120)	Percent Surrogate Recovery (Acceptance Limits)			
11H0145-BS1	Lab Control Sample	111				
11H0145-BSD1	Lab Control Sample Dup	111				

Surrogate Legend
1COD = 1-Chlorooctadecane

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

Matrix: Soil

Prep Type: Total

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)							
		4-BFB (FID) (50-150)	TFT(FID) (50-150)	4-BFB (PID) (50-150)	a,a-TFT (PII) (50-160)	4-BFB (PID) (50-150)	4-BFB (PID) (60-120)	a,a-TFT (PII) (50-150)	a,a-TFT (PII) (60-120)
11H0133-BLK1	Method Blank	83.9	120	74.9	106	74.9		106	
11H0133-DUP1	Duplicate	103	108						
11H0133-MS1	Matrix Spike			81.1	70.2	81.1		70.2	
11H0133-MSD1	Matrix Spike Duplicate			73.1	72.2	73.1		72.2	
AUH0068-01	Trip Blank	78.4	110	69.6	97.0	69.6		97.0	
AUH0068-02	TP1@10'	105	110	98.3	93.5	98.3		93.5	
AUH0068-03	TP-2@10'	96.9	127	83.0	108	83.0		108	
AUH0068-04	TP-3@10'	97.3	112	85.7	95.0	85.7		95.0	
AUH0068-05	TNS-11 Dup	91.8	104	78.8	88.9	78.8		88.9	

Surrogate Legend
4-BFB (FID) = 4-BFB (FID)
TFT(FID) = a,a,a-TFT (FID)
4-BFB (PID) = 4-BFB (PID)
a,a,a-TFT (PID) = a,a,a-TFT (PID)

Surrogate Summary

Client: Montgomery Watson Harza
Project/Site: 1010430

TestAmerica Job ID: AUH0068

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

Matrix: Soil

Prep Type: Total

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		4-BFB (PID) (60-120)	a,a-TFT (PID) (60-120)
11H0133-BS1	Lab Control Sample	74.5	99.9
11H0133-BSD1	Lab Control Sample Dup	78.8	95.0

Surrogate Legend
4-BFB (PID) = 4-BFB (PID)
a,a,a-TFT (PID) = a,a,a-TFT (PID)

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

Matrix: Soil

Prep Type: Total

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		4-BFB (FID) (60-120)	TFT(FID) (60-120)
11H0133-BS2	Lab Control Sample	86.6	113
11H0133-BSD2	Lab Control Sample Dup	94.5	117

Surrogate Legend
4-BFB (FID) = 4-BFB (FID)
TFT(FID) = a,a,a-TFT (FID)

QC Sample Results

Client: Montgomery Watson Harza
Project/Site: 1010430

TestAmerica Job ID: AUH0068

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

Lab Sample ID: 11H0145-BLK1										Client Sample ID: Method Blank		
Matrix: Soil										Prep Type: Total		
Analysis Batch: U000657										Prep Batch: 11H0145_P		
Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac			
Diesel Range Organics	ND		20.0		mg/kg wet		08/31/11 09:05	09/01/11 10:57	1.00			
Surrogate												
	Blank % Recovery	Blank Qualifier	Limits				Prepared	Analyzed	Dil Fac			
1-Chlorooctadecane	106		50 - 150				08/31/11 09:05	09/01/11 10:57	1.00			

Lab Sample ID: 11H0145-BS1										Client Sample ID: Lab Control Sample		
Matrix: Soil										Prep Type: Total		
Analysis Batch: U000657										Prep Batch: 11H0145_P		
Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits			
Diesel Range Organics			128	127		mg/kg wet		99.4	75 - 125			
Surrogate												
	LCS % Recovery	LCS Qualifier	Limits									
1-Chlorooctadecane	111		60 - 120									

Lab Sample ID: 11H0145-BSD1										Client Sample ID: Lab Control Sample Dup		
Matrix: Soil										Prep Type: Total		
Analysis Batch: U000657										Prep Batch: 11H0145_P		
Analyte			Spike Added	LCS Dup Result	LCS Dup Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	Limit	
Diesel Range Organics			128	125		mg/kg wet		97.9	75 - 125	1.56	20	
Surrogate												
	LCS Dup % Recovery	LCS Dup Qualifier	Limits									
1-Chlorooctadecane	111		60 - 120									

Lab Sample ID: 11H0145-MS1										Client Sample ID: Matrix Spike		
Matrix: Soil										Prep Type: Total		
Analysis Batch: U000656										Prep Batch: 11H0145_P		
Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	% Rec	% Rec. Limits			
Diesel Range Organics	8.17		148	132		mg/kg dry	*	83.7	75 - 125			
Surrogate												
	Matrix Spike % Recovery	Matrix Spike Qualifier	Limits									
1-Chlorooctadecane	98.6		50 - 150									

Lab Sample ID: 11H0145-MSD1										Client Sample ID: Matrix Spike Duplicate		
Matrix: Soil										Prep Type: Total		
Analysis Batch: U000656										Prep Batch: 11H0145_P		
Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	% Rec	% Rec. Limits	RPD	Limit	
Diesel Range Organics	8.17		147	137		mg/kg dry	*	88.0	75 - 125	3.65	25	
Surrogate												
	Matrix Spike Dup % Recovery	Matrix Spike Dup Qualifier	Limits									
1-Chlorooctadecane	103		50 - 150									

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QC Sample Results

Client: Montgomery Watson Harza
Project/Site: 1010430

TestAmerica Job ID: AUH0068

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

Lab Sample ID: 11H0145-DUP1						Client Sample ID: Duplicate			
Matrix: Soil						Prep Type: Total			
Analysis Batch: U000656						Prep Batch: 11H0145_P			
	Sample	Sample	Duplicate	Duplicate					
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit	
Diesel Range Organics	8.17		8.80		mg/kg dry	2	18.4	20	
	Duplicate	Duplicate							
Surrogate	% Recovery	Qualifier	Limits						
1-Chlorooctadecane	98.8		50 - 150						

