SITE INFORMATION

Report Type: Closure Report

General Site Information:						
Site:	**Osage Federal 34 #1H**					
Company:	**SM Energy Company**					
Section, Township and Range	**Unit**	**Sec 34**	**T19S**	**R29E**		
Lease Number:	**30-015-41508**					
County:	**Eddy County**					
GPS:	**32.62298° N**			**104.05507° W**		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	East of Carlsbad, from the intersection of US 62 and Burton Flats Rd. travel North for 3.85 miles. Turn right traveling East for 1.0 miles. Turn left traveling North for 0.40 miles. The location will be on the left.					

Release Data:	
Date Released:	12/12/2013
Type Release:	Foamy mixture of water, gas, oil and sand.
Source of Contamination:	Well blowout
Fluid Released:	440
Fluids Recovered:	270

RECEIVED
APR 24 2014
NMOCD ARTESIA

Official Communication:			
Name:	Vickie Martinez		Tom Elliott
Company:	SM Energy Company		Tetra Tech
Address:	3300 N A St. Suite 200		4000 N. Big Spring Suite 410
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		tom.elliott@tetratech.com

Ranking Criteria		
Depth to Groundwater:	***Ranking Score***	***Site Data***
<50 ft	20	
50-99 ft	10	**10**
>100 ft.	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:	**10**	

Acceptable Soil RRAL (mg/kg)		
Benzene	***Total BTEX***	***TPH***
10	50	1,000

TETRA TECH

March 14, 2014

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

Re: Closure Report for the SM Energy Co., Osage Federal 34 1H, Section 34, Township 19 South, Range 29 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by Sm Energy Co. (SM Energy) to assess a spill from the Osage Federal 34 1H located in Section 34, Township 19 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.62298°, W 104.05507°. The site location is shown on Figures 1 and 2.

Background

According to the state of New Mexico C-141 Initial Report, a well blowout occurred on December 13, 2013, and released approximately four hundred and forty (440) barrels of fluid from the well. To alleviate the problem, SM Energy got the blowout under control and sealed the well. Approximately two hundred and seventy (270) barrels of fluid were recovered. The spill was initiated on the pad and flowed into the pasture affecting an area approximately 65' X 100'. The initial C-141 form is enclosed in Appendix A.

Groundwater

According to the New Mexico State Engineers Office there is one well listed in Section 34 with a depth to groundwater of 60' below surface. According to the NMOCD groundwater map the depth to groundwater is between 50' and 100' below surface. The groundwater data is shown in Appendix B.

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-

Tetra Tech
4000 North Big Spring, Midland, TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

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 1,000 mg/kg.

Soil Assessment and Analytical Results

On December 18, 2013, Tetra Tech personnel inspected and sampled the spill area. Nine (9) auger holes (AH-1 through AH-9) were installed using a stainless steel hand auger to assess the impacted soils. 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.

Referring to Table 1, auger holes (AH-4, AH-5, AH-6, AH-7 AH-8 and AH-9) had samples that were above the RRAL for benzene, which ranged from 10.2 mg/kg to 102 mg/kg. Auger holes (AH-2, AH-4, AH-5, AH-6, AH-7, AH-8 and AH-9) had samples that were above the RRAL for total BTEX. These auger hole samples had BTEX concentrations that ranged from 93.5 mg/kg to 840 mg/kg. Auger holes AH-2, AH-4 and AH-5 were not delineated for both benzene and BTEX.

Auger holes (AH-1, AH-2, AH-4, AH-5, AH-6, AH-7, AH-8 and AH-9) also were above the RRAL for TPH. The maximum TPH concentration was 15,790 mg/kg in AH-6 at a depth of 0-1.0', but declined to 25.4 at a depth of 1-1.5' below surface. Auger hole (AH-1, AH-2, AH-4 and AH-5) were not delineated for TPH.

Auger holes (AH-4, AH-5, AH-7, AH-8 and AH-9) showed chloride concentrations at 0-1' ranging from 2,210 mg/kg to 5,240 mg/kg. A deeper impact was detected in auger hole AH-9 of 3,050 at a depth of 1-1.5', however decreased to 39.3 at a depth of 2-2.5' below surface. Auger holes (AH-4 and AH-5) were not delineated for chlorides.

Site Remediation and Conclusion

From February 11 through 20, 2013, Tetra Tech personnel supervised the excavation of the impacted soils. In order to remove the BTEX, chloride and TPH impacted soils, the area was excavated to a depth of 0.5' to 2.0' below grade. To define the extents, backhoe trenches were installed in some of the impacted area to define extents. The excavated areas are highlighted in Table 1 and shown on Figure 4.

Referring to Table 1, all trenches (T-1, T-2, T-3 and T-4) were below the RRAL for BTEX and TPH. The undefined areas of AH-4 and AH-5 were vertically defined for chlorides from the trench data. Trench T-3 @ AH-4 showed a chloride

concentration of 608 mg/kg at a depth of 1.0' and T-4 @ AH-5 showed a chloride level of 769 at 1.0' below surface and declined with depth.

Based on the trench data, the BLM approved the backfilling of the excavations. The excavation was backfilled with clean material to surface grade. Approximately 1,160 cubic yards of soil were removed and transported to the Lea Land facility for proper disposal.

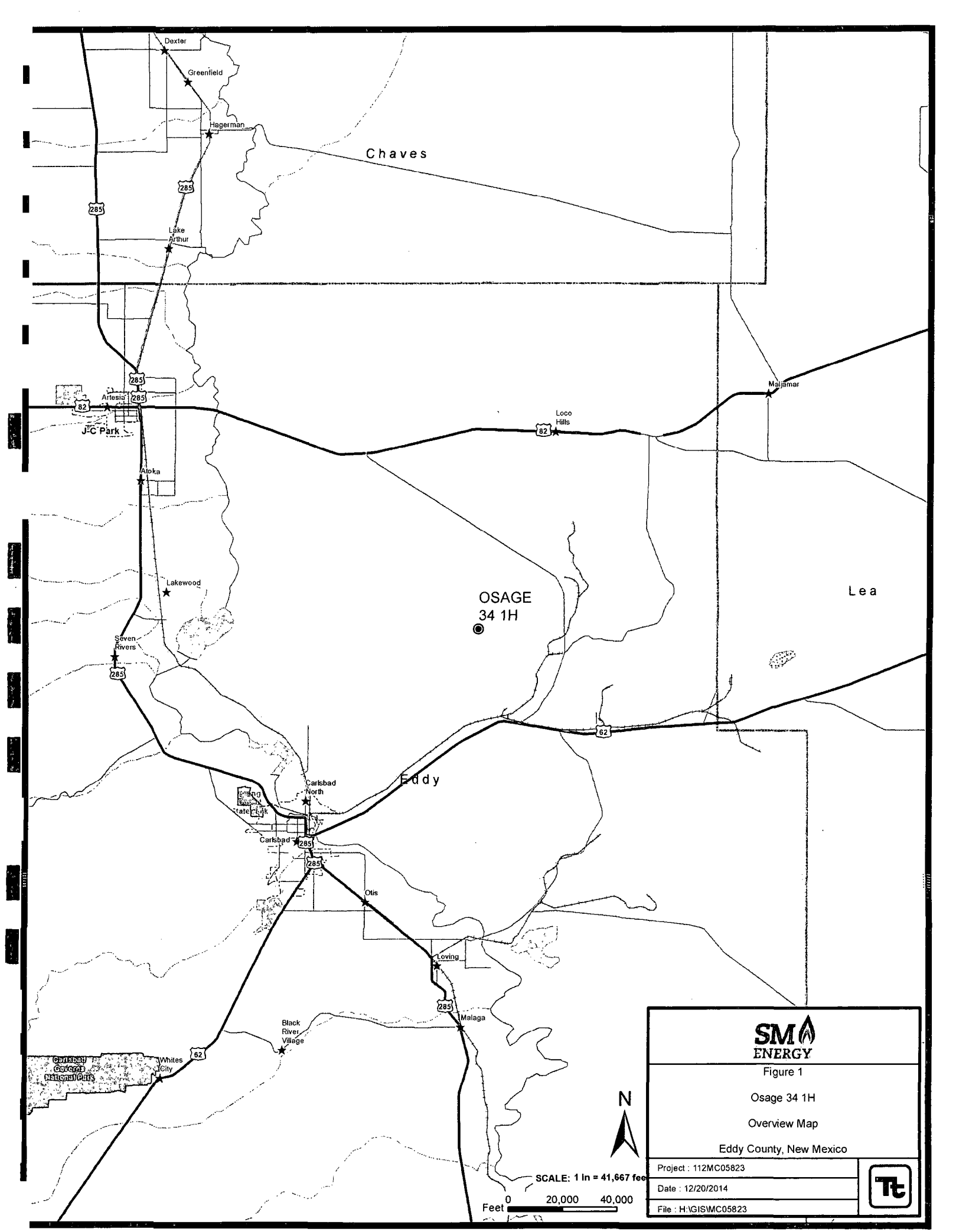
Based on the remediation activities performed at this location, SM Energy requests closure for this site. The C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities for this site, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

