

SITE INFORMATION

Report Type: Closure Report

General Site Information:

Site:	Parkway Delaware Unit 7/8 Tank Battery					
Company:	SM Energy Company					
Section, Township and Range						
Lease Number:	NMNM-88491X					
County:	Eddy County					
GPS:	32.615214° N			104.035033° W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	Northeast of Carlsbad, from the intersection of 360 and CR235, head WNW on CR235 for 4.8 miles and turn south. Travel the lease road for .6 miles, and turn south after the curve. Continue south for .8 miles and turn west. Travel .2 miles to tank battery on the north side of the road.					

Release Data:

Date Released:	8/1/2012
Type Release:	Produced Water
Source of Contamination:	Transfer pump failure
Fluid Released:	50 bbls
Fluids Recovered:	25 bbls

Official Communication:

Name:	Vickie Martinez	Aaron Hale
Company:	SM Energy Company	Tetra Tech
Address:	3300 N A St. Suite 200	1910 N. Big Spring
P.O. Box		
City:	Midland Texas, 79705	Midland, Texas
Phone number:	(432) 688-1709	(432) 682-4559
Fax:	(432) 688-1701	
Email:	vmartinez@sm-energy.com	aaron.hale@tetrattech.com

Ranking Criteria

Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	
>100 ft.	0	0
Wellhead Protection:	Ranking Score	Site Data
Water Source <1,000 ft., Private <200 ft.	20	
Water Source >1,000 ft., Private >200 ft.	0	0
Surface Body of Water:	Ranking Score	Site Data
<200 ft.	20	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0
Total Ranking Score:		0

Acceptable Soil RRAL (mg/kg)		
Benzene	Total BTEX	TPH
10	50	5,000



December 26, 2012

Mr. Mike Bratcher
Environmental Engineer
Oil Conservation Division, District 2
811 S. First Street
Artesia, New Mexico 88210

**Re: Closure Report for SM Energy Company
Parkway Delaware Unit Tract 7/8 Tank Battery
Section 35, Township 19S, Range 29E
Eddy County, New Mexico**

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by SM Energy Company (SM Energy) to assess a spill from Parkway Delaware Unit Tract 7/8 (PDU #7/8) tank battery, located in Section 35, Township 19S, Range 29E, Eddy County, New Mexico (Site). The spill site coordinates are N 32.615214°, W 104.035033°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico Oil Conservation Division (NMOCD) Form C-141 Initial Report, the leak was discovered on August 1, 2012. The spill from the salt water transfer pump released approximately fifty (50) barrels (bbls) of produced water. SM Energy was able to recover approximately twenty five (25) bbls of produced water with a vacuum truck. To alleviate the problem, SM Energy repaired the transfer pump.

The spill impacted an area of the interior perimeter of the tank battery dike, measuring approximately 10-13' wide and 65' X 95'. The spill areas are shown on Figure 3. The initial Form C-141 is enclosed in Appendix A.

Groundwater

The New Mexico State Engineers Well Report listed one well in Section 35 with an average depth of 110' and wells in Sections 34 and 36 with reported depths of 60' and 115', respectively. The water well data is shown in Appendix B.

Tetra Tech

1910 North Big Spring, Midland, TX 79705

Tel 432.682.4559

Fax 432.682.3946

www.tetratech.com



Previously, Tetra Tech personnel supervised the installation of a temporary well (TMW-1) in Section 35 to establish groundwater quality and depth in this section. During the installation, the well drilled dry. The well was drilled through fine grain sand with gypsum layers and red shale to a total depth of 140', to the top of a black and gray shale formation (blue shale). The well was measured two days later and showed a depth to groundwater of 121 TOC.

Regulatory

A risk-based evaluation was performed for the Site in accordance with the NMOCD Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

Soil Assessment

On August 9, 2012, Tetra Tech personnel inspected and sampled the spill area. A total of six (6) auger holes (AH-1 through AH-6) were installed using a stainless steel hand auger to assess the impacted areas. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Analytical Results

Referring to Table 1, all of the auger hole samples were below the RRAL for TPH and BTEX, with the exception of AH-2. Auger hole AH-2 showed TPH a concentration of 11,242 mg/kg (0-1'). The TPH concentrations declined below the RRAL at 1-1.5' below surface.

A shallow chloride impact was detected in the areas of AH-1, AH-2, and AH-5 and significantly declined at 1.0' to 3.5' below surface. The chloride impact was deeper in the areas of AH-4 and AH-6 showing chloride concentrations of 1,580 mg/kg (6-6.5') and 1,700 mg/kg (10-10.5').

Remediation and Conclusion

On December 2, 2012, Tetra Tech personnel supervised the excavation of the spill area. The spill foot print and final excavation depths of



TETRA TECH

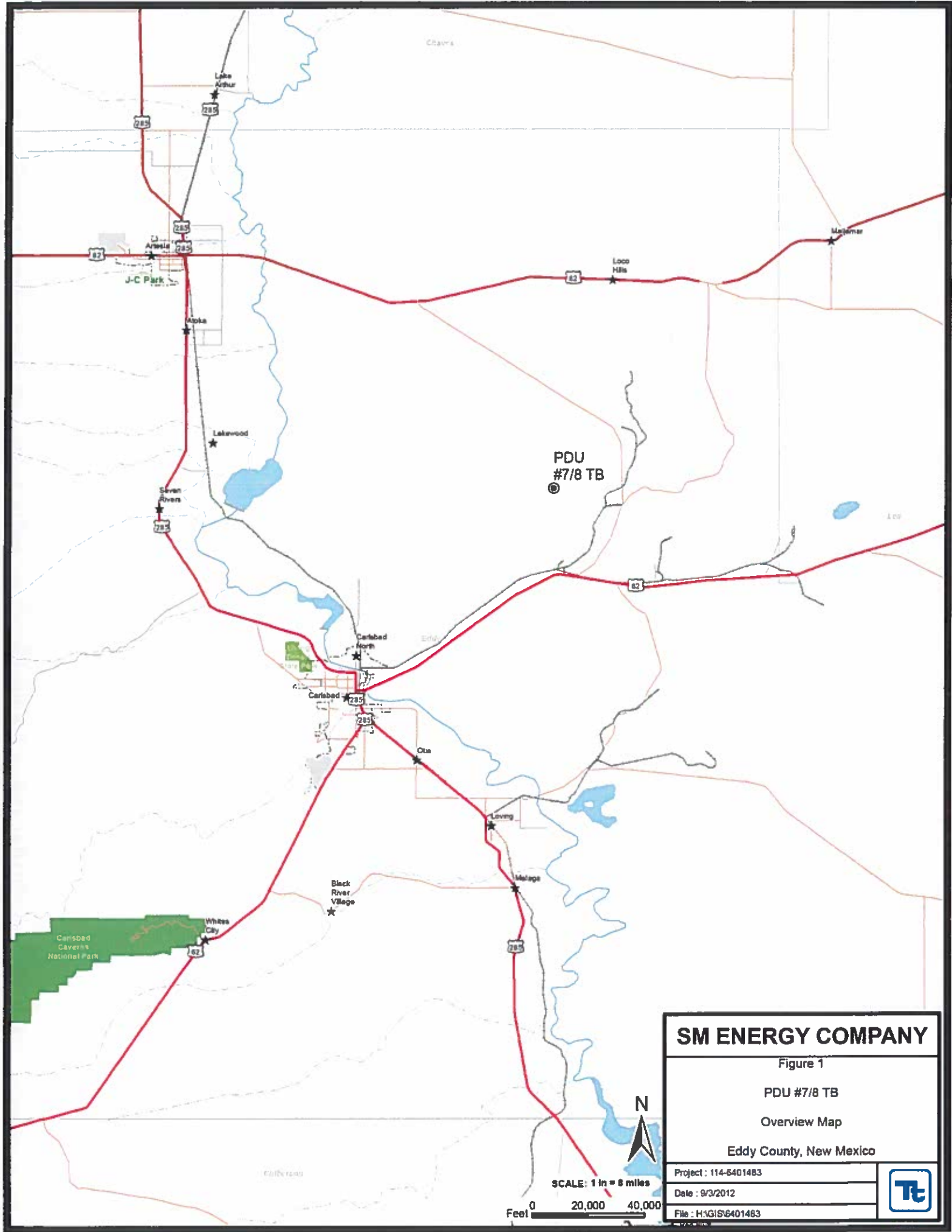
the soil remediation were met as stated in the approved work plan. In order to remove the elevated chloride concentrations, the proposed excavation depths ranged from 1.0' to 3.0' below surface. Additionally the areas of AH-1, AH-4, AH-5 and AH-6 had a clay cap installed at approximately 3.0' below surface. Approximately 80 cubic yards were removed and disposed of at the Lea Land disposal facility. The excavated area was then backfilled with clean material to grade.

Based on the remediation activities performed at this location, SM Energy requests closure for this site. The C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the remediation activities performed at the site, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH, INC