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

Lab Sample ID: 11H0133-BLK1						Client Sample ID: Method Blank			
Matrix: Soil						Prep Type: Total			
Analysis Batch: U000640						Prep Batch: 11H0133_P			
	Blank	Blank							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	ND		3.33		mg/kg wet		08/29/11 10:20	08/29/11 10:25	33.3
Benzene	ND		0.0200		mg/kg wet		08/29/11 10:20	08/29/11 10:25	33.3
Toluene	ND		0.0400		mg/kg wet		08/29/11 10:20	08/29/11 10:25	33.3
Ethylbenzene	ND		0.0400		mg/kg wet		08/29/11 10:20	08/29/11 10:25	33.3
Xylenes (total)	ND		0.120		mg/kg wet		08/29/11 10:20	08/29/11 10:25	33.3
	Blank	Blank							
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-BFB (FID)	83.9		50 - 150				08/29/11 10:20	08/29/11 10:25	33.3
a,a,a-TFT (FID)	120		50 - 150				08/29/11 10:20	08/29/11 10:25	33.3
4-BFB (PID)	74.9		50 - 150				08/29/11 10:20	08/29/11 10:25	33.3
a,a,a-TFT (PID)	106		50 - 150				08/29/11 10:20	08/29/11 10:25	33.3

Lab Sample ID: 11H0133-BS1						Client Sample ID: Lab Control Sample			
Matrix: Soil						Prep Type: Total			
Analysis Batch: U000640						Prep Batch: 11H0133_P			
			Spike	LCS	LCS				% Rec.
Analyte			Added	Result	Qualifier	Unit	D	% Rec	Limits
Benzene			0.800	0.663		mg/kg wet		82.9	70 - 130
Toluene			0.800	0.637		mg/kg wet		79.7	70 - 130
Ethylbenzene			0.800	0.624		mg/kg wet		78.0	70 - 130
Xylenes (total)			2.40	1.79		mg/kg wet		74.8	70 - 130
			LCS	LCS					% Rec.
Surrogate			% Recovery	Qualifier	Limits				
4-BFB (PID)			74.5		60 - 120				
a,a,a-TFT (PID)			99.9		60 - 120				

Lab Sample ID: 11H0133-BS2						Client Sample ID: Lab Control Sample			
Matrix: Soil						Prep Type: Total			
Analysis Batch: U000640						Prep Batch: 11H0133_P			
			Spike	LCS	LCS				% Rec.
Analyte			Added	Result	Qualifier	Unit	D	% Rec	Limits
Gasoline Range Organics			20.0	21.3		mg/kg wet		106	60 - 120
			LCS	LCS					% Rec.
Surrogate			% Recovery	Qualifier	Limits				
4-BFB (FID)			86.6		60 - 120				
a,a,a-TFT (FID)			113		60 - 120				

QC Sample Results

Client: Montgomery Watson Harza
Project/Site: 1010430

TestAmerica Job ID: AUH0068

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

Lab Sample ID: 11H0133-BSD1				Client Sample ID: Lab Control Sample Dup							
Matrix: Soil				Prep Type: Total							
Analysis Batch: U000640				Prep Batch: 11H0133_P							
Analyte	Spike Added	LCS Dup Result	LCS Dup Qualifier	Unit	D	% Rec	% Rec.		RPD	Limit	
							Limits	RPD			
Benzene	0.800	0.647		mg/kg wet		80.9	70 - 130	2.49		20	
Toluene	0.800	0.632		mg/kg wet		79.0	70 - 130	0.808		20	
Ethylbenzene	0.800	0.639		mg/kg wet		79.9	70 - 130	2.41		20	
Xylenes (total)	2.40	1.86		mg/kg wet		77.5	70 - 130	3.61		20	
Surrogate	% Recovery	LCS Dup Qualifier	Limits								
4-BFB (PID)	78.8		60 - 120								
a,a,a-TFT (PID)	95.0		60 - 120								

Lab Sample ID: 11H0133-BSD2				Client Sample ID: Lab Control Sample Dup							
Matrix: Soil				Prep Type: Total							
Analysis Batch: U000640				Prep Batch: 11H0133_P							
Analyte	Spike Added	LCS Dup Result	LCS Dup Qualifier	Unit	D	% Rec	% Rec.		RPD	Limit	
							Limits	RPD			
Gasoline Range Organics	20.0	22.6		mg/kg wet		113	60 - 120	6.22		20	
Surrogate	% Recovery	LCS Dup Qualifier	Limits								
4-BFB (FID)	94.5		60 - 120								
a,a,a-TFT (FID)	117		60 - 120								

Lab Sample ID: 11H0133-MS1				Client Sample ID: Matrix Spike							
Matrix: Soil				Prep Type: Total							
Analysis Batch: U000640				Prep Batch: 11H0133_P							
Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	% Rec	% Rec.		Limit
									Limits	RPD	
Benzene	0.00443		0.273	0.337		mg/kg dry	*	122	60 - 140		
Toluene	0.0179		0.273	0.333		mg/kg dry	*	116	60 - 140		
Ethylbenzene	ND		0.273	0.328		mg/kg dry	*	120	60 - 140		
Xylenes (total)	0.0212		0.818	0.973		mg/kg dry	*	116	60 - 140		
Surrogate	% Recovery	Matrix Spike Qualifier	Limits								
4-BFB (PID)	81.1		50 - 150								
a,a,a-TFT (PID)	70.2		50 - 150								