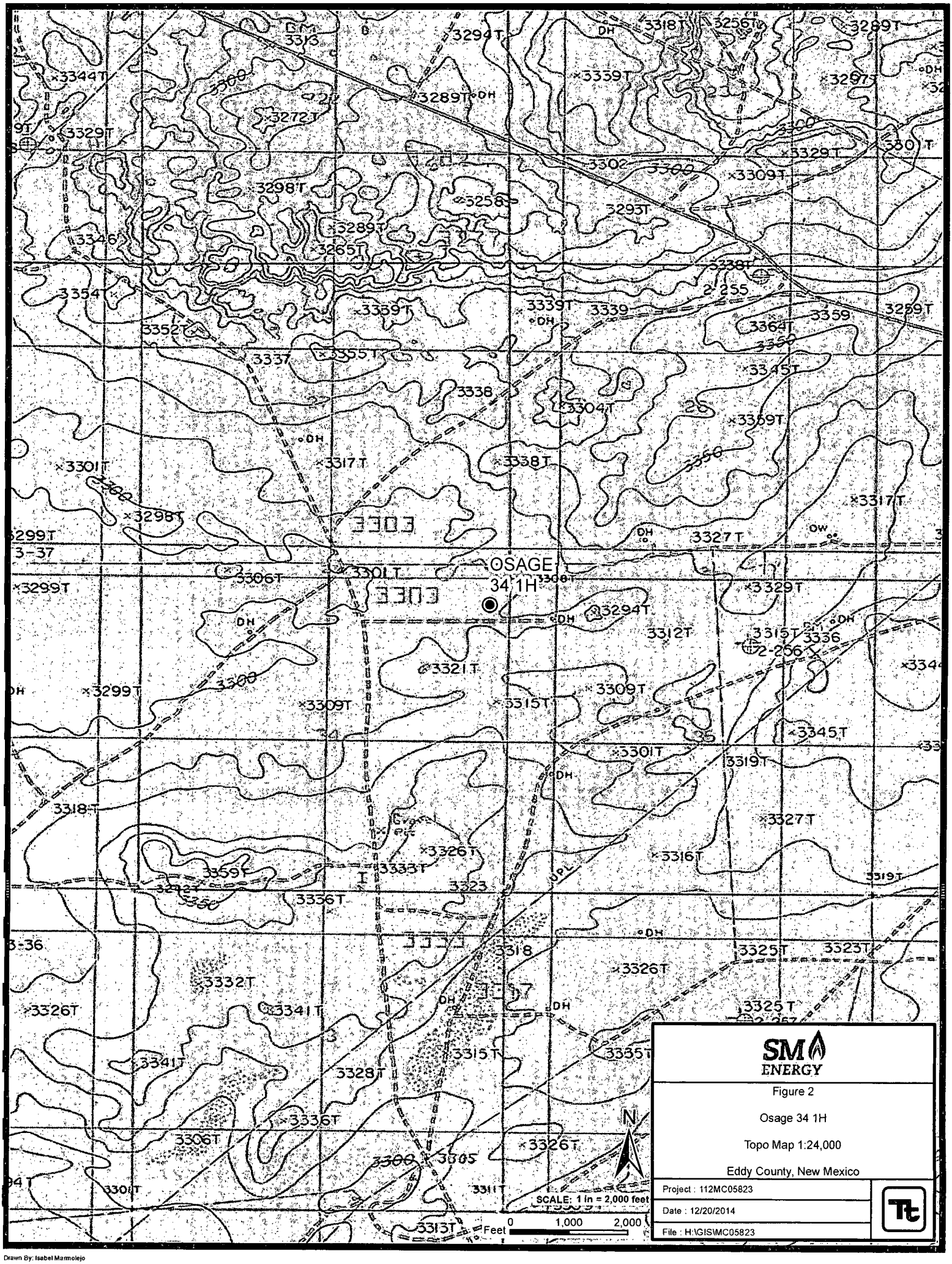
Tom Elliott
Project Manager

cc: Vickie Martinez – SM Energy
Richard Choate – SM Energy

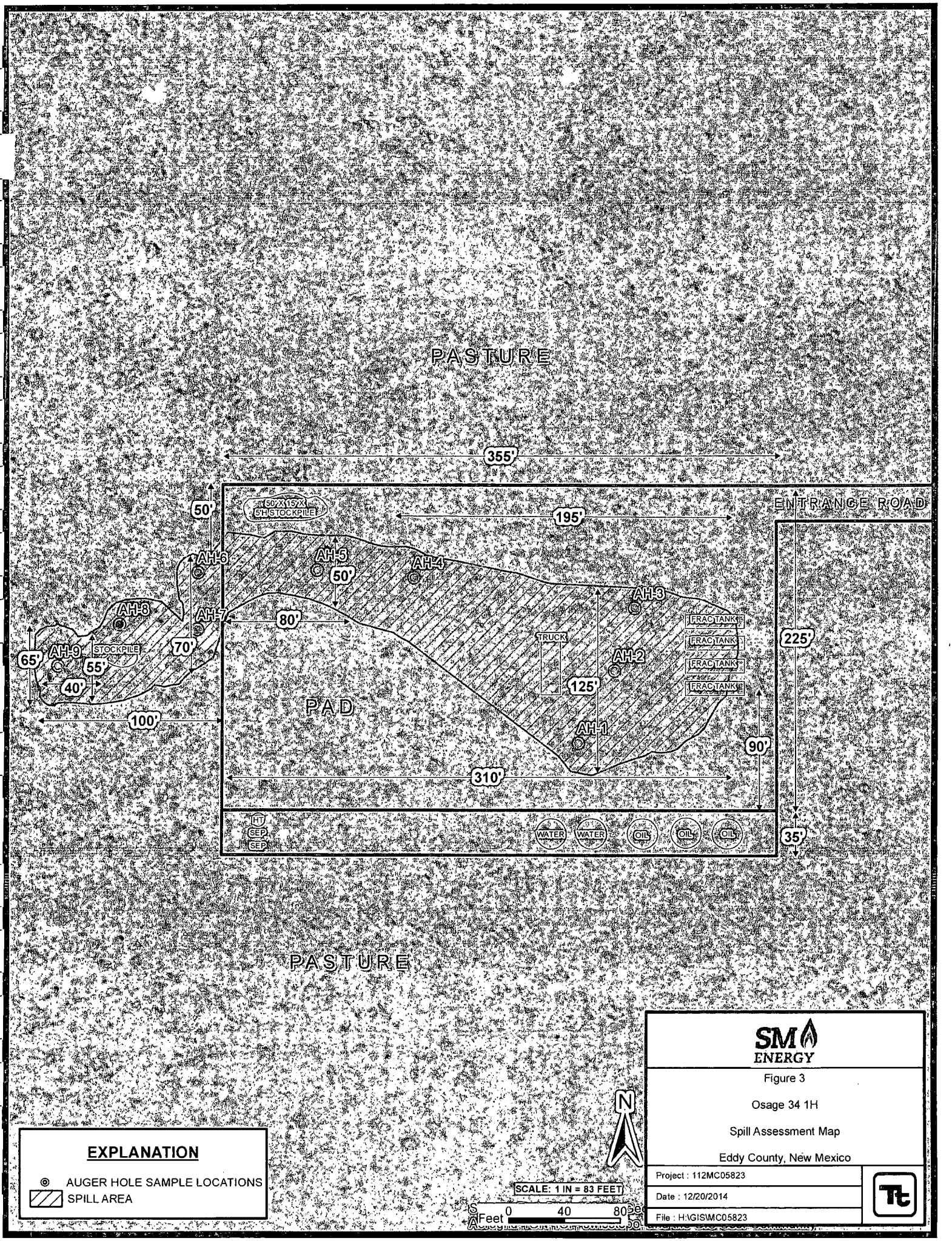
FIGURES



Drawn By: Isabel Marmolejo

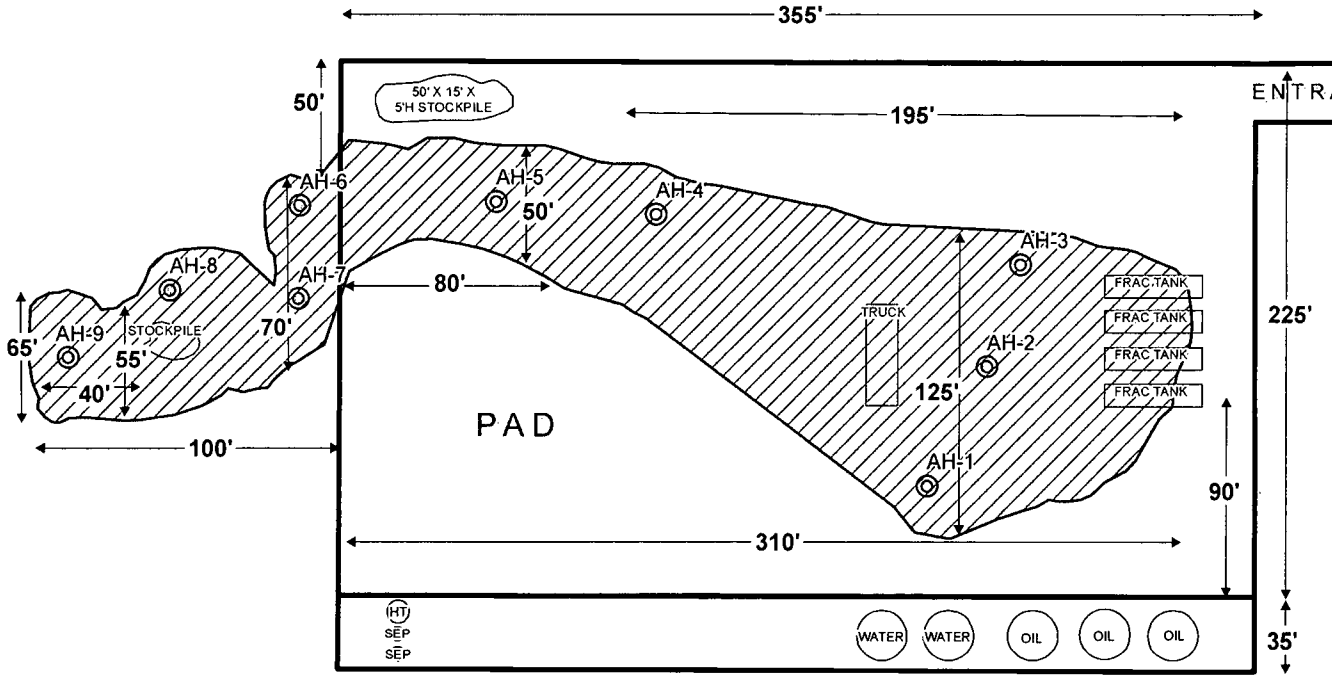


Drawn By: Isabel Marmolejo



Drawn By: Isabel Marmolejo

PASTURE



PASTURE

EXPLANATION

- AUGER HOLE SAMPLE LOCATIONS
- SPILL AREA

N

SCALE: 1 IN = 83 FEET

Feet 0 40 80

SM ENERGY

Figure 3

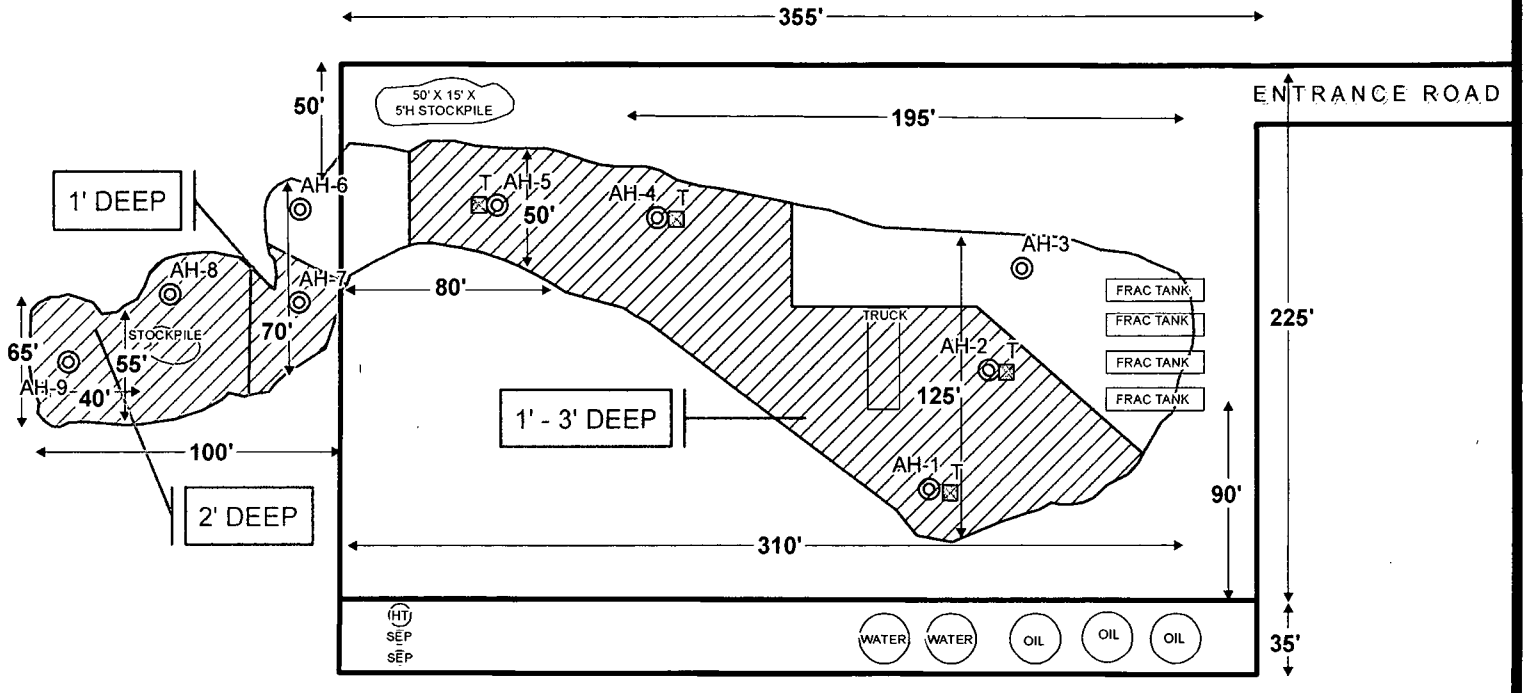
Osage 34 1H

Spill Assessment Map

Eddy County, New Mexico

Project : 112MC05823	
Date : 12/20/2014	
File : H:\GIS\MC05823	

Drawn By: Isabel Marmolejo



EXPLANATION

- AUGER HOLE SAMPLE LOCATIONS
- PROPOSED TRENCH LOCATIONS
- PROPOSED EXCAVATION AREAS

N

SCALE: 1 IN = 83 FEET

Feet 0 40 80

SM ENERGY

Figure 4

Osage 34 1H

Proposed Excavation Areas & Depths Map

Eddy County, New Mexico

Project : 112MC05823	
Date : 1/15/2014	
File : H:\GIS\MC05823	

Drawn By: Isabel Marmolejo

TABLES

Table 1
SM Energy
Osage Federal 34 1H
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-1	12/18/2013	0-0.5	X		<20.0	1,010	1,010	<0.100	<0.100	<0.100	0.229	0.229	347
T-1	2/11/2014	1	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	-
	"	2	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	-
	"	3	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	-
AH-2	12/18/2013	0-0.5	X		1,060	1,940	3,000	0.631	21.8	18.2	53.2	93.8	854
T-2	2/11/2014	1	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	-
	"	2	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	-