Tom Elliott
Staff Scientist

cc: SM Energy Company – File Copy
BLM – Jim Amos



SM ENERGY COMPANY

Figure 1

PDU #7/8 TB

Overview Map

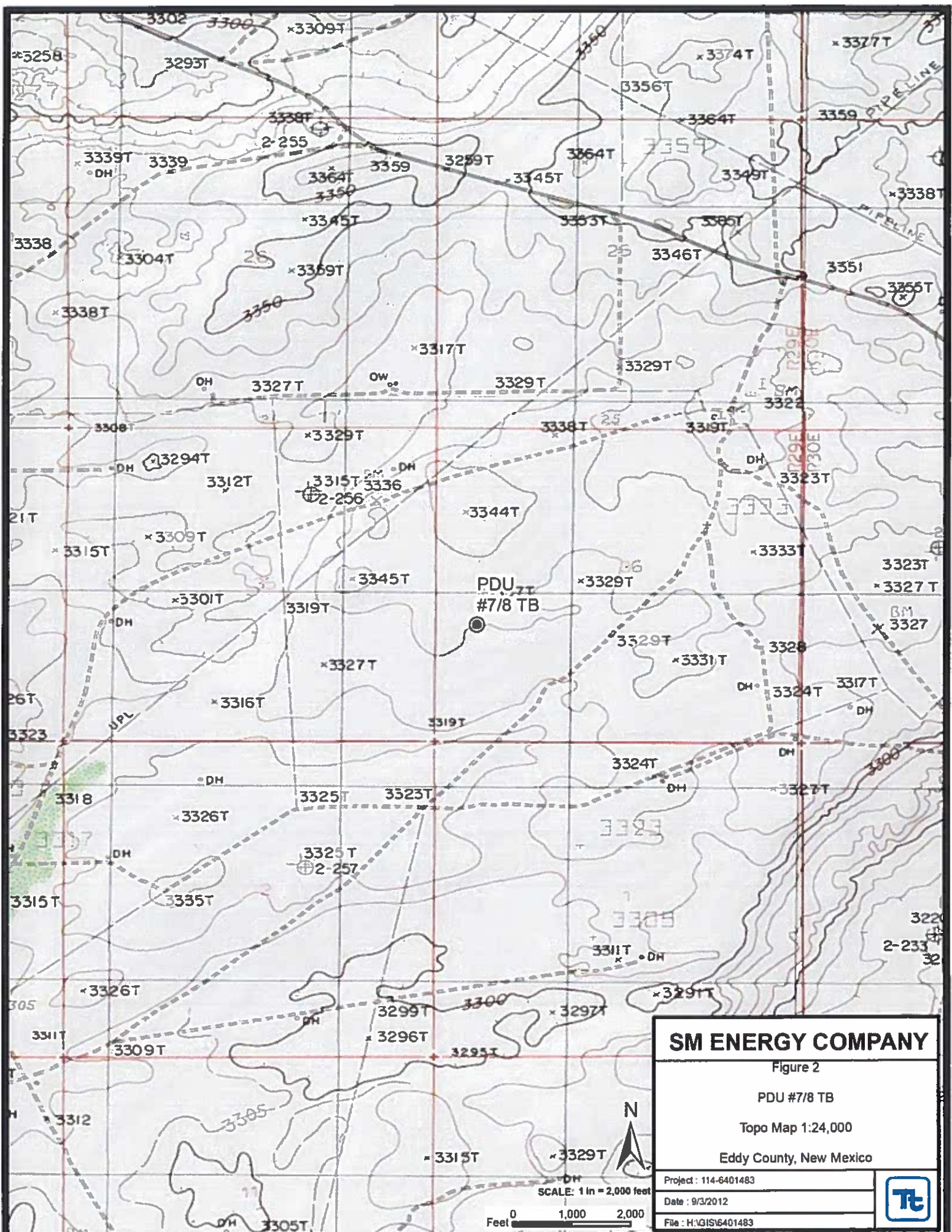
Eddy County, New Mexico

Project : 114-6401463

Date : 9/3/2012

File : H:\GIS\6401463





SM ENERGY COMPANY

Figure 2

PDU #7/8 TB

Topo Map 1:24,000

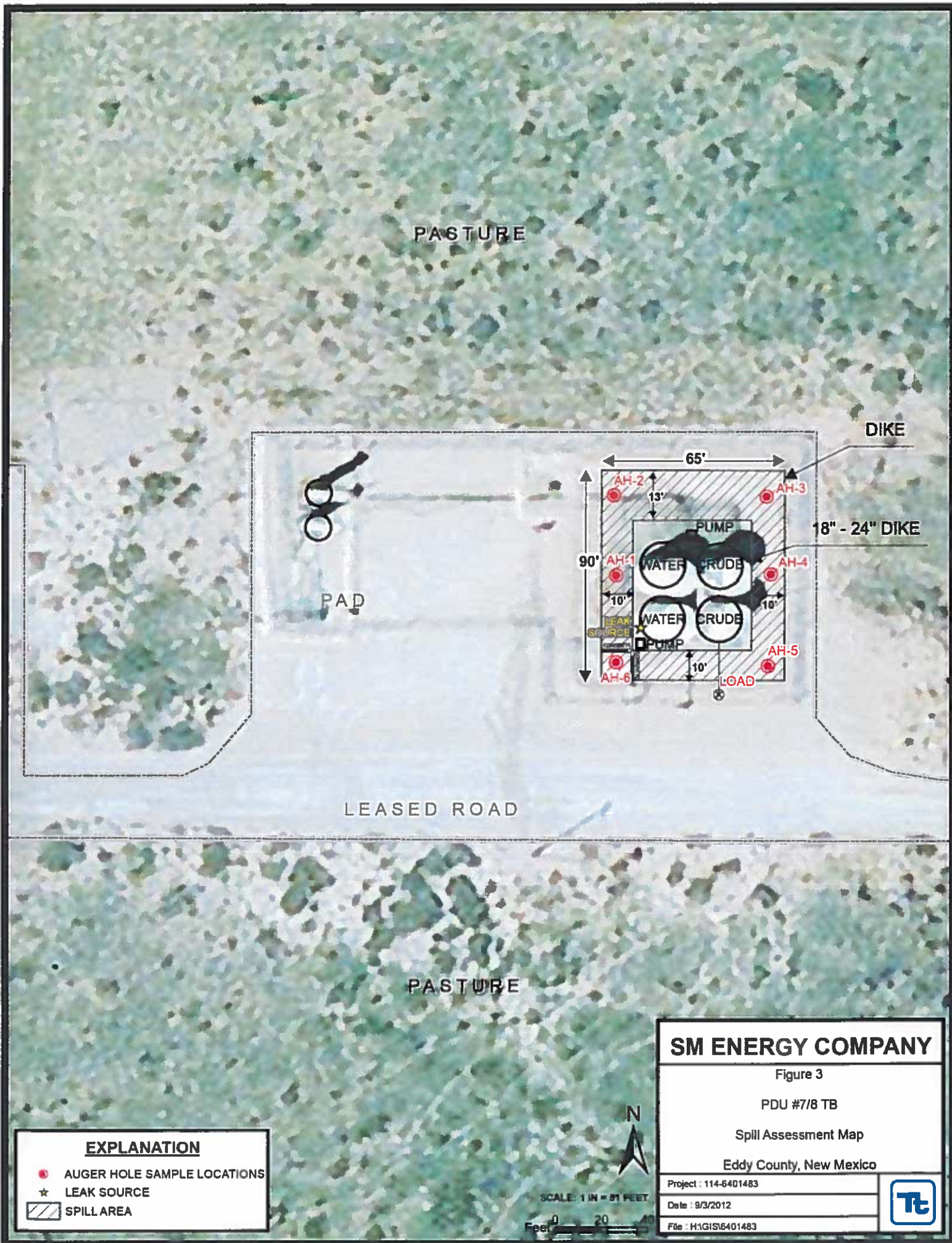
Eddy County, New Mexico

Project : 114-6401483

Date : 9/3/2012

File : H:\GIS\6401483





EXPLANATION

- AUGER HOLE SAMPLE LOCATIONS
- ★ LEAK SOURCE
- SPILL AREA

SM ENERGY COMPANY

Figure 3

PDU #7/8 TB

Spill Assessment Map

Eddy County, New Mexico

Project : 114-6401483

Date : 9/3/2012

File : H:\GIS\6401483



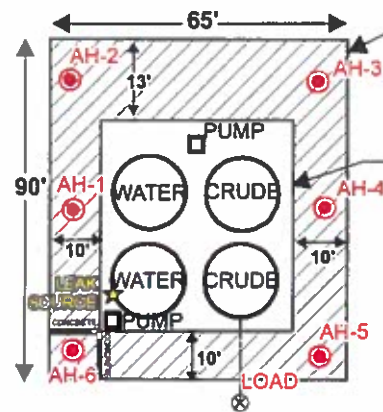
PASTURE

PAD

LEASED ROAD

DIKE

18" - 24" DIKE



PASTURE

EXPLANATION

- AUGER HOLE SAMPLE LOCATIONS
- ★ LEAK SOURCE
- ▨ SPILL AREA



SCALE: 1 IN = 51 FEET

Feet 0 20 40

SM ENERGY COMPANY

Figure 3

PDU #7/8 TB

Spill Assessment Map

Eddy County, New Mexico

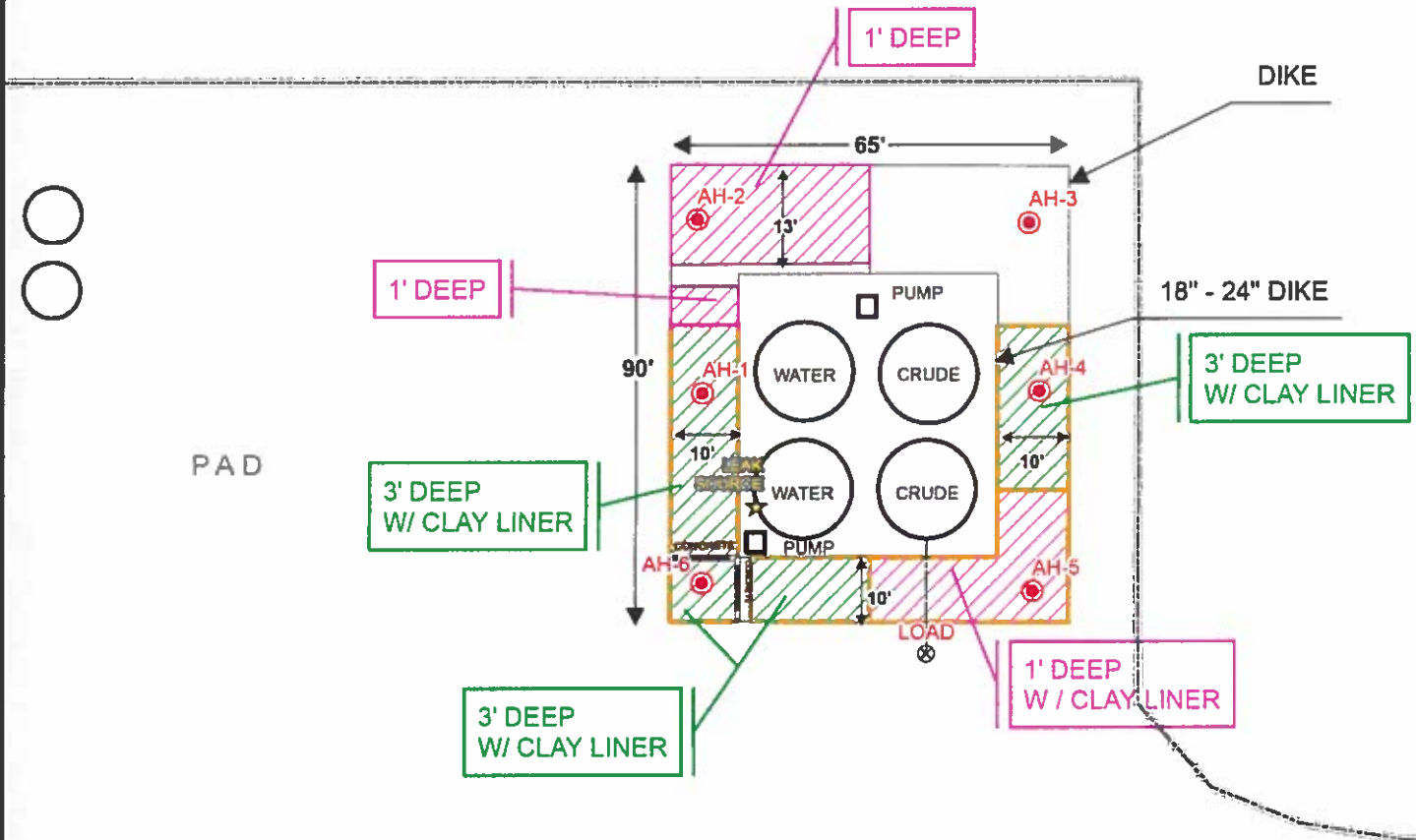
Project: 114-6401483

Date: 9/3/2012

File: H:\GIS\6401483



PASTURE



LEASED ROAD

PASTURE

EXPLANATION

- AUGER HOLE SAMPLE LOCATIONS
- ★ LEAK SOURCE
- CLAY LINER
- EXCAVATED AREAS



SCALE: 1 IN = 38 FEET
 Feet 0 10 20

SM ENERGY COMPANY

Figure 4

PDU #7/8 TB

Excavation Areas & Depths Map

Eddy County, New Mexico

Project : 114-6401483

Date : 9/3/2012

File : H:\GIS\6401483



TABLES

Eddy County, New Mexico

Table 1
SM Energy
Parkway Delaware Unit 7 / 8
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
AH-6	8/9/2012	0-1		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	13,000
	"	1-1.5		X	-	-	-	-	-	-	-	-	6,820
	"	2-2.5		X	-	-	-	-	-	-	-	-	5,650
	"	3-3.5	X		-	-	-	-	-	-	-	-	169
	"	4-4.5	X		-	-	-	-	-	-	-	-	210
	"	5-5.5	X		-	-	-	-	-	-	-	-	3,190
	"	6-6.5	X		-	-	-	-	-	-	-	-	5,020
	"	7-7.5	X		-	-	-	-	-	-	-	-	2,560
	"	8-8.5	X		-	-	-	-	-	-	-	-	2,780
	"	9-9.5	X		-	-	-	-	-	-	-	-	975
	"	10-10.5	X		-	-	-	-	-	-	-	-	1,700

(--) Not Analyzed

Clay Cap

Excavation Material



PHOTOGRAPHS

SM Energy Company
PDU 7/8
Eddy County, New Mexico



TETRA TECH



View East – Excavation of AH-6.



View East – Excavation of AH-2.

SM Energy Company
PDU 7/8
Eddy County, New Mexico



TETRA TECH



View North— Excavation of AH-1.



View Southeast – Excavation of AH-4.

SM Energy Company
PDU 7/8
Eddy County, New Mexico



TETRA TECH



View East – Backfill of AH-5 and AH-6 excavations.



View South – Backfill of AH-1 Excavation.