Lab Sample ID: 11H0133-MSD1				Client Sample ID: Matrix Spike							
Matrix: Soil				Prep Type: Total							
Analysis Batch: U000640				Prep Batch: 11H0133_P							
Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	% Rec	% Rec.		Limit
									Limits	RPD	
Benzene	0.00443		0.273	0.380		mg/kg dry	*	138	60 - 140	12.0	30
Toluene	0.0179		0.273	0.379		mg/kg dry	*	132	60 - 140	12.7	30
Ethylbenzene	ND		0.273	0.386	M7	mg/kg dry	*	141	60 - 140	16.0	30
Xylenes (total)	0.0212		0.818	1.14		mg/kg dry	*	137	60 - 140	16.2	30
Surrogate	% Recovery	Matrix Spike Dup Qualifier	Limits								
4-BFB (PID)	73.1		50 - 160								
a,a,a-TFT (PID)	72.2		50 - 150								

QC Sample Results

Client: Montgomery Watson Harza
 Project/Site: 1010430

TestAmerica Job ID: AUH0068

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

Lab Sample ID: 11H0133-DUP1				Client Sample ID: Duplicate				
Matrix: Soil				Prep Type: Total				
Analysis Batch: U000640				Prep Batch: 11H0133_P				
Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	Limit
Gasoline Range Organics	0.779		0.660		mg/kg dry	5	16.5	20
Surrogate	Duplicate % Recovery	Duplicate Qualifier	Limits					
4-BFB (FID)	103		50 - 150					
a,a,a-TFT (FID)	108		50 - 150					

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QC Association Summary

Client: Montgomery Watson Harza
Project/Site: 1010430

TestAmerica Job ID: AUH0068

Fuels

Analysis Batch: 11H0132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11H0132-DUP1	Duplicate	Total	Soil	TA-SOP	11H0132_P
AUH0068-01	Trip Blank	Total	Soil	TA-SOP	11H0132_P
AUH0068-02	TP1@10'	Total	Soil	TA-SOP	11H0132_P
AUH0068-03	TP-2@10'	Total	Soil	TA-SOP	11H0132_P
AUH0068-04	TP-3@10'	Total	Soil	TA-SOP	11H0132_P
AUH0068-05	TNS-11 Dup	Total	Soil	TA-SOP	11H0132_P

Analysis Batch: U000656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11H0145-DUP1	Duplicate	Total	Soil	AK 102	11H0145_P
11H0145-MS1	Matrix Spike	Total	Soil	AK 102	11H0145_P
11H0145-MSD1	Matrix Spike Duplicate	Total	Soil	AK 102	11H0145_P
AUH0068-03	TP-2@10'	Total	Soil	AK 102	11H0145_P
AUH0068-05	TNS-11 Dup	Total	Soil	AK 102	11H0145_P

Analysis Batch: U000657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11H0145-BLK1	Method Blank	Total	Soil	AK 102	11H0145_P
11H0145-BS1	Lab Control Sample	Total	Soil	AK 102	11H0145_P
11H0145-BSD1	Lab Control Sample Dup	Total	Soil	AK 102	11H0145_P
AUH0068-02	TP1@10'	Total	Soil	AK 102	11H0145_P
AUH0068-04	TP-3@10'	Total	Soil	AK 102	11H0145_P

Prep Batch: 11H0132_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11H0132-DUP1	Duplicate	Total	Soil	*** DEFAULT PREP ***	
AUH0068-01	Trip Blank	Total	Soil	*** DEFAULT PREP ***	
AUH0068-02	TP1@10'	Total	Soil	*** DEFAULT PREP ***	
AUH0068-03	TP-2@10'	Total	Soil	*** DEFAULT PREP ***	
AUH0068-04	TP-3@10'	Total	Soil	*** DEFAULT PREP ***	
AUH0068-05	TNS-11 Dup	Total	Soil	*** DEFAULT PREP ***	

Prep Batch: 11H0145_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11H0145-BLK1	Method Blank	Total	Soil	EPA 3545	
11H0145-BS1	Lab Control Sample	Total	Soil	EPA 3545	
11H0145-BSD1	Lab Control Sample Dup	Total	Soil	EPA 3545	
11H0145-DUP1	Duplicate	Total	Soil	EPA 3545	
11H0145-MS1	Matrix Spike	Total	Soil	EPA 3545	
11H0145-MSD1	Matrix Spike Duplicate	Total	Soil	EPA 3545	
AUH0068-02	TP1@10'	Total	Soil	EPA 3545	
AUH0068-03	TP-2@10'	Total	Soil	EPA 3545	
AUH0068-04	TP-3@10'	Total	Soil	EPA 3545	
AUH0068-05	TNS-11 Dup	Total	Soil	EPA 3545	

QC Association Summary

Client: Montgomery Watson Harza
 Project/Site: 1010430

TestAmerica Job ID: AUH0068

GC Volatiles

Analysis Batch: U000640

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11H0133-BLK1	Method Blank	Total	Soil	AK101/EPA 8021B	11H0133_P
11H0133-BS1	Lab Control Sample	Total	Soil	AK101/EPA 8021B	11H0133_P
11H0133-BS2	Lab Control Sample	Total	Soil	AK101/EPA 8021B	11H0133_P
11H0133-BSD1	Lab Control Sample Dup	Total	Soil	AK101/EPA 8021B	11H0133_P
11H0133-BSD2	Lab Control Sample Dup	Total	Soil	AK101/EPA 8021B	11H0133_P
11H0133-DUP1	Duplicate	Total	Soil	AK101/EPA 8021B	11H0133_P
11H0133-MS1	Matrix Spike	Total	Soil	AK101/EPA 8021B	11H0133_P
11H0133-MSD1	Matrix Spike Duplicate	Total	Soil	AK101/EPA 8021B	11H0133_P
AUH0068-01	Trip Blank	Total	Soil	AK101/EPA 8021B	11H0133_P
AUH0068-02	TP1@10'	Total	Soil	AK101/EPA 8021B	11H0133_P
AUH0068-03	TP-2@10'	Total	Soil	AK101/EPA 8021B	11H0133_P
AUH0068-04	TP-3@10'	Total	Soil	AK101/EPA 8021B	11H0133_P
AUH0068-05	TNS-11 Dup	Total	Soil	AK101/EPA 8021B	11H0133_P