	"	3	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	-
AH-3	12/18/2013	0-0.5	X		20.0	303	323	0.0910	0.104	0.0620	0.245	0.502	55.3
AH-4	12/18/2013	0-1	X		801	1900	2,701	10.2	66.0	27.7	70.5	174	2,210
T-3	2/11/2014	1	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	608
	"	2	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	544
	"	3	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	496
	"	4	X		-	-	-	-	-	-	-	-	560
	"	5	X		-	-	-	-	-	-	-	-	144
	"	6	X		-	-	-	-	-	-	-	-	720
	"	7	X		-	-	-	-	-	-	-	-	784
	"	8	X		-	-	-	-	-	-	-	-	96.0
	"	9	X		-	-	-	-	-	-	-	-	1,060
	"	10	X		-	-	-	-	-	-	-	-	112
	"	11	X		-	-	-	-	-	-	-	-	80.0
	"	12	X		-	-	-	-	-	-	-	-	<16.0

Table 1
SM Energy
Osage Federal 34 1H
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-5	12/18/2013	0-1	X		1,800	1,460	3,260	20.7	126	58.0	154	359	2,240
T-4	2/11/2014	0	X		-	-	-	-	-	-	-	-	240
	"	1	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	768
	"	2	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	48.0
	"	3	X		<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	<16.0
	"	4	X		-	-	-	-	-	-	-	-	<16.0
	"	5	X		-	-	-	-	-	-	-	-	<16.0
	"	6	X		-	-	-	-	-	-	-	-	<16.0
	"	7	X		-	-	-	-	-	-	-	-	<16.0
	"	8	X		-	-	-	-	-	-	-	-	<16.0
	"	9	X		-	-	-	-	-	-	-	-	<16.0
	"	10	X		-	-	-	-	-	-	-	-	<16.0
	"	11	X		-	-	-	-	-	-	-	-	<16.0
	"	12	X		-	-	-	-	-	-	-	-	<16.0
AH-6	12/18/2013	0-1	X		6,150	9,640	15,790	102	366	106	266	840	407
	"	1-1.5	X		25.4	<50.0	25.4	<0.0200	0.0853	0.154	0.601	0.840	<20.0
	"	2-2.5	X		-	-	-	-	-	-	-	-	<20.0
	"	3-3.5	X		-	-	-	-	-	-	-	-	<20.0
	"	4-4.5	X		-	-	-	-	-	-	-	-	<20.0
	"	5-5.5	X		-	-	-	-	-	-	-	-	25.1