APPENDIX A

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	SM ENERGY COMPANY	Contact	VICKIE MARTINEZ
Address	3300 N "A" ST BLDG 7-200 MIDLAND, TX 79705	Telephone No.	(432)688-1709
Facility Name	PDU TRACT 7/8 30-015-26012	Facility Type	BATTERY

Surface Owner	BUREAU OF LAND MANAGEMENT	Mineral Owner	BUREAU OF LAND MANAGEMENT	NPI No.	NMNM88491X
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	35	19S	29E	660	SOUTH	810	EAST	EDDY

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release	PRODUCED WATER	Volume of Release	50 BBLS	Volume Recovered	25 BBLS
Source of Release	SALTWATER TRANSFER PUMP	Date and Hour of Occurrence	8/1/12 9:48 AM	Hour of Discovery	SAME
Was Immediate Notice Given?	☒ Yes ☐ No ☐ Not Required	If YES, To Whom?	JIM AMOS WITH BLM		
By Whom?	BILL HEARNE	Date and Hour	8/1/12 9:48 AM		
Was a Watercourse Reached?	☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

BLEW 3/16" PLUG FROM STUFFING BOX PORT ON PACO 1 1/2" X 1" WATER TRANSFER PUMP. SM ENERGY WILL BE TURNING THIS OVER TO TETRA TECH FOR FURTHER EVALUATION.

Describe Area Affected and Cleanup Action Taken.*

SPILL AREA: 8'X145' = 1160 SQ FT

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION		
Printed Name: VICKIE MARTINEZ	Approved by Environmental Specialist:		
Title: ENGINEER TECH II	Approval Date:	Expiration Date:	
E-mail Address: VMARTINEZ@SM-ENERGY.COM	Conditions of Approval:		Attached ☐
Date: 08/02/2012	Phone: (432)688-1709		

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate
District Office in accordance
with Rule 116 on back
side of form

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	SM Energy Company	Contact	Vickie Martinez
Address	3300 N "A" ST BLDG 7-200 Midland, TX 79705	Telephone No.	(432) 688-1709
Facility Name	PDU Tract 7/8 30-015-26012	Facility Type	Battery

Surface Owner: BLM	Mineral Owner: BLM	Lease No. (API#) NMNM88491X
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	35	19S	29E	660	South	810	East	Eddy

Latitude N 32.615214° Longitude W 104.035033°

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 50 bbls	Volume Recovered 25 bbls
Source of Release: Produced Water Transfer Pump	Date and Hour of Occurrence 8/1/2012 6:00 A.M.	Date and Hour of Discovery Same
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Jim Amos - BLM	
By Whom? Bill Hearne	Date and Hour 8/1/2012 9:48 P.M.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

A 3/16 plug blew from the stuffing box port on a Paco 1 1/2" x 1" water transfer pump.

Describe Area Affected and Cleanup Action Taken.*

Tetra Tech personnel inspected the site and collected samples to define spills extent. Soil that exceeded RRAL was removed and hauled away for proper disposal. The site was then brought up to surface grade with clean backfill material. Tetra Tech prepared a closure report and submitted to NMOCD for review.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

OIL CONSERVATION DIVISION

Signature:

Printed Name: Aaron Hale

Title: Project Manager

E-mail Address: Aaron.Hale@TetraTech.com

Date: Phone: (432) 682-4559

Approved by District Supervisor:

Approval Date:

Expiration Date:

Conditions of Approval:

Attached ☐

* Attach Additional Sheets If Necessary

APPENDIX B



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW#### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Code	Subbasin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
CP 00681			ED	1	1	3	34	19S	29E	587230	3609127*			
CP 00703			ED		4	1	36	19S	29E	590945	3609441*	225	115	110
CP 00739			ED	3	4	4	35	19S	29E	589246	3608217	200	110	90
CP 00741			ED	1	3	2	34	19S	29E	588030	3609533*	230	60	170

Average Depth to Water: 95 feet

Minimum Depth: 60 feet

Maximum Depth: 115 feet

Record Count: 4

PLSS Search:

Section(s): 34-36

Township: 19S

Range: 29E

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

APPENDIX C

Summary Report

Aaron Hale
Tetra Tech
1910 N. Big Spring Street
Midland, TX 79705

Report Date: August 23, 2012

Work Order: 12081031



Project Location: Eddy Co., NM
Project Name: SM Energy/PDU #7/8
Project Number: 114-6401483

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
306463	AH-1 (0-1')	soil	2012-08-09	00:00	2012-08-10
306464	AH-1 (1-1.5')	soil	2012-08-09	00:00	2012-08-10
306465	AH-1 (2-2.5')	soil	2012-08-09	00:00	2012-08-10
306466	AH-1 (3-3.5')	soil	2012-08-09	00:00	2012-08-10
306467	AH-1 (4-4.5')	soil	2012-08-09	00:00	2012-08-10
306468	AH-1 (5-5.5')	soil	2012-08-09	00:00	2012-08-10
306469	AH-1 (6-6.5')	soil	2012-08-09	00:00	2012-08-10
306470	AH-2 (0-1')	soil	2012-08-09	00:00	2012-08-10
306471	AH-2 (1-1.5')	soil	2012-08-09	00:00	2012-08-10
306472	AH-2 (2-2.5')	soil	2012-08-09	00:00	2012-08-10
306473	AH-2 (3-3.5')	soil	2012-08-09	00:00	2012-08-10
306474	AH-2 (4-4.5')	soil	2012-08-09	00:00	2012-08-10
306475	AH-2 (5-5.5')	soil	2012-08-09	00:00	2012-08-10
306476	AH-3 (0-1')	soil	2012-08-09	00:00	2012-08-10
306477	AH-3 (1-1.5')	soil	2012-08-09	00:00	2012-08-10
306478	AH-3 (2-2.5')	soil	2012-08-09	00:00	2012-08-10
306479	AH-4 (0-1')	soil	2012-08-09	00:00	2012-08-10
306480	AH-4 (1-1.5')	soil	2012-08-09	00:00	2012-08-10
306481	AH-4 (2-2.5')	soil	2012-08-09	00:00	2012-08-10
306482	AH-4 (3-3.5')	soil	2012-08-09	00:00	2012-08-10
306483	AH-4 (4-4.5')	soil	2012-08-09	00:00	2012-08-10
306484	AH-4 (5-5.5')	soil	2012-08-09	00:00	2012-08-10
306485	AH-4 (6-6.5')	soil	2012-08-09	00:00	2012-08-10
306486	AH-4 (7-7.5')	soil	2012-08-09	00:00	2012-08-10
306487	AH-5 (0-1')	soil	2012-08-09	00:00	2012-08-10
306488	AH-5 (1-1.5')	soil	2012-08-09	00:00	2012-08-10
306489	AH-5 (2-2.5')	soil	2012-08-09	00:00	2012-08-10
306490	AH-5 (3-3.5')	soil	2012-08-09	00:00	2012-08-10
306491	AH-5 (4-4.5')	soil	2012-08-09	00:00	2012-08-10
306492	AH-5 (5-5.5')	soil	2012-08-09	00:00	2012-08-10

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
306493	AH-6 (0-1')	soil	2012-08-09	00:00	2012-08-10
306494	AH-6 (1-1.5')	soil	2012-08-09	00:00	2012-08-10
306495	AH-6 (2-2.5')	soil	2012-08-09	00:00	2012-08-10
306496	AH-6 (3-3.5')	soil	2012-08-09	00:00	2012-08-10
306497	AH-6 (4-4.5')	soil	2012-08-09	00:00	2012-08-10
306498	AH-6 (5-5.5')	soil	2012-08-09	00:00	2012-08-10
306499	AH-6 (6-6.5')	soil	2012-08-09	00:00	2012-08-10
306500	AH-6 (7-7.5')	soil	2012-08-09	00:00	2012-08-10
306501	AH-6 (8-8.5')	soil	2012-08-09	00:00	2012-08-10
306502	AH-6 (9-9.5')	soil	2012-08-09	00:00	2012-08-10
306503	AH-6 (10-10.5')	soil	2012-08-09	00:00	2012-08-10

Sample - Field Code	BTEX				TPH DRO - NEW	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
306463 - AH-1 (0-1')	<0.0200	<0.0200	<0.0200	0.0214	<50.0	<4.00 _{QC}
306470 - AH-2 (0-1')	<0.200 ¹	<0.200	<0.200	0.484	10900	342
306471 - AH-2 (1-1.5')					103 _{QC, QC}	49.6
306476 - AH-3 (0-1')	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00 _{QC}
306479 - AH-4 (0-1')	<0.100 ²	<0.100	<0.100	<0.100	<50.0	<8.00
306487 - AH-5 (0-1')	<0.0400 ³	<0.0400	0.0541	0.110	<50.0	<8.00
306493 - AH-6 (0-1')	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00

Sample: 306463 - AH-1 (0-1')

Param	Flag	Result	Units	RL
Chloride		9740	mg/Kg	4

Sample: 306464 - AH-1 (1-1.5')

Param	Flag	Result	Units	RL
Chloride		1650	mg/Kg	4

Sample: 306465 - AH-1 (2-2.5')

Param	Flag	Result	Units	RL
Chloride		4990	mg/Kg	4

Sample: 306466 - AH-1 (3-3.5')

¹Sample dilution due to hydrocarbons.²Sample dilution due to hydrocarbons.³Sample dilution due to hydrocarbons.

Param	Flag	Result	Units	RL
Chloride		3940	mg/Kg	4

Sample: 306467 - AH-1 (4-4.5')

Param	Flag	Result	Units	RL
Chloride		607	mg/Kg	4

Sample: 306468 - AH-1 (5-5.5')

Param	Flag	Result	Units	RL
Chloride		269	mg/Kg	4

Sample: 306469 - AH-1 (6-6.5')

Param	Flag	Result	Units	RL
Chloride		896	mg/Kg	4

Sample: 306470 - AH-2 (0-1')

Param	Flag	Result	Units	RL
Chloride		1820	mg/Kg	4

Sample: 306471 - AH-2 (1-1.5')

Param	Flag	Result	Units	RL
Chloride		64.7	mg/Kg	4

Sample: 306472 - AH-2 (2-2.5')

Param	Flag	Result	Units	RL
Chloride		100	mg/Kg	4

Sample: 306473 - AH-2 (3-3.5')

Param	Flag	Result	Units	RL
Chloride		307	mg/Kg	4

Sample: 306474 - AH-2 (4-4.5')

Param	Flag	Result	Units	RL
Chloride		156	mg/Kg	4

Sample: 306475 - AH-2 (5-5.5')

Param	Flag	Result	Units	RL
Chloride		156	mg/Kg	4

Sample: 306476 - AH-3 (0-1')

Param	Flag	Result	Units	RL
Chloride		116	mg/Kg	4

Sample: 306477 - AH-3 (1-1.5')

Param	Flag	Result	Units	RL
Chloride		277	mg/Kg	4

Sample: 306478 - AH-3 (2-2.5')

Param	Flag	Result	Units	RL
Chloride		247	mg/Kg	4

Sample: 306479 - AH-4 (0-1')

Param	Flag	Result	Units	RL
Chloride		2390	mg/Kg	4

Sample: 306480 - AH-4 (1-1.5')

Param	Flag	Result	Units	RL
Chloride		876	mg/Kg	4

Sample: 306481 - AH-4 (2-2.5')

Param	Flag	Result	Units	RL
Chloride		1560	mg/Kg	4

Sample: 306482 - AH-4 (3-3.5')

Param	Flag	Result	Units	RL
Chloride		1990	mg/Kg	4

Sample: 306483 - AH-4 (4-4.5')

Param	Flag	Result	Units	RL
Chloride		1520	mg/Kg	4

Sample: 306484 - AH-4 (5-5.5')

Param	Flag	Result	Units	RL
Chloride		1530	mg/Kg	4

Sample: 306485 - AH-4 (6-6.5')

Param	Flag	Result	Units	RL
Chloride		1580	mg/Kg	4

Sample: 306486 - AH-4 (7-7.5')

Param	Flag	Result	Units	RL
Chloride		46.5	mg/Kg	4

Sample: 306487 - AH-5 (0-1')

Param	Flag	Result	Units	RL
Chloride		2140	mg/Kg	4

Sample: 306488 - AH-5 (1-1.5')