Prep Batch: 11H0133_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
11H0133-BLK1	Method Blank	Total	Soil	AK101 Field Prep	
11H0133-BS1	Lab Control Sample	Total	Soil	AK101 Field Prep	
11H0133-BS2	Lab Control Sample	Total	Soil	AK101 Field Prep	
11H0133-BSD1	Lab Control Sample Dup	Total	Soil	AK101 Field Prep	
11H0133-BSD2	Lab Control Sample Dup	Total	Soil	AK101 Field Prep	
11H0133-DUP1	Duplicate	Total	Soil	AK101 Field Prep	
11H0133-MS1	Matrix Spike	Total	Soil	AK101 Field Prep	
11H0133-MSD1	Matrix Spike Duplicate	Total	Soil	AK101 Field Prep	
AUH0068-01	Trip Blank	Total	Soil	AK101 Field Prep	
AUH0068-02	TP1@10'	Total	Soil	AK101 Field Prep	
AUH0068-03	TP-2@10'	Total	Soil	AK101 Field Prep	
AUH0068-04	TP-3@10'	Total	Soil	AK101 Field Prep	
AUH0068-05	TNS-11 Dup	Total	Soil	AK101 Field Prep	

Lab Chronicle

Client: Montgomery Watson Harza
Project/Site: 1010430

TestAmerica Job ID: AUH0068

Client Sample ID: Trip Blank

Lab Sample ID: AUH0068-01

Date Collected: 08/25/11 08:00

Matrix: Soil

Date Received: 08/25/11 15:30

Percent Solids: 100

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total	Prep	*** DEFAULT PREP ***		1.00	11H0132_P	08/29/11 09:22	DEB	TAL ANC
Total	Analysis	TA-SOP		1.00	11H0132	08/30/11 09:45	JMG	TAL ANC
Total	Prep	AK101 Field Prep		1.00	11H0133_P	08/29/11 10:20	JMG	TAL ANC
Total	Analysis	AK101/EPA 8021B		33.3	U000640	08/29/11 15:11	JMG	TAL ANC

Client Sample ID: TP1@10'

Lab Sample ID: AUH0068-02

Date Collected: 08/25/11 09:30

Matrix: Soil

Date Received: 08/25/11 15:30

Percent Solids: 94.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total	Prep	EPA 3545		1.02	11H0145_P	08/31/11 09:05	DEB	TAL ANC
Total	Analysis	AK 102		1.00	U000657	09/01/11 12:34	DEB	TAL ANC
Total	Prep	*** DEFAULT PREP ***		1.00	11H0132_P	08/29/11 09:22	DEB	TAL ANC
Total	Analysis	TA-SOP		1.00	11H0132	08/30/11 09:45	JMG	TAL ANC
Total	Prep	AK101 Field Prep		0.304	11H0133_P	08/29/11 10:20	JMG	TAL ANC
Total	Analysis	AK101/EPA 8021B		33.3	U000640	08/29/11 22:26	JMG	TAL ANC

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Client Sample ID: TP-2@10'

Lab Sample ID: AUH0068-03

Date Collected: 08/25/11 10:00

Matrix: Soil

Date Received: 08/25/11 15:30

Percent Solids: 91.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total	Prep	EPA 3545		1.07	11H0145_P	08/31/11 09:05	DEB	TAL ANC
Total	Analysis	AK 102		1.00	U000656	09/01/11 13:28	DEB	TAL ANC
Total	Prep	*** DEFAULT PREP ***		1.00	11H0132_P	08/29/11 09:22	DEB	TAL ANC
Total	Analysis	TA-SOP		1.00	11H0132	08/30/11 09:45	JMG	TAL ANC
Total	Prep	AK101 Field Prep		0.307	11H0133_P	08/29/11 10:20	JMG	TAL ANC
Total	Analysis	AK101/EPA 8021B		33.3	U000640	08/29/11 22:52	JMG	TAL ANC

Client Sample ID: TP-3@10'

Lab Sample ID: AUH0068-04

Date Collected: 08/25/11 11:00

Matrix: Soil

Date Received: 08/25/11 15:30

Percent Solids: 94.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total	Prep	EPA 3545		1.04	11H0145_P	08/31/11 09:05	DEB	TAL ANC
Total	Analysis	AK 102		1.00	U000657	09/01/11 13:28	DEB	TAL ANC
Total	Prep	*** DEFAULT PREP ***		1.00	11H0132_P	08/29/11 09:22	DEB	TAL ANC
Total	Analysis	TA-SOP		1.00	11H0132	08/30/11 09:45	JMG	TAL ANC
Total	Prep	AK101 Field Prep		0.316	11H0133_P	08/29/11 10:20	JMG	TAL ANC
Total	Analysis	AK101/EPA 8021B		33.3	U000640	08/29/11 23:17	JMG	TAL ANC

Lab Chronicle

Client: Montgomery Watson Harza
Project/Site: 1010430

TestAmerica Job ID: AUH0068

Client Sample ID: TNS-11 Dup

Lab Sample ID: AUH0068-05

Date Collected: 08/25/11 11:30

Matrix: Soil

Date Received: 08/25/11 15:30

Percent Solids: 95.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total	Prep	EPA 3545		1.08	11H0145_P	08/31/11 09:05	DEB	TAL ANC
Total	Analysis	AK 102		1.00	U000656	09/01/11 14:13	DEB	TAL ANC
Total	Prep	*** DEFAULT PREP ***		1.00	11H0132_P	08/29/11 09:22	DEB	TAL ANC
Total	Analysis	TA-SOP		1.00	11H0132	08/30/11 09:45	JMG	TAL ANC
Total	Prep	AK101 Field Prep		0.356	11H0133_P	08/29/11 10:20	JMG	TAL ANC
Total	Analysis	AK101/EPA 6021B		33.3	U000640	08/29/11 23:42	JMG	TAL ANC