Table 1
SM Energy
Osage Federal 34 1H
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-7	12/18/2013	0-1	X		2,860	1,780	4,640	25.8	113	36.2	93.6	269	3,070
	"	1-1.5	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	0.0543	0.0543	<20.0
	"	2-2.5	X		-	-	-	-	-	-	-	-	<20.0
	"	3-3.5	X		-	-	-	-	-	-	-	-	<20.0
	"	4-4.5	X		-	-	-	-	-	-	-	-	<20.0
	"	5-5.5	X		-	-	-	-	-	-	-	-	80.3
	"	6-6.5	X		-	-	-	-	-	-	-	-	70.3
	"	7-7.5	X		-	-	-	-	-	-	-	-	55.2
	"	8-8.5	X		-	-	-	-	-	-	-	-	25.1
	"	9-9.5	X		-	-	-	-	-	-	-	-	<20.0
AH-8	12/18/2013	0-1	X		6,220	2,580	8,800	85.4	296	88.2	223	693	3,200
	"	1-1.5	X		4,260	1,440	5,700	68.8	223	71.8	194	558	<20.0
		2-2.5	X		5.38	<50.0	5.38	<0.0200	<0.0200	<0.0200	0.0418	0.0418	<20.0
	"	3-3.5	X		-	-	-	-	-	-	-	-	29.6
	"	4-4.5	X		-	-	-	-	-	-	-	-	<20.0
	"	5-5.5	X		-	-	-	-	-	-	-	-	69.1
	"	6-6.5	X		-	-	-	-	-	-	-	-	24.7
AH-9	12/18/2013	0-1	X		4,720	1,610	6,330	51.6	238	69.7	182	541	5,240
	"	1-1.5	X		<4.00	<50.0	<50.0	<0.0200	0.176	0.117	0.419	0.712	3,050
	"	2-2.5	X		-	-	-	-	-	-	-	-	39.3
	"	3-3.5	X		-	-	-	-	-	-	-	-	<20.0
	"	4-4.5	X		-	-	-	-	-	-	-	-	<20.0

Excavation Depths

PHOTOGRAPHS

SM Energy Company
Osage Federal 34 1H
Eddy County, New Mexico

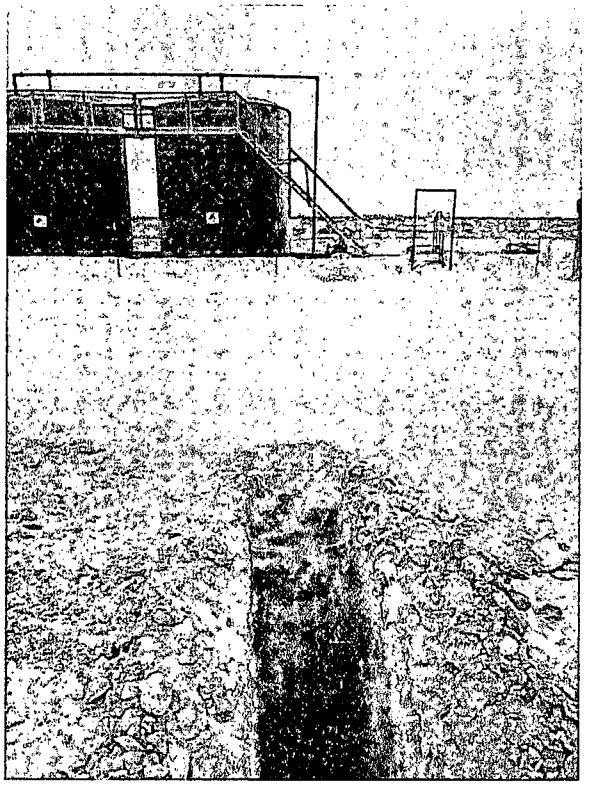


Photo 1. View to the South – Trench in area of AH-1.

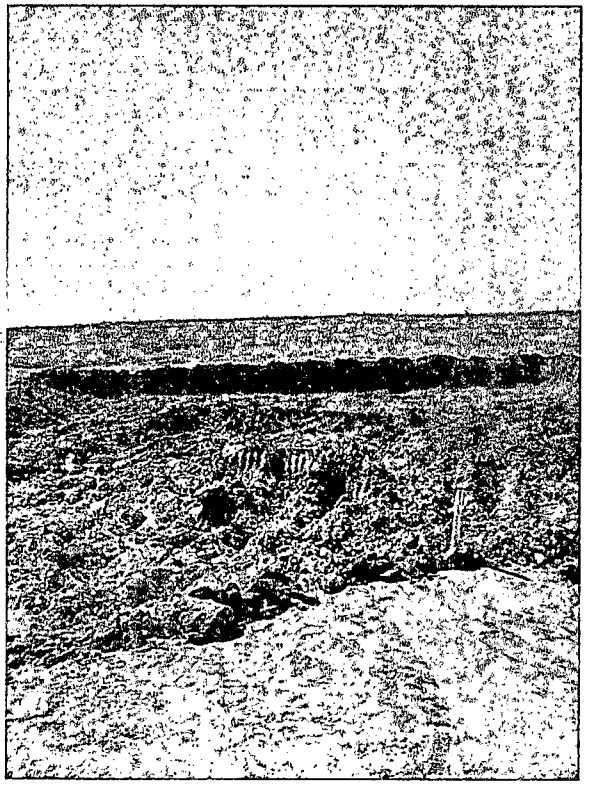


Photo 2. View to the West – Area of AH-8 and AH-9.

TETRA TECH

SM Energy Company
Osage Federal 34 1H
Eddy County, New Mexico

Photo 3. View to the South – Area of AH-1 and AH-2.

Photo 4. View to the East – Area of AH-4 and 5.

TETRA TECH

SM Energy Company
Osage Federal 34 1H
Eddy County, New Mexico

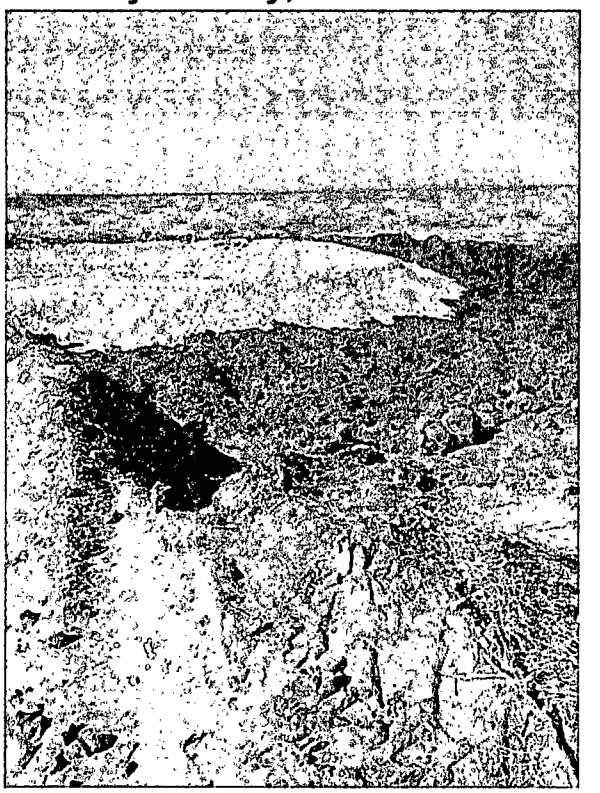


Photo 5.Backfill.

Photo 6. View to the West –Backfill.

TETRA TECH

APPENDIX A

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

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APR 24 2014
NMOCD ARTESIA

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	**Osage 34 Federal 1H**	Facility Type	**Well**

Surface Owner: BLM	Mineral Owner: BLM	Lease No. (API#) 30-015-41508

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	34	19S	29E	450	North	330	East	Eddy

Latitude N 32.62298° **Longitude** W 104.05507°

NATURE OF RELEASE

Type of Release: Foamy mixture of produced, water, gas, oil and sand.	Volume of Release 440 bbls	Volume Recovered 270 bbls
Source of Release: Wellhead (BOP)	Date and Hour of Occurrence 12/13/13	Date and Hour of Discovery Same
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Jim Amos with BLM / Mike Bratcher with NMOCD	
By Whom? Mark Bondy – Richard Choate	Date and Hour 12/13/2013 10:30 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.*

Wellbore fluids were released to the atmosphere, the well pad and small extent of the adjacent pasture. The cause of the incident was the failure of the Annular Blowout Preventer being used to seal the wellbore to the surface. The failed BOP element is being examined by the manufacturer. We have established a policy that requires a pump truck to be connected to all horizontal wells under initial completion to ensure the wellbore stays full of water during the work. Annular BOPs will not be relied upon as a primary wellbore seal.

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.

Signature:	OIL CONSERVATION DIVISION Approved by District Supervisor:	
Printed Name: Tom Elliott as agent for SM Energy		
Title: Project Manager	Approval Date:	Expiration Date:
E-mail Address: Tom.Elliott@TetraTech.com	Conditions of Approval:	Attached ☐
Date: 3-14-2014 Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

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" STREET, BLDG 7-200	Telephone No. (432)688-1709
Facility Name OSAGE 34 FEDERAL 1H	Facility Type WELL

Surface Owner BLM	Mineral Owner BLM	API No. 30-015-41508

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	34	19S	29E	450	NORTH	330	EAST	EDDY

Latitude_____ **Longitude**_____

NATURE OF RELEASE

Type of Release FOAMY MIXTURE OF WATER,GAS,OIL&SAND	Volume of Release 440 PRELIM	Volume Recovered 270
Source of Release WELLHEAD (BOP)	Date and Hour of Occurrence	Date and Hour of Discovery SAME
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? JIM AMOS W/BLM - MIKE BRATCHER W/NMOCD	
By Whom? MARK BONDY - RICHARD CHOATE	Date and Hour 12/13/13 10:30 PM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Wellbore fluids were released to the atmosphere, the well pad and to a small extent, the adjacent pasture. The cause of the incident was the failure of the Annular Blowout Preventer being used to seal the wellbore at the surface. The failed BOP element is being examined by the manufacturer. We have established a policy that requires a pump truck to be connected to all horizontal wells that are under initial completion to ensure the wellbore stays full of water during the work. In addition, Annular Blowout Preventers will not be relied upon as a primary wellbore seal.