Param	Flag	Result	Units	RL
Chloride		<20.0	mg/Kg	4

Sample: 306489 - AH-5 (2-2.5')

Param	Flag	Result	Units	RL
Chloride		<20.0	mg/Kg	4

Sample: 306490 - AH-5 (3-3.5')

Param	Flag	Result	Units	RL
Chloride		<20.0	mg/Kg	4

Sample: 306491 - AH-5 (4-4.5')

Param	Flag	Result	Units	RL
Chloride		274	mg/Kg	4

Sample: 306492 - AH-5 (5-5.5')

Param	Flag	Result	Units	RL
Chloride		910	mg/Kg	4

Sample: 306493 - AH-6 (0-1')

Param	Flag	Result	Units	RL
Chloride		13000	mg/Kg	4

Sample: 306494 - AH-6 (1-1.5')

Param	Flag	Result	Units	RL
Chloride		6820	mg/Kg	4

Sample: 306495 - AH-6 (2-2.5')

Param	Flag	Result	Units	RL
Chloride		5650	mg/Kg	4

Sample: 306496 - AH-6 (3-3.5')

Param	Flag	Result	Units	RL
Chloride		169	mg/Kg	4

Sample: 306497 - AH-6 (4-4.5')

Param	Flag	Result	Units	RL
Chloride		210	mg/Kg	4

Sample: 306498 - AH-6 (5-5.5')

Param	Flag	Result	Units	RL
Chloride		3190	mg/Kg	4

Sample: 306499 - AH-6 (6-6.5')

Param	Flag	Result	Units	RL
Chloride		5020	mg/Kg	4

Sample: 306500 - AH-6 (7-7.5')

Param	Flag	Result	Units	RL
Chloride		2560	mg/Kg	4

Sample: 306501 - AH-6 (8-8.5')

Param	Flag	Result	Units	RL
Chloride		2780	mg/Kg	4

Sample: 306502 - AH-6 (9-9.5')

Param	Flag	Result	Units	RL
Chloride		975	mg/Kg	4

Sample: 306503 - AH-6 (10-10.5')

Param	Flag	Result	Units	RL
Chloride		1700	mg/Kg	4



6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAqua3c) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail lab@traceanalysis.com WEB www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report (Corrected Report)

Aaron Hale
Tetra Tech
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: August 23, 2012

Work Order: 12081031



Project Location: Eddy Co., NM
Project Name: SM Energy/PDU #7/8
Project Number: 114-6401483

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
306463	AH-1 (0-1')	soil	2012-08-09	00:00	2012-08-10
306464	AH-1 (1-1.5')	soil	2012-08-09	00:00	2012-08-10
306465	AH-1 (2-2.5')	soil	2012-08-09	00:00	2012-08-10
306466	AH-1 (3-3.5')	soil	2012-08-09	00:00	2012-08-10
306467	AH-1 (4-4.5')	soil	2012-08-09	00:00	2012-08-10
306468	AH-1 (5-5.5')	soil	2012-08-09	00:00	2012-08-10
306469	AH-1 (6-6.5')	soil	2012-08-09	00:00	2012-08-10
306470	AH-2 (0-1')	soil	2012-08-09	00:00	2012-08-10
306471	AH-2 (1-1.5')	soil	2012-08-09	00:00	2012-08-10
306472	AH-2 (2-2.5')	soil	2012-08-09	00:00	2012-08-10
306473	AH-2 (3-3.5')	soil	2012-08-09	00:00	2012-08-10
306474	AH-2 (4-4.5')	soil	2012-08-09	00:00	2012-08-10
306475	AH-2 (5-5.5')	soil	2012-08-09	00:00	2012-08-10
306476	AH-3 (0-1')	soil	2012-08-09	00:00	2012-08-10
306477	AH-3 (1-1.5')	soil	2012-08-09	00:00	2012-08-10
306478	AH-3 (2-2.5')	soil	2012-08-09	00:00	2012-08-10

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
306479	AH-4 (0-1')	soil	2012-08-09	00:00	2012-08-10
306480	AH-4 (1-1.5')	soil	2012-08-09	00:00	2012-08-10
306481	AH-4 (2-2.5')	soil	2012-08-09	00:00	2012-08-10
306482	AH-4 (3-3.5')	soil	2012-08-09	00:00	2012-08-10
306483	AH-4 (4-4.5')	soil	2012-08-09	00:00	2012-08-10
306484	AH-4 (5-5.5')	soil	2012-08-09	00:00	2012-08-10
306485	AH-4 (6-6.5')	soil	2012-08-09	00:00	2012-08-10
306486	AH-4 (7-7.5')	soil	2012-08-09	00:00	2012-08-10
306487	AH-5 (0-1')	soil	2012-08-09	00:00	2012-08-10
306488	AH-5 (1-1.5')	soil	2012-08-09	00:00	2012-08-10
306489	AH-5 (2-2.5')	soil	2012-08-09	00:00	2012-08-10
306490	AH-5 (3-3.5')	soil	2012-08-09	00:00	2012-08-10
306491	AH-5 (4-4.5')	soil	2012-08-09	00:00	2012-08-10
306492	AH-5 (5-5.5')	soil	2012-08-09	00:00	2012-08-10
306493	AH-6 (0-1')	soil	2012-08-09	00:00	2012-08-10
306494	AH-6 (1-1.5')	soil	2012-08-09	00:00	2012-08-10
306495	AH-6 (2-2.5')	soil	2012-08-09	00:00	2012-08-10
306496	AH-6 (3-3.5')	soil	2012-08-09	00:00	2012-08-10
306497	AH-6 (4-4.5')	soil	2012-08-09	00:00	2012-08-10
306498	AH-6 (5-5.5')	soil	2012-08-09	00:00	2012-08-10
306499	AH-6 (6-6.5')	soil	2012-08-09	00:00	2012-08-10
306500	AH-6 (7-7.5')	soil	2012-08-09	00:00	2012-08-10
306501	AH-6 (8-8.5')	soil	2012-08-09	00:00	2012-08-10
306502	AH-6 (9-9.5')	soil	2012-08-09	00:00	2012-08-10
306503	AH-6 (10-10.5')	soil	2012-08-09	00:00	2012-08-10

Report Corrections (Work Order 12081031)

- 8/20/12: Corrected project name per client.

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 52 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.



Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

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Case Narrative

Samples for project SM Energy/PDU #7/8 were received by TraceAnalysis, Inc. on 2012-08-10 and assigned to work order 12081031. Samples for work order 12081031 were received intact at a temperature of 0.6 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	79710	2012-08-17 at 16:27	94025	2012-08-17 at 16:27
BTEX	S 8021B	79813	2012-08-22 at 12:56	94162	2012-08-22 at 12:56
Chloride (Titration)	SM 4500-Cl B	79556	2012-08-13 at 08:42	93899	2012-08-13 at 14:02
Chloride (Titration)	SM 4500-Cl B	79556	2012-08-13 at 08:42	93900	2012-08-13 at 14:03
Chloride (Titration)	SM 4500-Cl B	79556	2012-08-13 at 08:42	93901	2012-08-13 at 14:06
Chloride (Titration)	SM 4500-Cl B	79556	2012-08-13 at 08:42	93902	2012-08-13 at 14:07
Chloride (Titration)	SM 4500-Cl B	79556	2012-08-13 at 08:42	93903	2012-08-13 at 14:08
TPH DRO - NEW	S 8015 D	79581	2012-08-13 at 09:00	93873	2012-08-14 at 08:36
TPH DRO - NEW	S 8015 D	79640	2012-08-15 at 08:00	93943	2012-08-16 at 10:26
TPH GRO	S 8015 D	79710	2012-08-17 at 16:27	94026	2012-08-17 at 16:27
TPH GRO	S 8015 D	79759	2012-08-20 at 10:27	94093	2012-08-20 at 10:27
TPH GRO	S 8015 D	79813	2012-08-22 at 12:56	94163	2012-08-22 at 12:56

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 12081031 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Report Date: August 23, 2012
114-6401483

Work Order: 12081031
SM Energy/PDU #7/8

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Eddy Co., NM

Analytical Report

Sample: 306463 - AH-1 (0-1')

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 94025
Prep Batch: 79710

Analytical Method: S 8021B
Date Analyzed: 2012-08-17
Sample Preparation: 2012-08-17

Prep Method: S 5035
Analyzed By: MT
Prepared By: MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene		1	<0.0200	mg/Kg	1	0.0200
Xylene	B	1	0.0214	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.48	mg/Kg	1	2.00	74	70 - 130
4-Bromofluorobenzene (4-BFB)			1.96	mg/Kg	1	2.00	98	70 - 130

Sample: 306463 - AH-1 (0-1')

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 93899
Prep Batch: 79556

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-08-13
Sample Preparation: 2012-08-13

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			9740	mg/Kg	10	4.00

Sample: 306463 - AH-1 (0-1')

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 93873
Prep Batch: 79581

Analytical Method: S 8015 D
Date Analyzed: 2012-08-14
Sample Preparation: 2012-08-13

Prep Method: N/A
Analyzed By: CW
Prepared By: CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	2	<50.0	mg/Kg	1	50.0

Report Date: August 23, 2012
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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			100	mg/Kg	1	100	100	70 - 130

Sample: 306463 - AH-1 (0-1')

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2012-08-17	Analyzed By:	MT
QC Batch:	94026	Sample Preparation:	2012-08-17	Prepared By:	MT
Prep Batch:	79710				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	QC	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.41	mg/Kg	1	2.00	70	70 - 130
4-Bromofluorobenzene (4-BFB)			1.95	mg/Kg	1	2.00	98	70 - 130

Sample: 306464 - AH-1 (1-1.5')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-13	Analyzed By:	AR
QC Batch:	93899	Sample Preparation:	2012-08-13	Prepared By:	AR
Prep Batch:	79556				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1650	mg/Kg	10	4.00

Sample: 306465 - AH-1 (2-2.5')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-13	Analyzed By:	AR
QC Batch:	93899	Sample Preparation:	2012-08-13	Prepared By:	AR
Prep Batch:	79556				

continued ...

Report Date: August 23, 2012
114-6401483

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SM Energy/PDU #7/8

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sample 306465 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			4990	mg/Kg	10	4.00

Sample: 306466 - AH-1 (3-3.5')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-13	Analyzed By:	AR
QC Batch:	93899	Sample Preparation:	2012-08-13	Prepared By:	AR
Prep Batch:	79556				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			3940	mg/Kg	10	4.00

Sample: 306467 - AH-1 (4-4.5')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-13	Analyzed By:	AR
QC Batch:	93899	Sample Preparation:	2012-08-13	Prepared By:	AR
Prep Batch:	79556				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			607	mg/Kg	5	4.00

Sample: 306468 - AH-1 (5-5.5')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-13	Analyzed By:	AR
QC Batch:	93899	Sample Preparation:	2012-08-13	Prepared By:	AR
Prep Batch:	79556				

Report Date: August 23, 2012
114-6401483

Work Order: 12081031
SM Energy/PDU #7/8

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Eddy Co., NM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			269	mg/Kg	5	4.00

Sample: 306469 - AH-1 (6-6.5')

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 93899 Date Analyzed: 2012-08-13 Analyzed By: AR
Prep Batch: 79556 Sample Preparation: 2012-08-13 Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			896	mg/Kg	5	4.00

Sample: 306470 - AH-2 (0-1')

Laboratory: Lubbock
Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035
QC Batch: 94025 Date Analyzed: 2012-08-17 Analyzed By: MT
Prep Batch: 79710 Sample Preparation: 2012-08-17 Prepared By: MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.200	mg/Kg	10	0.0200
Toluene	U	1	<0.200	mg/Kg	10	0.0200
Ethylbenzene	U	1	<0.200	mg/Kg	10	0.0200
Xylene	B	1	0.484	mg/Kg	10	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.90	mg/Kg	10	2.00	95	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	3.00	mg/Kg	10	2.00	150	70 - 130

Sample: 306470 - AH-2 (0-1')

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 93899 Date Analyzed: 2012-08-13 Analyzed By: AR
Prep Batch: 79556 Sample Preparation: 2012-08-13 Prepared By: AR