Laboratory References:

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



Certification Summary

Client: Montgomery Watson Harza
Project/Site: 1010430

TestAmerica Job ID: AUH0068

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Anchorage	Alaska	Alaska UST	10	UST-067
TestAmerica Anchorage	Alaska	Slate Program	10	AK00975

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: Montgomery Watson Harza
Project/Site: 1010430

TestAmerica Job ID: AUH0068

Method	Method Description	Protocol	Laboratory
AK 102	Diesel Range Organics (C10-C25) per AK102		TAL ANC
TA-SOP	Physical Parameters by APHA/ASTM/EPA Methods		TAL ANC
AK101/EPA 8021B	Gasoline Range Organics (C6-C10) and BTEX per AK101		TAL ANC

Protocol References:

Laboratory References:

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

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Sample Summary

Client: Montgomery Watson Harza
Project/Site: 1010430

TestAmerica Job ID: AUH0068

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
AUH0068-01	Trip Blank	Soil	08/25/11 08:00	08/25/11 15:30
AUH0068-02	TP1@10'	Soil	08/25/11 09:30	08/25/11 15:30
AUH0068-03	TP-2@10'	Soil	08/25/11 10:00	08/25/11 15:30
AUH0068-04	TP-3@10'	Soil	08/25/11 11:00	08/25/11 15:30
AUH0068-05	TNS-11 Dup	Soil	08/25/11 11:30	08/25/11 15:30

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244
 11922 E. First Ave, Spokane, WA 99206-5302
 9405 SW Nimbus Ave, Beaverton, OR 97008-7145
 2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119

425-420-9200 FAX 420-9210
 509-924-9200 FAX 924-9290
 503-906-9200 FAX 906-9210
 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: AUH0068

CLIENT: <u>Resono</u>		INVOICE TO: <u>Anne Darter</u>		TURNAROUND REQUEST In Business Days * Organic & Inorganic Analyses 10 7 5 4 3 2 1 <1 STD. <input checked="" type="checkbox"/> 4 3 2 1 <1 STD. <input type="checkbox"/> OTHER Specify:			
REPORT TO: <u>MIKE ZIPER</u>		ADDRESS: <u>1835 S. BRADY ST.</u>					
ADDRESS: <u>ANCH AK 99508</u>		PHONE: <u>248-8883</u> FAX: <u>248-8894</u>		P.O. NUMBER: <u>1010430-010102</u>			
PROJECT NAME: <u>TNS-11</u>		PRESERVATIVE		* Turnaround Requests less than standard may incur Rush Charges.			
PROJECT NUMBER: <u>1010430</u>		REQUESTED ANALYSES					
SAMPLED BY: <u>LARSON</u>		METH Name		MATERIAL			
CLIENT SAMPLE IDENTIFICATION		SAMPLING DATE/TIME		AR 101		AK 102	
TRIP BLANK		8/25/11 0800		X			
TP 1 @ 9'		8/25/11 0930 0910		K X			
TP 1 @ 10'		8/25/11 0930		X X			
TP 2 @ 8'		8/25/11 0950		X X			
TP 2 @ 10'		8/25/11 1000		X X			
TP 3 @ 8.5'		8/25/11 1030		K X			
TP 3 @ 10'		8/25/11 1100		X X			
* TNS-11 DUP.		8/25/11 1130		X X			
RELEASED BY: <u>CAL LARSON</u>		FIRM: <u>MWH</u>		DATE: <u>8/25/11</u>		RECEIVED BY: <u>Patsilla Chu</u>	
PRINT NAME: <u>CAL LARSON</u>		FIRM: <u>MWH</u>		TIME: <u>1300</u>		PRINT NAME: <u>Patsilla Chu</u>	
RELEASED BY:		FIRM:		DATE:		RECEIVED BY:	
PRINT NAME:		FIRM:		DATE:		PRINT NAME:	
FIRM:		FIRM:		DATE:		FIRM:	
DATE:		DATE:		DATE:		DATE:	
TIME:		TIME:		TIME:		TIME:	
ADDITIONAL REMARKS:		ADDITIONAL REMARKS:		ADDITIONAL REMARKS:		ADDITIONAL REMARKS:	
* SLIGHT LEAK BAD LID? LINES N RED DO NOT ANALYZE		TEMP: <u>0.8°C</u>		PAGE <u>1</u> OF <u>1</u>			

09/07/2011

Test America Cooler Receipt Form

(Army Corps. Compliant)

WORK ORDER # ADH0068 CLIENT: MWH PROJECT: TNS-11

Date /Time Cooler Arrived 8/25/11 15:30 Cooler signed for by: Priscilla Chu (Print name)

Preliminary Examination Phase:

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

Cooler opened by (print) Priscilla Chu (sign) Priscilla Chu

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

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

2. Number of Custody Seals 2 Signed by see back Date 8/25/11

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? [X] Yes [] No Type of ice: [] blue ice [X] gel ice [] real ice [] dry ice Condition of ice: good

Temperature 0.8 °C (corrected) Thermometer # S

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

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

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 [] Yes [X] N/A

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

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

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

16. Are methanol soils immersed in methanol? [X] Yes [] Yes [] N/A

Log-in Phase:

Date of sample log-in 8/25/11

Samples logged in by (print) Sara Foster (sign) Sara Foster

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

AK-FORM-SPL-005 16 August 2011

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TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
325128

SIGNATURE _____
DATE _____
Custody Seal 8/25/11

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
325128

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
325127

SIGNATURE _____
DATE _____
Custody Seal 11/27/11

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
325127

Laboratory Data Review Checklist

Completed by:	Nicole Neuman		
Title:	Environmental Chemist	Date:	Sep 8, 2011
CS Report Name:	August 2011 Test Pits	Report Date:	Sep 7, 2011
Consultant Firm:	MWH		
Laboratory Name:	Test America, Inc.	Laboratory Report Number:	AUH0068
ADEC File Number:	2100.26.085	ADEC RecKey Number:	

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

Yes No NA (Please explain.) Comments:

All samples were received and analyzed by Test America, Inc. in Anchorage.

b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

Yes No NA (Please explain) Comments:

No samples were transferred to a network laboratory.