Describe Area Affected and Cleanup Action Taken.*

Most of the fluids were contained on the well pad. Cleanup crews, safety specialists and well control specialists were immediately dispatched to the site. At approximately midnight, 6 hours after the event started, the flow from the well subsided to the point it was safe for personnel to approach the well, attach a sealing assembly to the tubing and lower it into the wellhead, sealing off the flow. Most of the discharged fluids ran over to a low spot on the West side of the well pad where they were collected by vacuum trucks.

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: Vickie Martinez

Printed Name: VICKIE MARTINEZ

Title: ENGINEER TECH II

E-mail Address: VMARTINEZ@SM-ENERGY.COM

Date: 12/20/2013 Phone: (432)688-1709

OIL CONSERVATION DIVISION

Approved by Environmental Specialist:

Approval Date: Expiration Date:

Conditions of Approval: Attached ☐

* Attach Additional Sheets If Necessary

OSAGE 34 FEDERAL 1H

C-141 ATTACHMENT

Describe Area Affected and Cleanup Action Taken.* continued:

The cleanup continued throughout the night and into Saturday morning. Jim Amos with the BLM visited the site on Saturday morning to assess the situation and provide some guidance on cleanup strategies. Approximately 17,700 square feet on the pad and another 4,300 off the pad to the west were impacted by the release. Tetra Tech (Environmental testing and consulting company) personnel visited the site Wednesday, December 18, to delineate the extent of the impact. Soil samples were taken to determine hydrocarbon and chloride levels. We are awaiting their recommendations and proposed timing for the final cleanup and remediation of the impacted pasture land. When analysis results are received for the soil samples, they will be evaluated and either a work plan or request for closure will be prepared and submitted for approval. It will likely be mid-January before the work plan or closure request will be ready.

APPENDIX B

Water Well Data
Average Depth to Groundwater (ft)
SM ENERGY COMPANY - OSAGE 34 1H
Eddy County, New Mexico

18 South 28 East

6	5	4 **108**	3	2	1
7	8 **69**	9	10	11	12
18	17	16	15	14	13
19	20	21 **226**	22	23	24
49	29	28	27	26	25
31	32	33	34	35 **65**	36

18 South 29 East

6	5	4	3	2	1
7	8	9	10 **95**	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

18 South 30 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

19 South 28 East

6	5	4	3	2	1
7	8	9 **246** **265**	10	11	12
18 **91**	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

19 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13 **123** **101**
19	20 **62.9**	21	22	23	24
30	29	28	27	26	25
31	32	33	34 SITE 62' 60'	35 121 110	36 **116**

19 South 30 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30 **90**	29	28	27	26	25
31 **115**	32	33	34	35	36

20 South 28 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28 **30**	27 **35**	26	25
31 **115**	32	33 **25** **29**	34	35	36 **19**

20 South 29 East

6	5	4	3 **91**	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20 **62**	21	22	23	24
30 **52**	29	28	27	26	25
31	32	33	34	35	36

20 South 30 East

6	5 **3.5**	4	3 **6**	2	1
7	8	9	10	11	12
18	17	16 **29**	15	14	13
19	20 **29**	21 **150**	22	23	24
30	29	28	27	26	25
31	32 **170**	33 **191**	34	35	36

- New Mexico State Engineers Well Reports
- USGS Well Reports
- Geology and Groundwater Conditions in Southern Eddy, County, NM
- NMOCD - Groundwater Data
- Field water level
- New Mexico Water and Infrastructure Data System
- Tetra Tech Temporary well (TD 180' - Dry Well)

APPENDIX C

TRACEANALYSIS, INC.

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
(BioAquatic) 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)

Tom Elliott
Tetra Tech
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: January 13, 2014

Work Order: 13121935

Project Location: Eddy Co, NM
Project Name: SME/Osage Fed 34 1H
Project Number: TBD

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
349548	AH-1 0-0.5'	soil	2013-12-18	00:00	2013-12-19
349549	AH-2 0-0.5'	soil	2013-12-18	00:00	2013-12-19
349550	AH-3 0-0.5'	soil	2013-12-18	00:00	2013-12-19
349551	AH-4 0-1'	soil	2013-12-18	00:00	2013-12-19
349552	AH-5 0-1'	soil	2013-12-18	00:00	2013-12-19
349553	AH-6 0-1'	soil	2013-12-18	00:00	2013-12-19
349554	AH-6 1-1.5'	soil	2013-12-18	00:00	2013-12-19
349555	AH-6 2-2.5'	soil	2013-12-18	00:00	2013-12-19
349556	AH-6 3-3.5'	soil	2013-12-18	00:00	2013-12-19
349557	AH-6 4-4.5'	soil	2013-12-18	00:00	2013-12-19
349558	AH-6 5-5.5'	soil	2013-12-18	00:00	2013-12-19
349559	AH-7 0-1'	soil	2013-12-18	00:00	2013-12-19
349560	AH-7 1-1.5'	soil	2013-12-18	00:00	2013-12-19
349561	AH-7 2-2.5'	soil	2013-12-18	00:00	2013-12-19
349562	AH-7 3-3.5'	soil	2013-12-18	00:00	2013-12-19
349563	AH-7 4-4.5'	soil	2013-12-18	00:00	2013-12-19

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
349564	AH-7 5-5.5'	soil	2013-12-18	00:00	2013-12-19
349565	AH-7 6-6.5'	soil	2013-12-18	00:00	2013-12-19
349566	AH-7 7-7.5'	soil	2013-12-18	00:00	2013-12-19
349567	AH-7 8-8.5'	soil	2013-12-18	00:00	2013-12-19
349568	AH-7 9-9.5'	soil	2013-12-18	00:00	2013-12-19
349569	AH-8 0-1'	soil	2013-12-18	00:00	2013-12-19
349570	AH-8 1-1.5'	soil	2013-12-18	00:00	2013-12-19
349571	AH-8 2-2.5'	soil	2013-12-18	00:00	2013-12-19
349572	AH-8 3-3.5'	soil	2013-12-18	00:00	2013-12-19
349573	AH-8 4-4.5'	soil	2013-12-18	00:00	2013-12-19
349574	AH-8 5-5.5'	soil	2013-12-18	00:00	2013-12-19
349575	AH-8 6-6.5'	soil	2013-12-18	00:00	2013-12-19
349576	AH-9 0-1'	soil	2013-12-18	00:00	2013-12-19
349577	AH-9 1-1.5'	soil	2013-12-18	00:00	2013-12-19
349578	AH-9 2-2.5'	soil	2013-12-18	00:00	2013-12-19
349579	AH-9 3-3.5'	soil	2013-12-18	00:00	2013-12-19
349580	AH-9 4-4.5'	soil	2013-12-18	00:00	2013-12-19

Report Corrections (Work Order 13121935)

- 1/13/14: Added BTEX to samples 349570 and 349571 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 59 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

Report Contents

Case Narrative

Samples for project SME/Osage Fed 34 1H were received by TraceAnalysis, Inc. on 2013-12-19 and assigned to work order 13121935. Samples for work order 13121935 were received intact at a temperature of 1.4 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	91224	2013-12-20 at 12:31	107810	2013-12-23 at 09:48
BTEX	S 8021B	91258	2013-12-23 at 12:50	107855	2013-12-24 at 13:15
BTEX	S 8021B	91310	2013-12-30 at 14:58	107900	2013-12-30 at 20:21
Chloride (Titration)	SM 4500-Cl B	91411	2014-01-03 at 11:04	108061	2014-01-06 at 16:26
Chloride (Titration)	SM 4500-Cl B	91411	2014-01-03 at 11:04	108134	2014-01-09 at 09:25
Chloride (Titration)	SM 4500-Cl B	91411	2014-01-03 at 11:04	108136	2014-01-09 at 09:54
Chloride (Titration)	SM 4500-Cl B	91411	2014-01-03 at 11:04	108137	2014-01-09 at 10:31
TPH DRO - NEW	S 8015 D	91251	2013-12-23 at 08:35	107808	2013-12-23 at 08:40
TPH DRO - NEW	S 8015 D	91289	2013-12-27 at 12:00	107859	2013-12-27 at 08:49
TPH DRO - NEW	S 8015 D	91365	2014-01-02 at 10:30	107962	2014-01-02 at 14:09
TPH GRO	S 8015 D	91224	2013-12-20 at 12:31	107811	2013-12-23 at 09:51
TPH GRO	S 8015 D	91286	2013-12-24 at 09:00	107889	2013-12-30 at 15:54

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 13121935 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.