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1820	mg/Kg	10	4.00

Sample: 306470 - AH-2 (0-1')

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 93873
Prep Batch: 79581

Analytical Method: S 8015 D
Date Analyzed: 2012-08-14
Sample Preparation: 2012-08-13

Prep Method: N/A
Analyzed By: CW
Prepared By: CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		2	10900	mg/Kg	10	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	509	mg/Kg	10	100	509	70 - 130

Sample: 306470 - AH-2 (0-1')

Laboratory: Lubbock
Analysis: TPH GRO
QC Batch: 94093
Prep Batch: 79759

Analytical Method: S 8015 D
Date Analyzed: 2012-08-20
Sample Preparation: 2012-08-20

Prep Method: S 5035
Analyzed By: MT
Prepared By: MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	342	mg/Kg	10	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.94	mg/Kg	10	2.00	97	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	5.18	mg/Kg	10	2.00	259	70 - 130

Sample: 306471 - AH-2 (1-1.5')

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 93899
Prep Batch: 79556

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-08-13
Sample Preparation: 2012-08-13

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			64.7	mg/Kg	5	4.00

Sample: 306471 - AH-2 (1-1.5')

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 93943
Prep Batch: 79640

Analytical Method: S 8015 D
Date Analyzed: 2012-08-16
Sample Preparation: 2012-08-15

Prep Method: N/A
Analyzed By: CW
Prepared By: CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qr, Qs	1	103	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			121	mg/Kg	1	100	121	70 - 130

Sample: 306471 - AH-2 (1-1.5')

Laboratory: Lubbock
Analysis: TPH GRO
QC Batch: 94093
Prep Batch: 79759

Analytical Method: S 8015 D
Date Analyzed: 2012-08-20
Sample Preparation: 2012-08-20

Prep Method: S 5035
Analyzed By: MT
Prepared By: MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	49.6	mg/Kg	2	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.82	mg/Kg	2	2.00	91	70 - 130
4-Bromofluorobenzene (4-BFB)			2.30	mg/Kg	2	2.00	115	70 - 130

Sample: 306472 - AH-2 (2-2.5')

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 93899
Prep Batch: 79556

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-08-13
Sample Preparation: 2012-08-13

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			100	mg/Kg	5	4.00

Sample: 306473 - AH-2 (3-3.5')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-13	Analyzed By:	AR
QC Batch:	93900	Sample Preparation:	2012-08-13	Prepared By:	AR
Prep Batch:	79556				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			307	mg/Kg	5	4.00

Sample: 306474 - AH-2 (4-4.5')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-13	Analyzed By:	AR
QC Batch:	93900	Sample Preparation:	2012-08-13	Prepared By:	AR
Prep Batch:	79556				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			156	mg/Kg	5	4.00

Sample: 306475 - AH-2 (5-5.5')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-13	Analyzed By:	AR
QC Batch:	93900	Sample Preparation:	2012-08-13	Prepared By:	AR
Prep Batch:	79556				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			156	mg/Kg	5	4.00

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Sample: 306476 - AH-3 (0-1')

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 94025
Prep Batch: 79710

Analytical Method: S 8021B
Date Analyzed: 2012-08-17
Sample Preparation: 2012-08-17

Prep Method: S 5035
Analyzed By: MT
Prepared By: MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	u	1	<0.0200	mg/Kg	1	0.0200
Toluene	u	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	u	1	<0.0200	mg/Kg	1	0.0200
Xylene	ub	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.42	mg/Kg	1	2.00	71	70 - 130
4-Bromofluorobenzene (4-BFB)			1.81	mg/Kg	1	2.00	90	70 - 130

Sample: 306476 - AH-3 (0-1')

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 93900
Prep Batch: 79556

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-08-13
Sample Preparation: 2012-08-13

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			116	mg/Kg	5	4.00

Sample: 306476 - AH-3 (0-1')

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 93873
Prep Batch: 79581

Analytical Method: S 8015 D
Date Analyzed: 2012-08-14
Sample Preparation: 2012-08-13

Prep Method: N/A
Analyzed By: CW
Prepared By: CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	u	2	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			103	mg/Kg	1	100	103	70 - 130

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Sample: 306476 - AH-3 (0-1')

Laboratory: Lubbock
Analysis: TPH GRO
QC Batch: 94026
Prep Batch: 79710

Analytical Method: S 8015 D
Date Analyzed: 2012-08-17
Sample Preparation: 2012-08-17

Prep Method: S 5035
Analyzed By: MT
Prepared By: MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qc,U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qcr	Qcr	1.35	mg/Kg	1	2.00	68	70 - 130
4-Bromofluorobenzene (4-BFB)			1.77	mg/Kg	1	2.00	88	70 - 130

Sample: 306477 - AH-3 (1-1.5')

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 93900
Prep Batch: 79556

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-08-13
Sample Preparation: 2012-08-13

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			277	mg/Kg	5	4.00

Sample: 306478 - AH-3 (2-2.5')

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 93900
Prep Batch: 79556

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-08-13
Sample Preparation: 2012-08-13

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			247	mg/Kg	5	4.00

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Sample: 306479 - AH-4 (0-1')

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 94025
Prep Batch: 79710

Analytical Method: S 8021B
Date Analyzed: 2012-08-17
Sample Preparation: 2012-08-17

Prep Method: S 5035
Analyzed By: MT
Prepared By: MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	u	1	<0.100	mg/Kg	5	0.0200
Toluene	u	1	<0.100	mg/Kg	5	0.0200
Ethylbenzene	u	1	<0.100	mg/Kg	5	0.0200
Xylene	u	1	<0.100	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qcr	Qcr	1.19	mg/Kg	5	2.00	60	70 - 130
4-Bromofluorobenzene (4-BFB)			1.79	mg/Kg	5	2.00	90	70 - 130

Sample: 306479 - AH-4 (0-1')

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 93900
Prep Batch: 79556

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-08-13
Sample Preparation: 2012-08-13

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			2390	mg/Kg	10	4.00

Sample: 306479 - AH-4 (0-1')

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 93873
Prep Batch: 79581

Analytical Method: S 8015 D
Date Analyzed: 2012-08-14
Sample Preparation: 2012-08-13

Prep Method: N/A
Analyzed By: CW
Prepared By: CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	u	2	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			107	mg/Kg	1	100	107	70 - 130

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Sample: 306479 - AH-4 (0-1')

Laboratory: Lubbock
Analysis: TPH GRO
QC Batch: 94093
Prep Batch: 79759

Analytical Method: S 8015 D
Date Analyzed: 2012-08-20
Sample Preparation: 2012-08-20

Prep Method: S 5035
Analyzed By: MT
Prepared By: MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	<8.00	mg/Kg	2	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.66	mg/Kg	2	2.00	83	70 - 130
4-Bromofluorobenzene (4-BFB)			1.83	mg/Kg	2	2.00	92	70 - 130

Sample: 306480 - AH-4 (1-1.5')

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 93900
Prep Batch: 79556

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-08-13
Sample Preparation: 2012-08-13

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			876	mg/Kg	5	4.00

Sample: 306481 - AH-4 (2-2.5')

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 93900
Prep Batch: 79556

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-08-13
Sample Preparation: 2012-08-13

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1560	mg/Kg	10	4.00

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Sample: 306482 - AH-4 (3-3.5')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-13	Analyzed By:	AR
QC Batch:	93900	Sample Preparation:	2012-08-13	Prepared By:	AR
Prep Batch:	79556				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1990	mg/Kg	10	4.00

Sample: 306483 - AH-4 (4-4.5')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-13	Analyzed By:	AR
QC Batch:	93901	Sample Preparation:	2012-08-13	Prepared By:	AR
Prep Batch:	79556				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1520	mg/Kg	10	4.00

Sample: 306484 - AH-4 (5-5.5')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-13	Analyzed By:	AR
QC Batch:	93901	Sample Preparation:	2012-08-13	Prepared By:	AR
Prep Batch:	79556				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1530	mg/Kg	10	4.00

Sample: 306485 - AH-4 (6-6.5')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-13	Analyzed By:	AR
QC Batch:	93901	Sample Preparation:	2012-08-13	Prepared By:	AR
Prep Batch:	79556				

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1580	mg/Kg	10	4.00

Sample: 306486 - AH-4 (7-7.5')

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 93901 Date Analyzed: 2012-08-13 Analyzed By: AR
Prep Batch: 79556 Sample Preparation: 2012-08-13 Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			46.5	mg/Kg	5	4.00

Sample: 306487 - AH-5 (0-1')

Laboratory: Lubbock
Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035
QC Batch: 94025 Date Analyzed: 2012-08-17 Analyzed By: MT
Prep Batch: 79710 Sample Preparation: 2012-08-17 Prepared By: MT

Parameter	Flag	Cert	RL	Units	Dilution	RL	
			Result				
Benzene	3	u	1	<0.0400	mg/Kg	2	0.0200
Toluene		u	1	<0.0400	mg/Kg	2	0.0200
Ethylbenzene			1	0.0541	mg/Kg	2	0.0200
Xylene		b	1	0.110	mg/Kg	2	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr	1.36	mg/Kg	2	2.00	68	70 - 130
4-Bromofluorobenzene (4-BFB)			1.93	mg/Kg	2	2.00	96	70 - 130

Sample: 306487 - AH-5 (0-1')

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 93901 Date Analyzed: 2012-08-13 Analyzed By: AR
Prep Batch: 79556 Sample Preparation: 2012-08-13 Prepared By: AR

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			2140	mg/Kg	10	4.00

Sample: 306487 - AH-5 (0-1')

Laboratory: Midland
Analysis: TPH DRO - NEW
QC Batch: 93873
Prep Batch: 79581

Analytical Method: S 8015 D
Date Analyzed: 2012-08-14
Sample Preparation: 2012-08-13

Prep Method: N/A
Analyzed By: CW
Prepared By: CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		2	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			113	mg/Kg	1	100	113	70 - 130

Sample: 306487 - AH-5 (0-1')

Laboratory: Lubbock
Analysis: TPH GRO
QC Batch: 94093
Prep Batch: 79759

Analytical Method: S 8015 D
Date Analyzed: 2012-08-20
Sample Preparation: 2012-08-20

Prep Method: S 5035
Analyzed By: MT
Prepared By: MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	<8.00	mg/Kg	2	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.66	mg/Kg	2	2.00	83	70 - 130
4-Bromofluorobenzene (4-BFB)			1.95	mg/Kg	2	2.00	98	70 - 130

Sample: 306488 - AH-5 (1-1.5')

Laboratory: Midland
Analysis: Chloride (Titration)
QC Batch: 93901
Prep Batch: 79556

Analytical Method: SM 4500-Cl B
Date Analyzed: 2012-08-13
Sample Preparation: 2012-08-13

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	u		<20.0	mg/Kg	5	4.00

Sample: 306489 - AH-5 (2-2.5')

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 93901 Date Analyzed: 2012-08-13 Analyzed By: AR
Prep Batch: 79556 Sample Preparation: 2012-08-13 Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	u		<20.0	mg/Kg	5	4.00

Sample: 306490 - AH-5 (3-3.5')

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 93901 Date Analyzed: 2012-08-13 Analyzed By: AR
Prep Batch: 79556 Sample Preparation: 2012-08-13 Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	u		<20.0	mg/Kg	5	4.00

Sample: 306491 - AH-5 (4-4.5')

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 93901 Date Analyzed: 2012-08-13 Analyzed By: AR
Prep Batch: 79556 Sample Preparation: 2012-08-13 Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			274	mg/Kg	5	4.00

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Sample: 306492 - AH-5 (5-5.5')

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 93901 Date Analyzed: 2012-08-13 Analyzed By: AR
Prep Batch: 79556 Sample Preparation: 2012-08-13 Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			910	mg/Kg	10	4.00

Sample: 306493 - AH-6 (0-1')

Laboratory: Lubbock
Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035
QC Batch: 94162 Date Analyzed: 2012-08-22 Analyzed By: MT
Prep Batch: 79813 Sample Preparation: 2012-08-22 Prepared By: MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	u	1	<0.0200	mg/Kg	1	0.0200
Toluene	u	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	u	1	<0.0200	mg/Kg	1	0.0200
Xylene	u	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.75	mg/Kg	1	2.00	88	70 - 130
4-Bromofluorobenzene (4-BFB)			1.68	mg/Kg	1	2.00	84	70 - 130