2. Chain of Custody (COC)

a. COC information completed, signed, and dated (including released/received by)?

Yes No NA (Please explain) Comments:

b. Correct analyses requested?

Yes No NA (Please explain) Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt ($4^{\circ} \pm 2^{\circ} \text{C}$)?

Yes No NA (Please explain) Comments:

Sample cooler was received at 0.8 degrees Celsius.

b. Sample preservation acceptable - acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes No NA (Please explain) Comments:

c. Sample condition documented - broken, leaking (Methanol), zero headspace (VOC vials)?

Yes No NA (Please explain) Comments:

Sample TNS 11 Dup was noted to have been leaking.

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 NA (Please explain) Comments:

No discrepancies.

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

Comments:

No impact expected. Leaking jar was maintained upright to minimize impact.

4. Case Narrative

a. Present and understandable?

Yes No NA (Please explain) Comments:

b. Discrepancies, errors or QC failures identified by the lab?

Yes No NA (Please explain) Comments:

c. Were all corrective actions documented?

Yes No NA (Please explain) Comments:

No corrective actions.

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

Comments:

N/A

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No NA (Please explain)

Comments:

b. All applicable holding times met?

Yes No NA (Please explain)

Comments:

c. All soils reported on a dry weight basis?

Yes No NA (Please explain)

Comments:

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

Yes No NA (Please explain)

Comments:

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

Comments:

N/A

6. QC Samples

a. Method Blank

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

Yes No NA (Please explain)

Comments:

Yes.

ii. All method blank results less than PQL?

Yes No NA (Please explain)

Comments:

iii. If above PQL, what samples are affected?

Comments:

N/A

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

Yes No NA (Please explain) Comments:

No affected samples.

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

N/A

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

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

Yes No NA (Please explain) Comments:

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

Yes No NA (Please explain) Comments:

No metals/inorganics samples were submitted to the laboratory.

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

Yes No NA (Please explain) Comments:

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

Yes No NA (Please explain) Comments:

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

Comments:

N/A

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

Yes No NA (Please explain) Comments:

No affected samples.

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

N/A

c. Surrogates - Organics Only

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

Yes No NA (Please explain) Comments:

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

Yes No NA (Please explain) Comments:

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

Yes No NA (Please explain) Comments:

No sample results have failed surrogate recoveries.

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

Comments:

N/A

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

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

Yes No NA (Please explain.) Comments:

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

Yes No NA (Please explain.) Comments:

Only one cooler was submitted to the laboratory.

iii. All results less than PQL?

Yes No NA (Please explain.) Comments:

iv. If above PQL, what samples are affected?

Comments:

N/A

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

Comments:

N/A

e. Field Duplicate

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

Yes No NA (Please explain.) Comments:

ii. Submitted blind to lab?

Yes No NA (Please explain.) Comments:

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

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Yes No NA (Please explain.) Comments:

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

Yes No NA (Please explain.) Comments:

RPDs were less than specified DQOs.

f. Decontamination or Equipment Blank (if applicable)

Yes No NA (Please explain)

Comments:

N/A. No decontamination or equipment blank submitted to the laboratory.

i. All results less than PQL?

Yes No NA (Please explain)

Comments:

No decontamination or equipment blank submitted to the laboratory.

ii. If above PQL, what samples are affected?

Comments:

N/A

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

Comments:

N/A

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

a. Defined and appropriate?

Yes No NA (Please explain)

Comments:

Reset Form



Client: MWH
 Project: Tesoro TNS II PO#1010430.010102
 Work Order: A33230

Particle Size Distribution

ASTM D422

Location: TP 1 10'