Analytical Report

Sample: 349548 - AH-1 0-0.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	107810	Date Analyzed:	2013-12-23	Analyzed By:	AK
Prep Batch:	91224	Sample Preparation:	2013-12-20	Prepared By:	AK

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Benzene		1	<0.100		mg/Kg	5	0.0200
Toluene		1	<0.100		mg/Kg	5	0.0200
Ethylbenzene	U	1	<0.100		mg/Kg	5	0.0200
Xylene		1	**0.229**		mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT) [1]	Qsr	Qsr	1.31	mg/Kg	5	2.00	66	70 - 130
4-Bromofluorobenzene (4-BFB)			1.76	mg/Kg	5	2.00	88	70 - 130

Sample: 349548 - AH-1 0-0.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108061	Date Analyzed:	2014-01-06	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**347**		mg/Kg	5	4.00

Sample: 349548 - AH-1 0-0.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	107808	Date Analyzed:	2013-12-23	Analyzed By:	KC
Prep Batch:	91251	Sample Preparation:		Prepared By:	KC

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
DRO		1	**1010**		mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	152	mg/Kg	5	100	152	70 - 130

Sample: 349548 - AH-1 0-0.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	107811	Date Analyzed:	2013-12-23	Analyzed By:	AK
Prep Batch:	91224	Sample Preparation:	2013-12-20	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	<20.0	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.05	mg/Kg	5	2.00	102	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	4.61	mg/Kg	5	2.00	230	70 - 130

Sample: 349549 - AH-2 0-0.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	107810	Date Analyzed:	2013-12-23	Analyzed By:	AK
Prep Batch:	91224	Sample Preparation:	2013-12-20	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**0.631**	mg/Kg	10	0.0200
Toluene		1	**21.8**	mg/Kg	10	0.0200
Ethylbenzene		1	**18.2**	mg/Kg	10	0.0200
Xylene		1	**53.2**	mg/Kg	10	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[2] Qsr	Qsr	1.26	mg/Kg	10	2.00	63	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	10.1	mg/Kg	10	2.00	505	70 - 130

Sample: 349549 - AH-2 0-0.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108061	Date Analyzed:	2014-01-06	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**854**		mg/Kg	5	4.00

Sample: 349549 - AH-2 0-0.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	107808	Date Analyzed:	2013-12-23	Analyzed By:	KC
Prep Batch:	91251	Sample Preparation:		Prepared By:	KC

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
DRO		1	**1940**		mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	167	mg/Kg	1	100	167	70 - 130

Sample: 349549 - AH-2 0-0.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	107811	Date Analyzed:	2013-12-23	Analyzed By:	AK
Prep Batch:	91224	Sample Preparation:	2013-12-20	Prepared By:	AK

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
GRO		1	**1060**		mg/Kg	10	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.86	mg/Kg	10	2.00	93	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	31.3	mg/Kg	10	2.00	1565	70 - 130

Sample: 349550 - AH-3 0-0.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	107810	Date Analyzed:	2013-12-23	Analyzed By:	AK
Prep Batch:	91224	Sample Preparation:	2013-12-20	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**0.0910**	mg/Kg	2	0.0200
Toluene		1	**0.104**	mg/Kg	2	0.0200
Ethylbenzene		1	**0.0620**	mg/Kg	2	0.0200
Xylene		1	**0.245**	mg/Kg	2	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[3] Qsr	Qsr	1.21	mg/Kg	2	2.00	60	70 - 130
4-Bromofluorobenzene (4-BFB)			1.65	mg/Kg	2	2.00	82	70 - 130

Sample: 349550 - AH-3 0-0.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108061	Date Analyzed:	2014-01-06	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**55.3**	mg/Kg	5	4.00

Sample: 349550 - AH-3 0-0.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	107808	Date Analyzed:	2013-12-23	Analyzed By:	KC
Prep Batch:	91251	Sample Preparation:		Prepared By:	KC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**303**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			120	mg/Kg	1	100	120	70 - 130

Sample: 349550 - AH-3 0-0.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	107811	Date Analyzed:	2013-12-23	Analyzed By:	AK
Prep Batch:	91224	Sample Preparation:	2013-12-20	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	**20.0**	mg/Kg	2	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.72	mg/Kg	2	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			2.50	mg/Kg	2	2.00	125	70 - 130

Sample: 349551 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	107810	Date Analyzed:	2013-12-23	Analyzed By:	AK
Prep Batch:	91224	Sample Preparation:	2013-12-20	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**10.2**	mg/Kg	5	0.0200
Toluene	Je	1	**66.0**	mg/Kg	5	0.0200
Ethylbenzene		1	**27.7**	mg/Kg	5	0.0200
Xylene	Je	1	**70.5**	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.24	mg/Kg	5	2.00	62	70 - 130
4-Bromofluorobenzene (4-BFB)			14.7	mg/Kg	5	2.00	735	70 - 130

Sample: 349551 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108061	Date Analyzed:	2014-01-06	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

continued ...

sample 349551 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2210**	mg/Kg	5	4.00

Sample: 349551 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	107808	Date Analyzed:	2013-12-23	Analyzed By:	KC
Prep Batch:	91251	Sample Preparation:		Prepared By:	KC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**1900**	mg/Kg	5	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		222	mg/Kg	5	100	222	70 - 130

Sample: 349551 - AH-4 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	107889	Date Analyzed:	2013-12-30	Analyzed By:	AK
Prep Batch:	91286	Sample Preparation:	2013-12-24	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**801**	mg/Kg	100	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.05	mg/Kg	100	2.00	102	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	16.5	mg/Kg	100	2.00	825	70 - 130

Sample: 349552 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	107810	Date Analyzed:	2013-12-23	Analyzed By:	AK
Prep Batch:	91224	Sample Preparation:	2013-12-20	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**20.7**	mg/Kg	10	0.0200
Toluene	Je	1	**126**	mg/Kg	10	0.0200
Ethylbenzene		1	**58.0**	mg/Kg	10	0.0200
Xylene	Je	1	**154**	mg/Kg	10	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.24	mg/Kg	10	2.00	62	70 - 130
4-Bromofluorobenzene (4-BFB)			29.6	mg/Kg	10	2.00	1480	70 - 130

Sample: 349552 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108061	Date Analyzed:	2014-01-06	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2240**	mg/Kg	10	4.00

Sample: 349552 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	107808	Date Analyzed:	2013-12-23	Analyzed By:	KC
Prep Batch:	91251	Sample Preparation:		Prepared By:	KC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**1460**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	196	mg/Kg	5	100	196	70 - 130

Sample: 349552 - AH-5 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	107889	Date Analyzed:	2013-12-30	Analyzed By:	AK
Prep Batch:	91286	Sample Preparation:	2013-12-24	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**1800**	mg/Kg	100	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		3.05	mg/Kg	100	2.00	152	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		36.8	mg/Kg	100	2.00	1840	70 - 130

Sample: 349553 - AH-6 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	107810	Date Analyzed:	2013-12-23	Analyzed By:	AK
Prep Batch:	91224	Sample Preparation:	2013-12-20	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**102**	mg/Kg	50	0.0200
Toluene		1	**366**	mg/Kg	50	0.0200
Ethylbenzene		1	**106**	mg/Kg	50	0.0200
Xylene		1	**266**	mg/Kg	50	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.08	mg/Kg	50	2.00	54	70 - 130
4-Bromofluorobenzene (4-BFB)			43.3	mg/Kg	50	2.00	2165	70 - 130

Sample: 349553 - AH-6 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108061	Date Analyzed:	2014-01-06	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

continued ...

sample 349553 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**407**	mg/Kg	5	4.00

Sample: 349553 - AH-6 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	107808	Date Analyzed:	2013-12-23	Analyzed By:	KC
Prep Batch:	91251	Sample Preparation:		Prepared By:	KC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**9640**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	614	mg/Kg	5	100	614	70 - 130

Sample: 349553 - AH-6 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	107889	Date Analyzed:	2013-12-30	Analyzed By:	AK
Prep Batch:	91286	Sample Preparation:	2013-12-24	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**6150**	mg/Kg	100	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.56	mg/Kg	100	2.00	78	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	45.9	mg/Kg	100	2.00	2295	70 - 130

Sample: 349554 - AH-6 1-1.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	107855	Date Analyzed:	2013-12-24	Analyzed By:	AK
Prep Batch:	91258	Sample Preparation:	2013-12-23	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene		1	**0.0853**	mg/Kg	1	0.0200
Ethylbenzene		1	**0.154**	mg/Kg	1	0.0200
Xylene		1	**0.601**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.97	mg/Kg	1	2.00	98	70 - 130
4-Bromofluorobenzene (4-BFB)			2.12	mg/Kg	1	2.00	106	70 - 130

Sample: 349554 - AH-6 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108061	Date Analyzed:	2014-01-06	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

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

Sample: 349554 - AH-6 1-1.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	107962	Date Analyzed:	2014-01-02	Analyzed By:	KC
Prep Batch:	91365	Sample Preparation:	2014-01-02	Prepared By:	KC

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

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

Sample: 349554 - AH-6 1-1.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	107889	Date Analyzed:	2013-12-30	Analyzed By:	AK
Prep Batch:	91286	Sample Preparation:	2013-12-24	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	**25.4**	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.82	mg/Kg	1	2.00	91	70 - 130
4-Bromofluorobenzene (4-BFB)			2.00	mg/Kg	1	2.00	100	70 - 130

Sample: 349555 - AH-6 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108061	Date Analyzed:	2014-01-06	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

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

Sample: 349556 - AH-6 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108061	Date Analyzed:	2014-01-06	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