Sample: 306493 - AH-6 (0-1')

Laboratory: Midland
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 93902 Date Analyzed: 2012-08-13 Analyzed By: AR
Prep Batch: 79556 Sample Preparation: 2012-08-13 Prepared By: AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			13000	mg/Kg	10	4.00

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Sample: 306493 - AH-6 (0-1')

Laboratory:	Midland	Analytical Method:	S 8015 D	Prep Method:	N/A
Analysis:	TPH DRO - NEW	Date Analyzed:	2012-08-14	Analyzed By:	CW
QC Batch:	93873	Sample Preparation:	2012-08-13	Prepared By:	CW
Prep Batch:	79581				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	v	2	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			107	mg/Kg	1	100	107	70 - 130

Sample: 306493 - AH-6 (0-1')

Laboratory:	Lubbock	Analytical Method:	S 8015 D	Prep Method:	S 5035
Analysis:	TPH GRO	Date Analyzed:	2012-08-22	Analyzed By:	MT
QC Batch:	94163	Sample Preparation:	2012-08-22	Prepared By:	MT
Prep Batch:	79813				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.90	mg/Kg	1	2.00	95	70 - 130
4-Bromofluorobenzene (4-BFB)			1.80	mg/Kg	1	2.00	90	70 - 130

Sample: 306494 - AH-6 (1-1.5')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-13	Analyzed By:	AR
QC Batch:	93902	Sample Preparation:	2012-08-13	Prepared By:	AR
Prep Batch:	79556				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			6820	mg/Kg	10	4.00

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Sample: 306495 - AH-6 (2-2.5')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-13	Analyzed By:	AR
QC Batch:	93902	Sample Preparation:	2012-08-13	Prepared By:	AR
Prep Batch:	79556				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			5650	mg/Kg	10	4.00

Sample: 306496 - AH-6 (3-3.5')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-13	Analyzed By:	AR
QC Batch:	93902	Sample Preparation:	2012-08-13	Prepared By:	AR
Prep Batch:	79556				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			169	mg/Kg	5	4.00

Sample: 306497 - AH-6 (4-4.5')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-13	Analyzed By:	AR
QC Batch:	93902	Sample Preparation:	2012-08-13	Prepared By:	AR
Prep Batch:	79556				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			210	mg/Kg	5	4.00

Sample: 306498 - AH-6 (5-5.5')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-13	Analyzed By:	AR
QC Batch:	93902	Sample Preparation:	2012-08-13	Prepared By:	AR
Prep Batch:	79556				

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Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			3190	mg/Kg	10	4.00

Sample: 306499 - AH-6 (6-6.5')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-13	Analyzed By:	AR
QC Batch:	93902	Sample Preparation:	2012-08-13	Prepared By:	AR
Prep Batch:	79556				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			5020	mg/Kg	10	4.00

Sample: 306500 - AH-6 (7-7.5')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-13	Analyzed By:	AR
QC Batch:	93902	Sample Preparation:	2012-08-13	Prepared By:	AR
Prep Batch:	79556				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			2560	mg/Kg	10	4.00

Sample: 306501 - AH-6 (8-8.5')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-13	Analyzed By:	AR
QC Batch:	93902	Sample Preparation:	2012-08-13	Prepared By:	AR
Prep Batch:	79556				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			2780	mg/Kg	10	4.00

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Sample: 306502 - AH-6 (9-9.5')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-13	Analyzed By:	AR
QC Batch:	93902	Sample Preparation:	2012-08-13	Prepared By:	AR
Prep Batch:	79556				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			975	mg/Kg	5	4.00

Sample: 306503 - AH-6 (10-10.5')

Laboratory:	Midland	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Analysis:	Chloride (Titration)	Date Analyzed:	2012-08-13	Analyzed By:	AR
QC Batch:	93903	Sample Preparation:	2012-08-13	Prepared By:	AR
Prep Batch:	79556				

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			1700	mg/Kg	10	4.00

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Method Blanks

Method Blank (1) QC Batch: 93873

QC Batch: 93873
Prep Batch: 79581

Date Analyzed: 2012-08-14
QC Preparation: 2012-08-13

Analyzed By: CW
Prepared By: CW

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		2	<14.5	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			103	mg/Kg	1	100	103	70 - 130

Method Blank (1) QC Batch: 93899

QC Batch: 93899
Prep Batch: 79556

Date Analyzed: 2012-08-13
QC Preparation: 2012-08-13

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Method Blank (1) QC Batch: 93900

QC Batch: 93900
Prep Batch: 79556

Date Analyzed: 2012-08-13
QC Preparation: 2012-08-13

Analyzed By: AR
Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

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Method Blank (1) QC Batch: 93901

QC Batch: 93901 Date Analyzed: 2012-08-13 Analyzed By: AR
Prep Batch: 79556 QC Preparation: 2012-08-13 Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Method Blank (1) QC Batch: 93902

QC Batch: 93902 Date Analyzed: 2012-08-13 Analyzed By: AR
Prep Batch: 79556 QC Preparation: 2012-08-13 Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Method Blank (1) QC Batch: 93903

QC Batch: 93903 Date Analyzed: 2012-08-13 Analyzed By: AR
Prep Batch: 79556 QC Preparation: 2012-08-13 Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Method Blank (1) QC Batch: 93943

QC Batch: 93943 Date Analyzed: 2012-08-16 Analyzed By: CW
Prep Batch: 79640 QC Preparation: 2012-08-15 Prepared By: CW

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		2	<14.5	mg/Kg	50

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			118	mg/Kg	1	100	118	70 - 130

Method Blank (1) QC Batch: 94025

QC Batch: 94025
Prep Batch: 79710

Date Analyzed: 2012-08-17
QC Preparation: 2012-08-17

Analyzed By: MT
Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00365	mg/Kg	0.02
Toluene		1	<0.00816	mg/Kg	0.02
Ethylbenzene		1	<0.00560	mg/Kg	0.02
Xylene		1	0.0168	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.88	mg/Kg	1	2.00	94	70 - 130
4-Bromofluorobenzene (4-BFB)			1.88	mg/Kg	1	2.00	94	70 - 130

Method Blank (1) QC Batch: 94026

QC Batch: 94026
Prep Batch: 79710

Date Analyzed: 2012-08-17
QC Preparation: 2012-08-17

Analyzed By: MT
Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.359	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.85	mg/Kg	1	2.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)			1.84	mg/Kg	1	2.00	92	70 - 130

Method Blank (1) QC Batch: 94093

QC Batch: 94093
Prep Batch: 79759

Date Analyzed: 2012-08-20
QC Preparation: 2012-08-20

Analyzed By: MT
Prepared By: MT

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Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.359	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.72	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.76	mg/Kg	1	2.00	88	70 - 130

Method Blank (1) QC Batch: 94162

QC Batch: 94162
Prep Batch: 79813

Date Analyzed: 2012-08-22
QC Preparation: 2012-08-22

Analyzed By: MT
Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00365	mg/Kg	0.02
Toluene		1	<0.00816	mg/Kg	0.02
Ethylbenzene		1	<0.00560	mg/Kg	0.02
Xylene		1	<0.00460	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.10	mg/Kg	1	2.00	105	70 - 130
4-Bromofluorobenzene (4-BFB)			1.97	mg/Kg	1	2.00	98	70 - 130

Method Blank (1) QC Batch: 94163

QC Batch: 94163
Prep Batch: 79813

Date Analyzed: 2012-08-22
QC Preparation: 2012-08-22

Analyzed By: MT
Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.359	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.38	mg/Kg	1	2.00	119	70 - 130
4-Bromofluorobenzene (4-BFB)			2.15	mg/Kg	1	2.00	108	70 - 130

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Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 93873
Prep Batch: 79581

Date Analyzed: 2012-08-14
QC Preparation: 2012-08-13

Analyzed By: CW
Prepared By: CW

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		2	276	mg/Kg	1	250	<14.5	110	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		2	268	mg/Kg	1	250	<14.5	107	70 - 130	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	119	116	mg/Kg	1	100	119	116	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 93899
Prep Batch: 79556

Date Analyzed: 2012-08-13
QC Preparation: 2012-08-13

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2640	mg/Kg	1	2500	<3.85	106	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2700	mg/Kg	1	2500	<3.85	108	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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Laboratory Control Spike (LCS-1)

QC Batch: 93900
Prep Batch: 79556

Date Analyzed: 2012-08-13
QC Preparation: 2012-08-13

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2680	mg/Kg	1	2500	<3.85	107	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2740	mg/Kg	1	2500	<3.85	110	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 93901
Prep Batch: 79556

Date Analyzed: 2012-08-13
QC Preparation: 2012-08-13

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2590	mg/Kg	1	2500	<3.85	104	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2480	mg/Kg	1	2500	<3.85	99	85 - 115	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 93902
Prep Batch: 79556

Date Analyzed: 2012-08-13
QC Preparation: 2012-08-13

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2660	mg/Kg	1	2500	<3.85	106	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2600	mg/Kg	1	2500	<3.85	104	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 93903
Prep Batch: 79556

Date Analyzed: 2012-08-13
QC Preparation: 2012-08-13

Analyzed By: AR
Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2680	mg/Kg	1	2500	<3.85	107	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2600	mg/Kg	1	2500	<3.85	104	85 - 115	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 93943
Prep Batch: 79640

Date Analyzed: 2012-08-16
QC Preparation: 2012-08-15

Analyzed By: CW
Prepared By: CW

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		2	278	mg/Kg	1	250	<14.5	111	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		2	299	mg/Kg	1	250	<14.5	120	70 - 130	7	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
n-Tricosane	119	126	mg/Kg	1	100	119	126	70 - 130

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Laboratory Control Spike (LCS-1)

QC Batch: 94025
Prep Batch: 79710

Date Analyzed: 2012-08-17
QC Preparation: 2012-08-17

Analyzed By: MT
Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.93	mg/Kg	1	2.00	<0.00365	96	75.4 - 120
Toluene		1	1.90	mg/Kg	1	2.00	<0.00816	95	74.9 - 120
Ethylbenzene		1	1.91	mg/Kg	1	2.00	<0.00560	96	78.1 - 120
Xylene		1	5.72	mg/Kg	1	6.00	0.0168	95	77.3 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.89	mg/Kg	1	2.00	<0.00365	94	75.4 - 120	2	20
Toluene		1	1.85	mg/Kg	1	2.00	<0.00816	92	74.9 - 120	3	20
Ethylbenzene		1	1.88	mg/Kg	1	2.00	<0.00560	94	78.1 - 120	2	20
Xylene		1	5.63	mg/Kg	1	6.00	0.0168	94	77.3 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.90	1.93	mg/Kg	1	2.00	95	96	70 - 130
4-Bromofluorobenzene (4-BFB)	1.90	1.92	mg/Kg	1	2.00	95	96	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 94026
Prep Batch: 79710

Date Analyzed: 2012-08-17
QC Preparation: 2012-08-17

Analyzed By: MT
Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.4	mg/Kg	1	20.0	<0.359	87	68.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.4	mg/Kg	1	20.0	<0.359	87	68.9 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.03	2.00	mg/Kg	1	2.00	102	100	70 - 130
4-Bromofluorobenzene (4-BFB)	1.94	1.91	mg/Kg	1	2.00	97	96	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 94093
Prep Batch: 79759

Date Analyzed: 2012-08-20
QC Preparation: 2012-08-20

Analyzed By: MT
Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	16.8	mg/Kg	1	20.0	<0.359	84	68.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.3	mg/Kg	1	20.0	<0.359	86	68.9 - 120	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.71	1.85	mg/Kg	1	2.00	86	92	70 - 130
4-Bromofluorobenzene (4-BFB)	1.98	1.93	mg/Kg	1	2.00	99	96	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 94162
Prep Batch: 79813