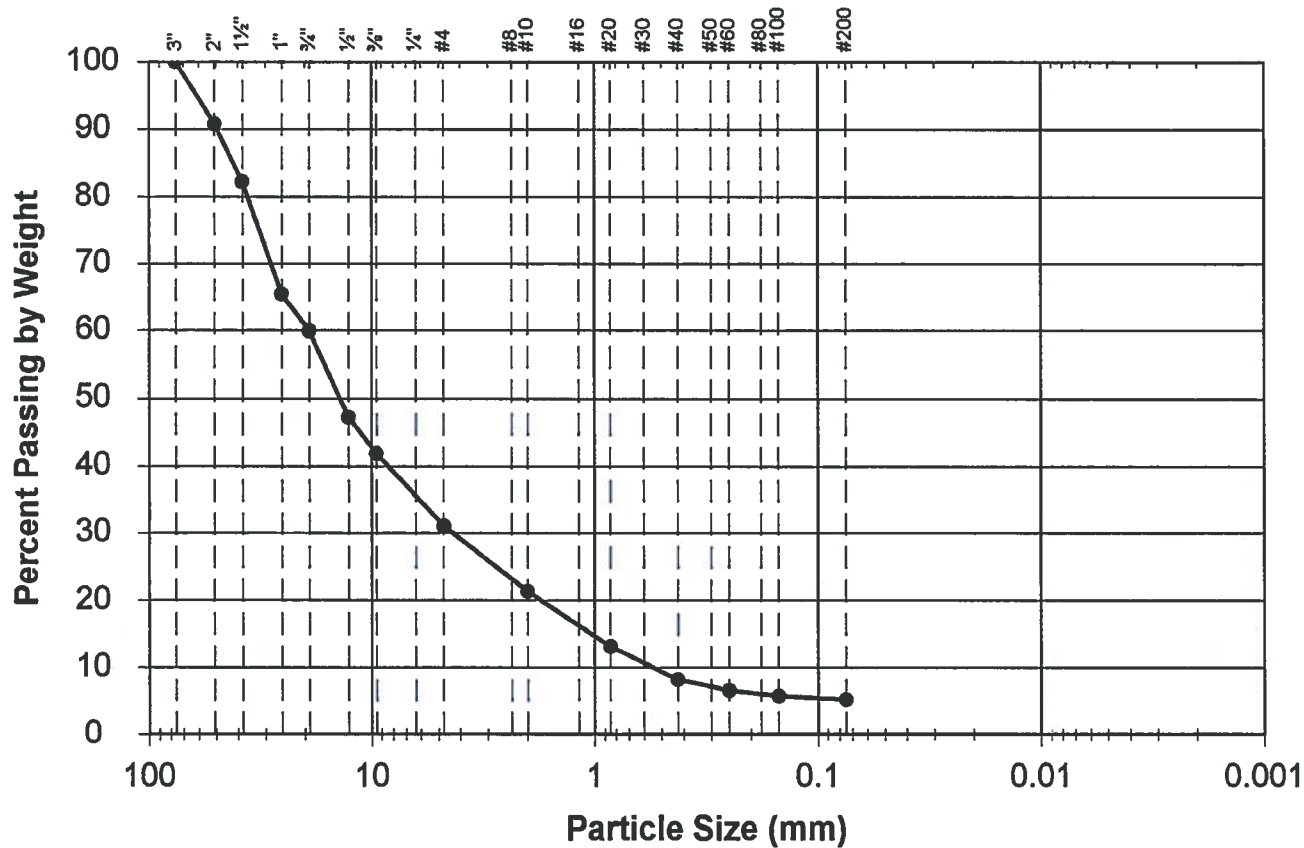
Lab Number 2011-1179

Received 8/25/2011

Reported 8/29/2011

Engineering Classification: Well Graded Gravel with Silt and Sand, GW-GM

Frost Classification: Not Measured



Size	Passing	Specification
3"	100%	
2"	91%	
1½"	82%	
1"	65%	
¾"	60%	
½"	47%	
⅜"	42%	
#4	31%	
Total Weight of Coarse Fraction: 10887g		
#10	21%	
#20	13%	
#40	8%	
#60	7%	
#100	6%	
#200	5.2%	
Total Weight of Fine Fraction: 402.5g		



Client: MWH
 Project: Tesoro TNS II PO#1010430.010102
 Work Order: A33230

Particle Size Distribution

ASTM D422

Location: TP2 10'