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

Sample: 349557 - AH-6 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108061	Date Analyzed:	2014-01-06	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

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

Sample: 349558 - AH-6 5-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108134	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**25.1**	mg/Kg	5	4.00

Sample: 349559 - AH-7 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	107810	Date Analyzed:	2013-12-23	Analyzed By:	AK
Prep Batch:	91224	Sample Preparation:	2013-12-20	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**25.8**	mg/Kg	10	0.0200
Toluene	Je	1	**113**	mg/Kg	10	0.0200
Ethylbenzene		1	**36.2**	mg/Kg	10	0.0200
Xylene	Je	1	**93.6**	mg/Kg	10	0.0200

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	4 Qsr	Qsr		1.05	mg/Kg	10	2.00	52	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		12.9	mg/Kg	10	2.00	645	70 - 130

Sample: 349559 - AH-7 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108134	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**3070**	mg/Kg	10	4.00

Sample: 349559 - AH-7 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	107808	Date Analyzed:	2013-12-23	Analyzed By:	KC
Prep Batch:	91251	Sample Preparation:		Prepared By:	KC

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**1780**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr Qsr		188	mg/Kg	5	100	188	70 - 130

Sample: 349559 - AH-7 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	107889	Date Analyzed:	2013-12-30	Analyzed By:	AK
Prep Batch:	91286	Sample Preparation:	2013-12-24	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	**2860**	mg/Kg	100	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.87	mg/Kg	100	2.00	94	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr Qsr		48.4	mg/Kg	100	2.00	2420	70 - 130

Sample: 349560 - AH-7 1-1.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	107855	Date Analyzed:	2013-12-24	Analyzed By:	AK
Prep Batch:	91258	Sample Preparation:	2013-12-23	Prepared By:	AK

Parameter	Flag	Cert	Result	RL 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		1	**0.0543**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.92	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			2.01	mg/Kg	1	2.00	100	70 - 130

Sample: 349560 - AH-7 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108134	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

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

Sample: 349560 - AH-7 1-1.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	107859	Date Analyzed:	2013-12-27	Analyzed By:	KC
Prep Batch:	91289	Sample Preparation:	2013-12-26	Prepared By:	KC

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

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

Sample: 349560 - AH-7 1-1.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	107889	Date Analyzed:	2013-12-30	Analyzed By:	AK
Prep Batch:	91286	Sample Preparation:	2013-12-24	Prepared By:	AK

Parameter	Flag	Cert	Result	RL 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)			2.34	mg/Kg	1	2.00	117	70 - 130
4-Bromofluorobenzene (4-BFB)			2.31	mg/Kg	1	2.00	116	70 - 130

Sample: 349561 - AH-7 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108134	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

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

Sample: 349562 - AH-7 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108134	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

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

Sample: 349563 - AH-7 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108134	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

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

Sample: 349564 - AH-7 5-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108134	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**80.3**	mg/Kg	5	4.00

Sample: 349565 - AH-7 6-6.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108134	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**70.3**	mg/Kg	5	4.00

Sample: 349566 - AH-7 7-7.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108134	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**55.2**	mg/Kg	5	4.00

Sample: 349567 - AH-7 8-8.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108134	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**25.1**	mg/Kg	5	4.00

Sample: 349568 - AH-7 9-9.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108136	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

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

Sample: 349569 - AH-8 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	107810	Date Analyzed:	2013-12-23	Analyzed By:	AK
Prep Batch:	91224	Sample Preparation:	2013-12-20	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		I	**85.4**	mg/Kg	50	0.0200
Toluene		I	**296**	mg/Kg	50	0.0200
Ethylbenzene		I	**88.2**	mg/Kg	50	0.0200

continued ...

sample 349569 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Xylene		1	**223**	mg/Kg	50	0.0200

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	5 Qsr	Qsr		0.903	mg/Kg	50	2.00	45	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		34.3	mg/Kg	50	2.00	1715	70 - 130

Sample: 349569 - AH-8 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108136	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**3200**	mg/Kg	10	4.00

Sample: 349569 - AH-8 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	107808	Date Analyzed:	2013-12-23	Analyzed By:	KC
Prep Batch:	91251	Sample Preparation:		Prepared By:	KC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**2580**	mg/Kg	5	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		231	mg/Kg	5	100	231	70 - 130

Sample: 349569 - AH-8 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	107811	Date Analyzed:	2013-12-23	Analyzed By:	AK
Prep Batch:	91224	Sample Preparation:	2013-12-20	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**6220**	mg/Kg	50	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	6 Qsr	Qsr		1.18	mg/Kg	50	2.00	59	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		108	mg/Kg	50	2.00	5400	70 - 130

Sample: 349570 - AH-8 1-1.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	107855	Date Analyzed:	2013-12-24	Analyzed By:	AK
Prep Batch:	91258	Sample Preparation:	2013-12-23	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**68.8**	mg/Kg	10	0.0200
Toluene		1	**223**	mg/Kg	10	0.0200
Ethylbenzene		1	**71.8**	mg/Kg	10	0.0200
Xylene		1	**194**	mg/Kg	10	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			19.1	mg/Kg	10	20.0	96	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	34.7	mg/Kg	10	20.0	174	70 - 130

Sample: 349570 - AH-8 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108136	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

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

Sample: 349570 - AH-8 1-1.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	107859	Date Analyzed:	2013-12-27	Analyzed By:	KC
Prep Batch:	91289	Sample Preparation:	2013-12-26	Prepared By:	KC

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**1440**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr Qsr		167	mg/Kg	1	100	167	70 - 130

Sample: 349570 - AH-8 1-1.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	107889	Date Analyzed:	2013-12-30	Analyzed By:	AK
Prep Batch:	91286	Sample Preparation:	2013-12-24	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	**4260**	mg/Kg	100	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.53	mg/Kg	100	2.00	76	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr Qsr		33.8	mg/Kg	100	2.00	1690	70 - 130

Sample: 349571 - AH-8 2-2.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	107900	Date Analyzed:	2013-12-30	Analyzed By:	AK
Prep Batch:	91310	Sample Preparation:	2013-12-30	Prepared By:	AK

Parameter	Flag	Cert	Result	RL 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		1	**0.0418**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.94	mg/Kg	1	2.00	97	70 - 130
4-Bromofluorobenzene (4-BFB)			2.07	mg/Kg	1	2.00	104	70 - 130

Sample: 349571 - AH-8 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108136	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

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

Sample: 349571 - AH-8 2-2.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	107859	Date Analyzed:	2013-12-27	Analyzed By:	KC
Prep Batch:	91289	Sample Preparation:	2013-12-26	Prepared By:	KC

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

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

Sample: 349571 - AH-8 2-2.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	107889	Date Analyzed:	2013-12-30	Analyzed By:	AK
Prep Batch:	91286	Sample Preparation:	2013-12-24	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**5.38**	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.82	mg/Kg	1	2.00	91	70 - 130
4-Bromofluorobenzene (4-BFB)			2.26	mg/Kg	1	2.00	113	70 - 130

Sample: 349572 - AH-8 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108136	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**29.6**	mg/Kg	5	4.00

Sample: 349573 - AH-8 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108136	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

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

Sample: 349574 - AH-8 5-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108136	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**69.1**	mg/Kg	5	4.00

Sample: 349575 - AH-8 6-6.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108136	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**24.7**	mg/Kg	5	4.00

Sample: 349576 - AH-9 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	107810	Date Analyzed:	2013-12-23	Analyzed By:	AK
Prep Batch:	91224	Sample Preparation:	2013-12-20	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**51.6**	mg/Kg	50	0.0200
Toluene		1	**238**	mg/Kg	50	0.0200
Ethylbenzene		1	**69.7**	mg/Kg	50	0.0200
Xylene		1	**182**	mg/Kg	50	0.0200

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		84.3	mg/Kg	50	2.00	4215	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		23.1	mg/Kg	50	2.00	1155	70 - 130

Sample: 349576 - AH-9 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108136	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**5240**	mg/Kg	10	4.00

Sample: 349576 - AH-9 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	107808	Date Analyzed:	2013-12-23	Analyzed By:	KC
Prep Batch:	91251	Sample Preparation:		Prepared By:	KC

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**1610**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr Qsr		176	mg/Kg	5	100	176	70 - 130

Sample: 349576 - AH-9 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	107811	Date Analyzed:	2013-12-23	Analyzed By:	AK
Prep Batch:	91224	Sample Preparation:	2013-12-20	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	**4720**	mg/Kg	50	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	7 Qsr	Qsr	1.07	mg/Kg	50	2.00	54	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	80.6	mg/Kg	50	2.00	4030	70 - 130

Sample: 349577 - AH-9 1-1.5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	107855	Date Analyzed:	2013-12-24	Analyzed By:	AK
Prep Batch:	91258	Sample Preparation:	2013-12-23	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene		1	**0.176**	mg/Kg	1	0.0200
Ethylbenzene		1	**0.117**	mg/Kg	1	0.0200
Xylene		1	**0.419**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.91	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			2.13	mg/Kg	1	2.00	106	70 - 130

Sample: 349577 - AH-9 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108136	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**3050**	mg/Kg	10	4.00

Sample: 349577 - AH-9 1-1.5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	107859	Date Analyzed:	2013-12-27	Analyzed By:	KC
Prep Batch:	91289	Sample Preparation:	2013-12-26	Prepared By:	KC