Date Analyzed: 2012-08-22
QC Preparation: 2012-08-22

Analyzed By: MT
Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.79	mg/Kg	1	2.00	<0.00365	90	75.4 - 120
Toluene		1	1.74	mg/Kg	1	2.00	<0.00816	87	74.9 - 120
Ethylbenzene		1	1.74	mg/Kg	1	2.00	<0.00560	87	78.1 - 120
Xylene		1	5.19	mg/Kg	1	6.00	<0.00460	86	77.3 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.72	mg/Kg	1	2.00	<0.00365	86	75.4 - 120	4	20
Toluene		1	1.68	mg/Kg	1	2.00	<0.00816	84	74.9 - 120	4	20
Ethylbenzene		1	1.69	mg/Kg	1	2.00	<0.00560	84	78.1 - 120	3	20
Xylene		1	5.04	mg/Kg	1	6.00	<0.00460	84	77.3 - 120	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.76	1.66	mg/Kg	1	2.00	88	83	70 - 130
4-Bromofluorobenzene (4-BFB)	1.73	1.67	mg/Kg	1	2.00	86	84	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 94163
Prep Batch: 79813

Date Analyzed: 2012-08-22
QC Preparation: 2012-08-22

Analyzed By: MT
Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.9	mg/Kg	1	20.0	<0.359	89	68.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	18.2	mg/Kg	1	20.0	<0.359	91	68.9 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.05	2.08	mg/Kg	1	2.00	102	104	70 - 130
4-Bromofluorobenzene (4-BFB)	1.97	1.99	mg/Kg	1	2.00	98	99	70 - 130

Matrix Spike (MS-1) Spiked Sample: 306463

QC Batch: 93873
Prep Batch: 79581

Date Analyzed: 2012-08-14
QC Preparation: 2012-08-13

Analyzed By: CW
Prepared By: CW

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		2	255	mg/Kg	1	250	<14.5	102	70 - 130

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Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		2	249	mg/Kg	1	250	<14.5	100	70 - 130	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	101	101	mg/Kg	1	100	101	101	70 - 130

Matrix Spike (MS-1) Spiked Sample: 306472

QC Batch: 93899
Prep Batch: 79556

Date Analyzed: 2012-08-13
QC Preparation: 2012-08-13

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2450	mg/Kg	5	2500	100	94	78.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2540	mg/Kg	5	2500	100	98	78.9 - 121	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 306482

QC Batch: 93900
Prep Batch: 79556

Date Analyzed: 2012-08-13
QC Preparation: 2012-08-13

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			4340	mg/Kg	10	2500	1990	94	78.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			4540	mg/Kg	10	2500	1990	102	78.9 - 121	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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Matrix Spike (MS-1) Spiked Sample: 306492

QC Batch: 93901
Prep Batch: 79556

Date Analyzed: 2012-08-13
QC Preparation: 2012-08-13

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3190	mg/Kg	10	2500	910	91	78.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			3400	mg/Kg	10	2500	910	100	78.9 - 121	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 306502

QC Batch: 93902
Prep Batch: 79556

Date Analyzed: 2012-08-13
QC Preparation: 2012-08-13

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3670	mg/Kg	10	2500	975	108	78.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			3770	mg/Kg	10	2500	975	112	78.9 - 121	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 306513

QC Batch: 93903
Prep Batch: 79556

Date Analyzed: 2012-08-13
QC Preparation: 2012-08-13

Analyzed By: AR
Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2580	mg/Kg	5	2500	<19.2	103	78.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2720	mg/Kg	5	2500	<19.2	109	78.9 - 121	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 306548

QC Batch: 93943
Prep Batch: 79640

Date Analyzed: 2012-08-16
QC Preparation: 2012-08-15

Analyzed By: CW
Prepared By: CW

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		2	295	mg/Kg	1	250	<14.5	118	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F		C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	Qr.Qs	Qr.Qs	2	718	mg/Kg	1	250	<14.5	287	70 - 130	84	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	126	153	mg/Kg	1	100	126	153	70 - 130

Matrix Spike (xMS-1) Spiked Sample:

QC Batch: 94025
Prep Batch: 79710

Date Analyzed: 2012-08-17
QC Preparation: 2012-08-17

Analyzed By: MT
Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.85	mg/Kg	1	2.00	<0.00365	92	37.6 - 142
Toluene		1	1.96	mg/Kg	1	2.00	<0.00816	98	38.6 - 153
Ethylbenzene		1	2.09	mg/Kg	1	2.00	<0.00560	104	36.7 - 172
Xylene		1	6.28	mg/Kg	1	6.00	<0.00460	105	36.7 - 173

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.80	mg/Kg	1	2.00	<0.00365	90	37.6 - 142	3	20
Toluene		1	1.88	mg/Kg	1	2.00	<0.00816	94	38.6 - 153	4	20

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matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Ethylbenzene		1	2.04	mg/Kg	1	2.00	<0.00560	102	36.7 - 172	2	20
Xylene		1	6.13	mg/Kg	1	6.00	<0.00460	102	36.7 - 173	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.00	1.92	mg/Kg	1	2	100	96	70 - 130
4-Bromofluorobenzene (4-BFB)	2.00	1.89	mg/Kg	1	2	100	94	70 - 130

Matrix Spike (MS-1) Spiked Sample: 306506

QC Batch: 94026
Prep Batch: 79710

Date Analyzed: 2012-08-17
QC Preparation: 2012-08-17

Analyzed By: MT
Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	23.4	mg/Kg	1	20.0	4.92	92	68.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	21.7	mg/Kg	1	20.0	4.92	84	68.9 - 120	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.69	1.66	mg/Kg	1	2	84	83	70 - 130
4-Bromofluorobenzene (4-BFB)	2.23	2.13	mg/Kg	1	2	112	106	70 - 130

Matrix Spike (xMS-1) Spiked Sample:

QC Batch: 94093
Prep Batch: 79759

Date Analyzed: 2012-08-20
QC Preparation: 2012-08-20

Analyzed By: MT
Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	13.9	mg/Kg	1	20.0	<0.359	70	68.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	14.7	mg/Kg	1	20.0	<0.359	74	68.9 - 120	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.39	1.57	mg/Kg	1	2	70	78	70 - 130
4-Bromofluorobenzene (4-BFB)	1.86	1.93	mg/Kg	1	2	93	96	70 - 130

Matrix Spike (MS-1) Spiked Sample: 306910

QC Batch: 94162
Prep Batch: 79813

Date Analyzed: 2012-08-22
QC Preparation: 2012-08-22

Analyzed By: MT
Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.76	mg/Kg	1	2.00	<0.00365	88	37.6 - 142
Toluene		1	1.96	mg/Kg	1	2.00	<0.00816	98	38.6 - 153
Ethylbenzene		1	2.02	mg/Kg	1	2.00	<0.00560	101	36.7 - 172
Xylene		1	6.03	mg/Kg	1	6.00	<0.00460	100	36.7 - 173

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.81	mg/Kg	1	2.00	<0.00365	90	37.6 - 142	3	20
Toluene		1	2.03	mg/Kg	1	2.00	<0.00816	102	38.6 - 153	4	20
Ethylbenzene		1	2.13	mg/Kg	1	2.00	<0.00560	106	36.7 - 172	5	20
Xylene		1	6.36	mg/Kg	1	6.00	<0.00460	106	36.7 - 173	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.84	1.94	mg/Kg	1	2	92	97	70 - 130
4-Bromofluorobenzene (4-BFB)	1.93	1.98	mg/Kg	1	2	96	99	70 - 130

Matrix Spike (MS-1) Spiked Sample: 306910

QC Batch: 94163
Prep Batch: 79813

Date Analyzed: 2012-08-22
QC Preparation: 2012-08-22

Analyzed By: MT
Prepared By: MT

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Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	19.9	mg/Kg	1	20.0	1.92	90	68.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	21.1	mg/Kg	1	20.0	1.92	96	68.9 - 120	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.88	1.82	mg/Kg	1	2	94	91	70 - 130
4-Bromofluorobenzene (4-BFB)	2.44	2.36	mg/Kg	1	2	122	118	70 - 130

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Calibration Standards

Standard (CCV-1)

QC Batch: 93873

Date Analyzed: 2012-08-14

Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	264	106	80 - 120	2012-08-14

Standard (CCV-2)

QC Batch: 93873

Date Analyzed: 2012-08-14

Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	260	104	80 - 120	2012-08-14

Standard (CCV-3)

QC Batch: 93873

Date Analyzed: 2012-08-14

Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	272	109	80 - 120	2012-08-14

Standard (CCV-1)

QC Batch: 93899

Date Analyzed: 2012-08-13

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-08-13

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Standard (CCV-2)

QC Batch: 93899

Date Analyzed: 2012-08-13

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.2	99	85 - 115	2012-08-13

Standard (CCV-1)

QC Batch: 93900

Date Analyzed: 2012-08-13

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-08-13

Standard (CCV-2)

QC Batch: 93900

Date Analyzed: 2012-08-13

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.7	100	85 - 115	2012-08-13

Standard (CCV-1)

QC Batch: 93901

Date Analyzed: 2012-08-13

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.4	99	85 - 115	2012-08-13

Standard (CCV-2)

QC Batch: 93901

Date Analyzed: 2012-08-13

Analyzed By: AR

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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-08-13

Standard (CCV-1)

QC Batch: 93902

Date Analyzed: 2012-08-13

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.8	100	85 - 115	2012-08-13

Standard (CCV-2)

QC Batch: 93902

Date Analyzed: 2012-08-13

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-08-13

Standard (CCV-1)

QC Batch: 93903

Date Analyzed: 2012-08-13

Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-08-13

Standard (CCV-2)

QC Batch: 93903

Date Analyzed: 2012-08-13

Analyzed By: AR

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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-08-13

Standard (CCV-1)

QC Batch: 93943

Date Analyzed: 2012-08-16

Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	297	119	80 - 120	2012-08-16

Standard (CCV-2)

QC Batch: 93943

Date Analyzed: 2012-08-16

Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	248	99	80 - 120	2012-08-16

Standard (CCV-3)

QC Batch: 93943

Date Analyzed: 2012-08-16

Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	270	108	80 - 120	2012-08-16

Standard (CCV-1)

QC Batch: 94025

Date Analyzed: 2012-08-17

Analyzed By: MT

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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0956	96	80 - 120	2012-08-17
Toluene		1	mg/kg	0.100	0.0938	94	80 - 120	2012-08-17
Ethylbenzene		1	mg/kg	0.100	0.0956	96	80 - 120	2012-08-17
Xylene		1	mg/kg	0.300	0.286	95	80 - 120	2012-08-17

Standard (CCV-2)

QC Batch: 94025

Date Analyzed: 2012-08-17

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0943	94	80 - 120	2012-08-17
Toluene		1	mg/kg	0.100	0.0926	93	80 - 120	2012-08-17
Ethylbenzene		1	mg/kg	0.100	0.0929	93	80 - 120	2012-08-17
Xylene		1	mg/kg	0.300	0.277	92	80 - 120	2012-08-17

Standard (CCV-3)

QC Batch: 94025

Date Analyzed: 2012-08-17

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0950	95	80 - 120	2012-08-17
Toluene		1	mg/kg	0.100	0.0978	98	80 - 120	2012-08-17
Ethylbenzene		1	mg/kg	0.100	0.0954	95	80 - 120	2012-08-17
Xylene		1	mg/kg	0.300	0.286	95	80 - 120	2012-08-17

Standard (CCV-1)

QC Batch: 94026

Date Analyzed: 2012-08-17

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.872	87	80 - 120	2012-08-17

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Standard (CCV-2)

QC Batch: 94026

Date Analyzed: 2012-08-17

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.884	88	80 - 120	2012-08-17

Standard (CCV-1)

QC Batch: 94093

Date Analyzed: 2012-08-20

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.853	85	80 - 120	2012-08-20

Standard (CCV-2)

QC Batch: 94093

Date Analyzed: 2012-08-20

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.906	90	80 - 120	2012-08-20

Standard (CCV-3)

QC Batch: 94093

Date Analyzed: 2012-08-20

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.806	80	80 - 120	2012-08-20

Standard (CCV-1)