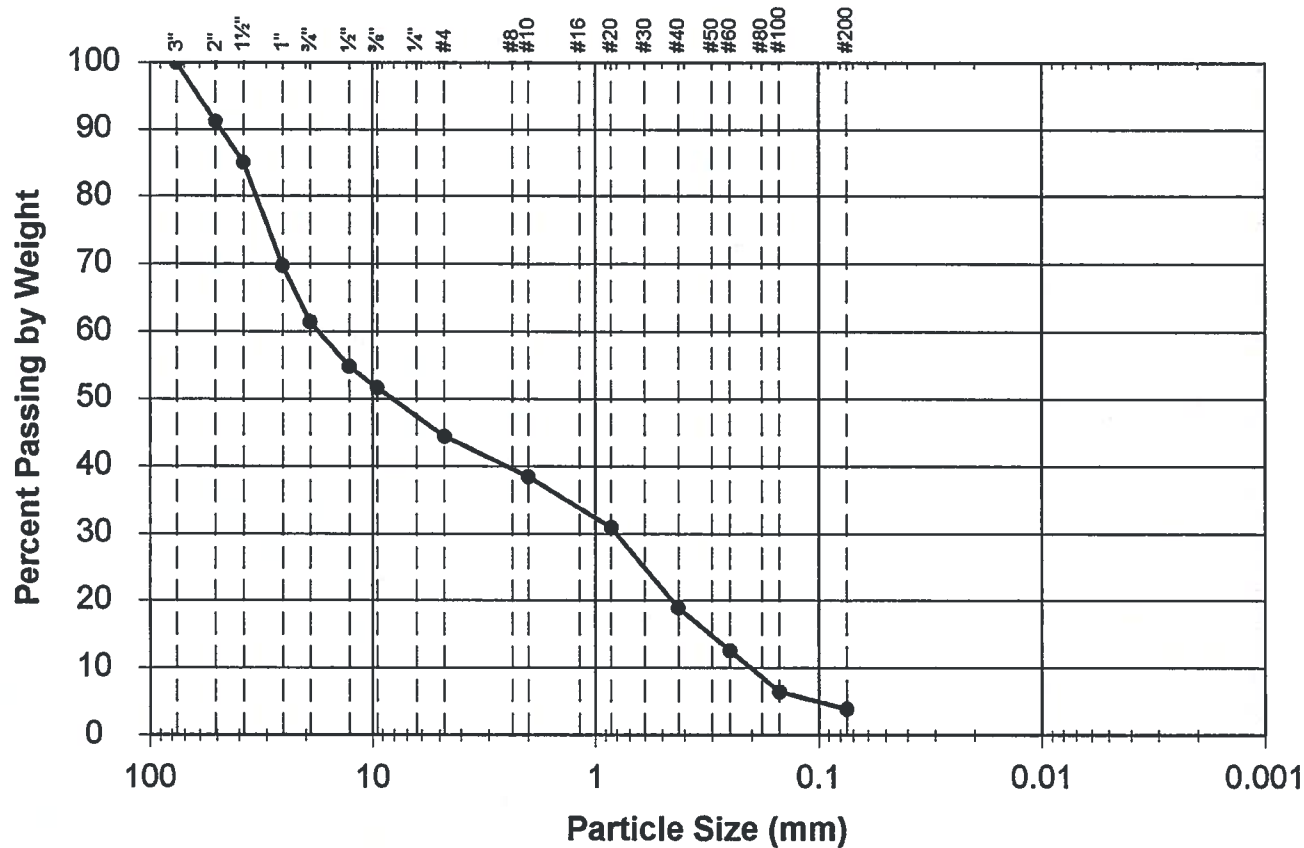
Lab Number 2011-1180

Received 8/25/2011

Reported 8/29/2011

Engineering Classification: Poorly Graded Gravel with Sand, GP

Frost Classification: Not Measured



Size	Passing	Specification
3"	100%	
2"	91%	
1 1/2"	85%	
1"	70%	
3/4"	61%	
1/2"	55%	
3/8"	52%	
#4	44%	
Total Weight of Coarse Fraction: 9991g		
#10	38%	
#20	31%	
#40	19%	
#60	13%	
#100	6%	
#200	3.9%	
Total Weight of Fine Fraction: 454.8g		



Client: MWH
 Project: Tesoro TNS II PO#1010430.010102
 Work Order: A33230

Particle Size Distribution

ASTM D422

Location: TP3 10'

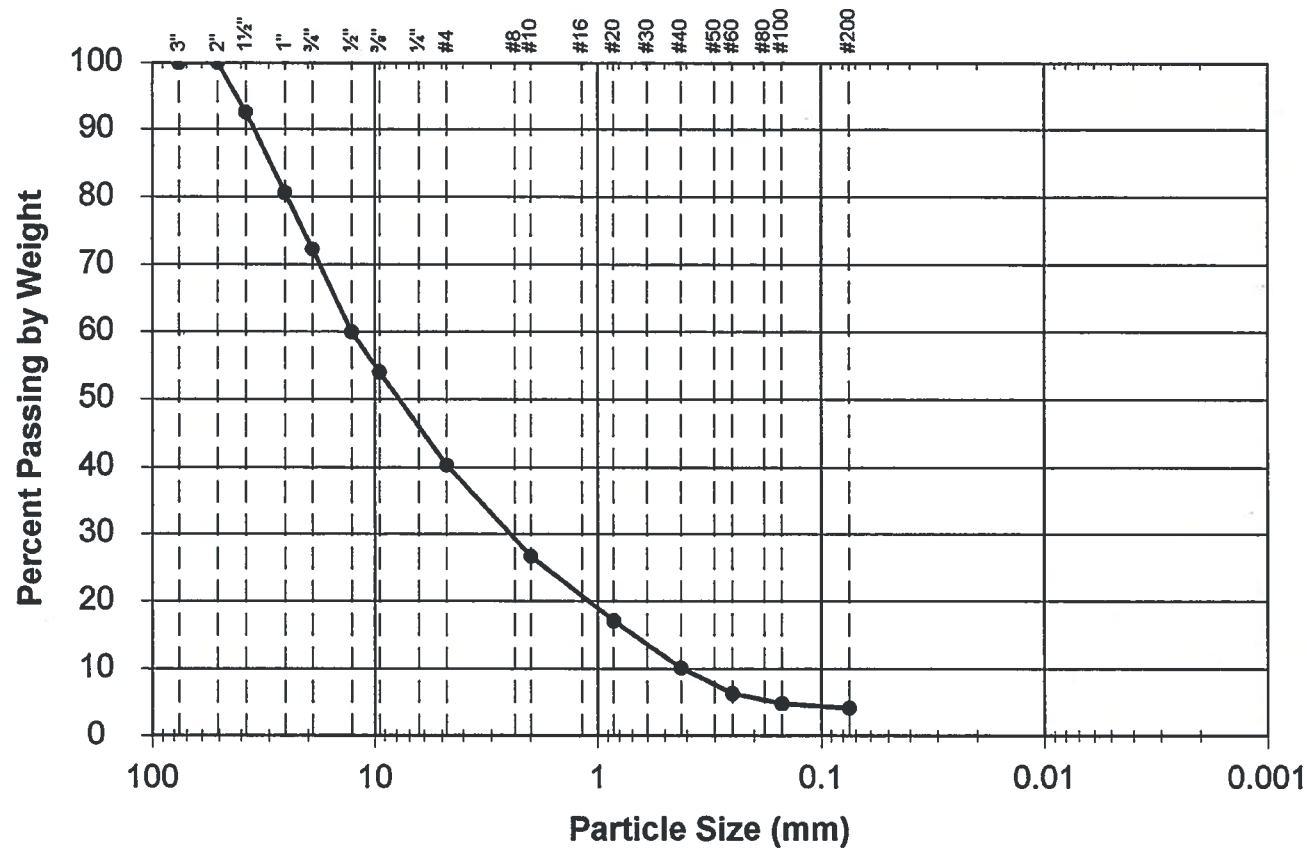
Lab Number 2011-1181

Received 8/25/2011

Reported 8/29/2011

Engineering Classification: Well Graded Gravel with Sand, GW

Frost Classification: Not Measured



Size	Passing	Specification
3"	100%	
2"	100%	
1 1/2"	93%	
1"	81%	
3/4"	72%	
1/2"	60%	
3/8"	54%	
#4	40%	
Total Weight of Coarse Fraction: 8778g		
#10	27%	
#20	17%	
#40	10%	
#60	6%	
#100	5%	
#200	4.2%	
Total Weight of Fine Fraction: 462.7g		