QC Batch: 94162

Date Analyzed: 2012-08-22

Analyzed By: MT

Report Date: August 23, 2012
114-6401483

Work Order: 12081031
SM Energy/PDU #7/8

Page Number: 49 of 52
Eddy Co., NM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0865	86	80 - 120	2012-08-22
Toluene		1	mg/kg	0.100	0.0852	85	80 - 120	2012-08-22
Ethylbenzene		1	mg/kg	0.100	0.0860	86	80 - 120	2012-08-22
Xylene		1	mg/kg	0.300	0.256	85	80 - 120	2012-08-22

Standard (CCV-2)

QC Batch: 94162

Date Analyzed: 2012-08-22

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0865	86	80 - 120	2012-08-22
Toluene		1	mg/kg	0.100	0.0840	84	80 - 120	2012-08-22
Ethylbenzene		1	mg/kg	0.100	0.0832	83	80 - 120	2012-08-22
Xylene		1	mg/kg	0.300	0.248	83	80 - 120	2012-08-22

Standard (CCV-3)

QC Batch: 94162

Date Analyzed: 2012-08-22

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0874	87	80 - 120	2012-08-22
Toluene		1	mg/kg	0.100	0.0851	85	80 - 120	2012-08-22
Ethylbenzene		1	mg/kg	0.100	0.0846	85	80 - 120	2012-08-22
Xylene		1	mg/kg	0.300	0.251	84	80 - 120	2012-08-22

Standard (CCV-1)

QC Batch: 94163

Date Analyzed: 2012-08-22

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.851	85	80 - 120	2012-08-22

Report Date: August 23, 2012
114-6401483

Work Order: 12081031
SM Energy/PDU #7/8

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Eddy Co., NM

Standard (CCV-2)

QC Batch: 94163

Date Analyzed: 2012-08-22

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.834	83	80 - 120	2012-08-22

Standard (CCV-3)

QC Batch: 94163

Date Analyzed: 2012-08-22

Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.867	87	80 - 120	2012-08-22

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-12-8	Lubbock
2	NELAP	T104704392-12-4	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Result Comments

- 1 Sample dilution due to hydrocarbons.
- 2 Sample dilution due to hydrocarbons.
- 3 Sample dilution due to hydrocarbons.

Report Date: August 23, 2012
114-6401483

Work Order: 12081031
SM Energy/PDU #7/8

Page Number: 52 of 52
Eddy Co., NM

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

Analysis Request of Chain of Custody Record

ANALYSIS REQUEST
(Circle or Specify Method No.)

TETRA TECH

**1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946**

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CLIENT NAME:		PROJECT NAME:		SITE MANAGER:		PRESERVATIVE METHOD	
SM Energy		SM Energy - POU #718		Aaron Heide			
PROJECT NO.:		LAB I.D. NUMBER		DATE		TIME	
114-640483		473		8/9			
MATRIX		COMP.		GRAB		SAMPLE IDENTIFICATION	
473	5	X	AH-2 (3'-3.5')				
474			AH-2 (4'-4.5')				
475			AH-2 (5'-5.5')				
476			AH-3 (0-1')				
477			AH-3 (1'-1.5')				
478			AH-3 (2'-2.5')				
479			AH-4 (0-1')				
480			AH-4 (1'-1.5')				
481			AH-4 (2'-2.5')				
482			AH-4 (3-3.5')				

RELINQUISHED BY: (Signature) _____

RELINQUISHED BY: (Signature) _____

RELINQUISHED BY: (Signature) _____

RECEIVED BY: (Signature) _____

RECEIVED BY: (Signature) _____

RECEIVED BY: (Signature) _____

DATE: _____

DATE: _____

DATE: _____

TIME: _____

TIME: _____

TIME: _____

RECEIVING LABORATORY: _____

CITY: _____

CONTACT: _____

STATE: _____

ZIP: _____

PHONE: _____

DATE: 8/10/12

TIME: 3:50

Analysis Request of Chain of Custody Record

PAGE: 3 OF: 5

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ANALYSIS REQUEST
(Circle or Specify Method)



TETRA TECH

1910 N. Big Spring St.

Midland, Texas 79705

(432) 682-4559 • Fax (432) 682-3946

20

CLIENT NAME:		SITE MANAGER:	
SM Energy		Aron Hake	
PROJECT NO.:		PROJECT NAME:	
114-640113		SM Energy - Plot #719	
LAB I.D. NUMBER		DATE	
TIME		MATRIX	
COM.P.		GRAB	
SAMPLE IDENTIFICATION			
483	8/9		X AH-4 (4'-4.5')
484			X AH-4 (5'-5.5')
485			X AA-4 (6'-6.5')
486			X AH-4 (7'-7.5')
487			AH-5 (0-1')
488			AH-5 (1'-1.5')
489			AH-5 (2'-2.5')
490			AH-5 (3'-3.5')
491			AH-5 (4'-4.5')
492			AH-5 (5'-5.5')

RELINQUISHED BY: (Signature)

RELINQUISHED BY: (Signature)

RELINQUISHED BY: (Signature)

Date: _____ Time: _____

Date: 10 Aug 2012 Time: 12:55

Date: 12/55 Time: _____

RECEIVED BY: (Signature)

RECEIVED BY: (Signature)

RECEIVED BY: (Signature)

Date: _____ Time: _____

Date: 8/10/12 Time: 13:55

Date: _____ Time: _____

RECEIVING LABORATORY: _____ STATE: _____ ZIP: _____

ADDRESS: _____ CITY: _____ PHONE: _____

CONTACT: _____

SAMPLE CONDITION WHEN RECEIVED:

REMARKS:

Please fill out all copies - Laboratory retains Yellow copy - Return Original copy to Tetra Tech - Protect Manager retains Pink copy - Accounting receives Gold copy.

Analysis Request of Chain of Custody Record

PAGE: 4 OF: 5

ANALYSIS REQUEST
(Circle or Specify Method No.)

TETRA TECH

**1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-4560**

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CLIENT NAME:	SM Energy	SITE MANAGER:	Aaron Hulse
PROJECT NO.:	114-6401483	PROJECT NAME:	SM Energy - PDU #7/8
LAB I.D.		TIME	
DATE		FIX	
		AP	
		LB	
			Selling Co, 20m
			SAMPLE IDENTIFICATION

CLIENT NAME:		SITE MANAGER:	
SM Energy		Aaron Hale	
PROJECT NO.:		PROJECT NAME:	
114-6401483		SM Energy - PDU #7/8 Edley Co, OH	
LAB I.D. NUMBER	DATE	TIME	MATRIX
403	8/9		S
404			X
405			
406			
407			
408			
409			
500			
501			
502			

RELINQUISHED BY: (Signature)	Date:	RECEIVED BY: (Signature)
	Time:	
RELINQUISHED BY: (Signature)	Date:	RECEIVED BY: (Signature)
	Time:	
RELINQUISHED BY: (Signature)	Date:	RECEIVED BY: (Signature)
	Time:	

RECEIVING LABORATORY: _____
 ADDRESS: _____
 CITY: _____ STATE: _____ ZIP: _____
 CONTACT: _____ PHONE: _____
 RECEIVED BY: (Signature) _____
 DATE 8/10/12

REMARKS:	
SAMPLE CONDITION WHEN RECEIVED:	

Date: _____
 Time: _____

Date: _____
 Time: _____

Date: _____
 Time: _____

mandy

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SAMPLED BY: (Print & Initial)
Maria Jimenez / Doreen Hernandez
 AIRBILL #: _____
 Dated: 1/1/72
 SAMPLE SHIPPED BY (Circle)
 FEDEX _____ BUS _____
 HAND DELIVERED _____ UPS _____
 OTHER: _____
 TETRA TECH CONTACT PERSON: _____
 Results by: _____

RUSH Charges Authorized		Yes	No

[illegible]

Please fill out all copies - Laboratory retains Yellow copy - Return Original copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

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Analysis Request of Chain of Custody Record

PAGE: 5 OF: 5



TETRA TECH

1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

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CLIENT NAME: SM Energy		SITE MANAGER: Aaron Hale	
PROJECT NO.: 114-6401483		PROJECT NAME: SM Energy - POA #748	
LAB I.D. NUMBER	DATE	TIME	SAMPLE IDENTIFICATION
	503	8/9	
MATRIX	COMP	GRAB	
S	X		
NUMBER OF CONTAINERS			1
FILTERED (Y/N)			
PRESERVATIVE METHOD			
HCL			
HNO3			
ICE			X
NONE			
BTX 8021B			
TPH 8015 MOD, TX1006 (Ext. to C35)			
PAH 8270			
RCRA Metals Ag As Ba Cd Cr Pb Hg Se			
TCLP Metals Ag As Ba Cd Cr Pb Hg Se			
TCLP Volatiles			
TCLP Semi Volatiles			
RCI			
GC/MS Vol. 8240/8260/824			
GC/MS Semi. Vol. 8270/625			
PCBs 8080/808			
Pest. 808/608			
Chloride			X
Gamma Spec.			
Alpha Beta (Air)			
PLM (Asbestos)			
Major Anions/Cations, pH, TDS			

RELINQUISHED BY: (Signature) _____ Date: _____ Time: _____		RECEIVED BY: (Signature) _____ Date: _____ Time: _____	
RELINQUISHED BY: (Signature) _____ Date: _____ Time: _____		RECEIVED BY: (Signature) _____ Date: _____ Time: _____	
RELINQUISHED BY: (Signature) _____ Date: _____ Time: _____		RECEIVED BY: (Signature) _____ Date: _____ Time: _____	
RECEIVING LABORATORY: _____		RECEIVED BY: (Signature) _____ Date: 8/10/12 Time: 13:50	
ADDRESS: _____	CITY: _____ STATE: _____ ZIP: _____	REMARKS: _____	
CONTACT: _____	PHONE: _____	SAMPLE CONDITION WHEN RECEIVED: _____	

SAMPLED BY: (Print & Initial) Mona Kivimäki/Brandon Hurd Date: 8/9/12	
SAMPLE SHIPPED BY: (Circle) FEDEX AIRBILL #: _____	
HAND DELIVERED ☐ BUS ☐ UPS ☐ OTHER: _____	
TETRA TECH CONTACT PERSON: _____ Results by: _____	
RUSH Charges Authorized? Yes ☐ No ☐	

Analysis Request of Chain of Custody Record

ANALYSIS REQUEST
(Circle or Specify Method No.)

TETRA TECH

**1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946**

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Analysis Request of Chain of Custody Record

ANALYSIS REQUEST
(Circle or Specify Method)

TETRA TECH

**1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946**

29.

CLIENT NAME:		SITE MANAGER:		PROJECT NAME:		PRESERVATIVE METHOD	
SM Energy		Aaron Hale		SM Energy - POU #7/8		HCL	
PROJECT NO.:		LAB I.D. NUMBER		DATE		TIME	
114-640483		403		8/9			
PROJECT NO.:		LAB I.D. NUMBER		DATE		TIME	
114-640483		404					
PROJECT NO.:		LAB I.D. NUMBER		DATE		TIME	
114-640483		405					
PROJECT NO.:		LAB I.D. NUMBER		DATE		TIME	
114-640483		406					
PROJECT NO.:		LAB I.D. NUMBER		DATE		TIME	
114-640483		407					
PROJECT NO.:		LAB I.D. NUMBER		DATE		TIME	
114-640483		408					
PROJECT NO.:		LAB I.D. NUMBER		DATE		TIME	
114-640483		409					
PROJECT NO.:		LAB I.D. NUMBER		DATE		TIME	
114-640483		500					
PROJECT NO.:		LAB I.D. NUMBER		DATE		TIME	
114-640483		501					
PROJECT NO.:		LAB I.D. NUMBER		DATE		TIME	
114-640483		502					
114-640483		403		8/9			
114-640483		404					
114-640483		405					
114-640483		406					
114-640483		407					
114-640483		408					
114-640483		409					
114-640483		500					
114-640483		501					
114-640483		502					

SAMPLED BY: (Print & Initial) <i>Maria Trujillo / Orozco</i>		Date: <i>1/27/79</i>
SAMPLE SHIPPED BY: (Circle) FEDEX HAND DELIVERED BUS AIRBILL # _____ OTHER: _____		
TETRA TECH CONTACT PERSON:		Results by:
		RUSH Charges Authorized: Yes _____ No _____

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