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			117	mg/Kg	1	100	117	70 - 130

Sample: 349577 - AH-9 1-1.5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	107889	Date Analyzed:	2013-12-30	Analyzed By:	AK
Prep Batch:	91286	Sample Preparation:	2013-12-24	Prepared By:	AK

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)			1.86	mg/Kg	1	2.00	93	70 - 130
4-Bromofluorobenzene (4-BFB)			1.98	mg/Kg	1	2.00	99	70 - 130

Sample: 349578 - AH-9 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108137	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**39.3**	mg/Kg	5	4.00

Sample: 349579 - AH-9 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108137	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

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

Sample: 349580 - AH-9 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108137	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.86	mg/Kg	1	2.00	93	70 - 130
4-Bromofluorobenzene (4-BFB)			1.98	mg/Kg	1	2.00	99	70 - 130

Sample: 349578 - AH-9 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108137	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**39.3**	mg/Kg	5	4.00

Sample: 349579 - AH-9 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108137	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

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

Sample: 349580 - AH-9 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	108137	Date Analyzed:	2014-01-09	Analyzed By:	AR
Prep Batch:	91411	Sample Preparation:	2014-01-03	Prepared By:	AR

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

Method Blanks

Method Blank (1) QC Batch: 107808

QC Batch: 107808 | Date Analyzed: 2013-12-23 | Analyzed By: KC
Prep Batch: 91251 | QC Preparation: 2013-12-23 | Prepared By: KC

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<6.88	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			109	mg/Kg	1	100	109	88.3 - 126.1

Method Blank (1) QC Batch: 107810

QC Batch: 107810 | Date Analyzed: 2013-12-23 | Analyzed By: AK
Prep Batch: 91224 | QC Preparation: 2013-12-20 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00533	mg/Kg	0.02
Toluene		1	<0.00645	mg/Kg	0.02
Ethylbenzene		1	<0.0116	mg/Kg	0.02
Xylene		1	<0.00874	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.45	mg/Kg	1	2.00	72	70 - 130
4-Bromofluorobenzene (4-BFB)			1.47	mg/Kg	1	2.00	74	70 - 130

Method Blank (1) QC Batch: 107811

QC Batch: 107811 | Date Analyzed: 2013-12-23 | Analyzed By: AK
Prep Batch: 91224 | QC Preparation: 2013-12-20 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<2.32	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.13	mg/Kg	1	2.00	106	70 - 130
4-Bromofluorobenzene (4-BFB)			2.20	mg/Kg	1	2.00	110	70 - 130

Method Blank (1) QC Batch: 107855

QC Batch: 107855 | Date Analyzed: 2013-12-24 | Analyzed By: AK
Prep Batch: 91258 | QC Preparation: 2013-12-23 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00354	mg/Kg	0.02
Toluene		1	<0.00966	mg/Kg	0.02
Ethylbenzene		1	<0.00790	mg/Kg	0.02
Xylene		1	<0.00667	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.94	mg/Kg	1	2.00	97	70 - 130
4-Bromofluorobenzene (4-BFB)			2.03	mg/Kg	1	2.00	102	70 - 130

Method Blank (1) QC Batch: 107859

QC Batch: 107859 | Date Analyzed: 2013-12-27 | Analyzed By: KC
Prep Batch: 91289 | QC Preparation: 2013-12-27 | Prepared By: KC

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<6.88	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			116	mg/Kg	1	100	116	88.3 - 126.1

Method Blank (1) QC Batch: 107889

QC Batch: 107889 | Date Analyzed: 2013-12-30 | Analyzed By: AK
Prep Batch: 91286 | QC Preparation: 2013-12-24 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<2.32	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.92	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			1.89	mg/Kg	1	2.00	94	70 - 130

Method Blank (1) QC Batch: 107900

QC Batch: 107900 | Date Analyzed: 2013-12-30 | Analyzed By: AK
Prep Batch: 91310 | QC Preparation: 2013-12-30 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00354	mg/Kg	0.02
Toluene		1	<0.00966	mg/Kg	0.02
Ethylbenzene		1	<0.00790	mg/Kg	0.02
Xylene		1	<0.00667	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.03	mg/Kg	1	2.00	102	70 - 130
4-Bromofluorobenzene (4-BFB)			2.14	mg/Kg	1	2.00	107	70 - 130

Method Blank (1) QC Batch: 107962

QC Batch: 107962 | Date Analyzed: 2014-01-02 | Analyzed By: KC
Prep Batch: 91365 | QC Preparation: 2014-01-02 | Prepared By: KC

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	10.2	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			115	mg/Kg	1	100	115	88.3 - 126.1

Method Blank (1) QC Batch: 108061

QC Batch: 108061 Date Analyzed: 2014-01-06 Analyzed By: AR
Prep Batch: 91411 QC Preparation: 2014-01-03 Prepared By: AR

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

Method Blank (1) QC Batch: 108134

QC Batch: 108134 Date Analyzed: 2014-01-09 Analyzed By: AR
Prep Batch: 91411 QC Preparation: 2014-01-03 Prepared By: AR

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

Method Blank (1) QC Batch: 108136

QC Batch: 108136 Date Analyzed: 2014-01-09 Analyzed By: AR
Prep Batch: 91411 QC Preparation: 2014-01-03 Prepared By: AR

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

Method Blank (1) QC Batch: 108137

QC Batch: 108137 Date Analyzed: 2014-01-09 Analyzed By: AR
Prep Batch: 91411 QC Preparation: 2014-01-03 Prepared By: AR

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

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 107808 | Date Analyzed: 2013-12-23 | Analyzed By: KC
Prep Batch: 91251 | QC Preparation: 2013-12-23 | Prepared By: KC

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	292	mg/Kg	1	250	<6.88	117	79.4 - 120.1

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		1	291	mg/Kg	1	250	<6.88	116	79.4 - 120.1	0	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	112	112	mg/Kg	1	100	112	112	92.9 - 137.7

Laboratory Control Spike (LCS-1)

QC Batch: 107810 | Date Analyzed: 2013-12-23 | Analyzed By: AK
Prep Batch: 91224 | QC Preparation: 2013-12-20 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.56	mg/Kg	1	2.00	<0.00533	78	70 - 130
Toluene		1	1.74	mg/Kg	1	2.00	<0.00645	87	70 - 130
Ethylbenzene		1	1.66	mg/Kg	1	2.00	<0.0116	83	70 - 130
Xylene		1	5.14	mg/Kg	1	6.00	<0.00874	86	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
Benzene		1	1.60	mg/Kg	1	2.00	<0.00533	80	70 - 130	3	20
Toluene		1	1.60	mg/Kg	1	2.00	<0.00645	80	70 - 130	8	20
Ethylbenzene		1	1.64	mg/Kg	1	2.00	<0.0116	82	70 - 130	1	20
Xylene		1	4.98	mg/Kg	1	6.00	<0.00874	83	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
Trifluorotoluene (TFT)	1.83	1.46	mg/Kg	1	2.00	92	73	70 - 130
4-Bromofluorobenzene (4-BFB)	1.94	1.59	mg/Kg	1	2.00	97	80	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 107811 | Date Analyzed: 2013-12-23 | Analyzed By: AK
Prep Batch: 91224 | QC Preparation: 2013-12-20 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	15.2	mg/Kg	1	20.0	<2.32	76	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
GRO		1	16.9	mg/Kg	1	20.0	<2.32	84	70 - 130	11	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)	1.94	2.12	mg/Kg	1	2.00	97	106	70 - 130
4-Bromofluorobenzene (4-BFB)	2.42	2.46	mg/Kg	1	2.00	121	123	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 107855 | Date Analyzed: 2013-12-24 | Analyzed By: AK
Prep Batch: 91258 | QC Preparation: 2013-12-23 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.83	mg/Kg	1	2.00	<0.00354	92	70 - 130
Toluene		1	1.84	mg/Kg	1	2.00	<0.00966	92	70 - 130
Ethylbenzene		1	2.09	mg/Kg	1	2.00	<0.00790	104	70 - 130
Xylene		1	6.35	mg/Kg	1	6.00	<0.00667	106	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
Benzene		1	1.75	mg/Kg	1	2.00	<0.00354	88	70 - 130	5	20

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Toluene		1	1.77	mg/Kg	1	2.00	<0.00966	88	70 - 130	4	20
Ethylbenzene		1	2.02	mg/Kg	1	2.00	<0.00790	101	70 - 130	4	20
Xylene		1	6.11	mg/Kg	1	6.00	<0.00667	102	70 - 130	4	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)	1.93	1.92	mg/Kg	1	2.00	96	96	70 - 130
4-Bromofluorobenzene (4-BFB)	2.10	2.11	mg/Kg	1	2.00	105	106	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 107859 | Date Analyzed: 2013-12-27 | Analyzed By: KC
Prep Batch: 91289 | QC Preparation: 2013-12-27 | Prepared By: KC

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	278	mg/Kg	1	250	<6.88	111	79.4 - 120.1

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		1	277	mg/Kg	1	250	<6.88	111	79.4 - 120.1	0	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	118	118	mg/Kg	1	100	118	118	92.9 - 137.7

Laboratory Control Spike (LCS-1)

QC Batch: 107889 | Date Analyzed: 2013-12-30 | Analyzed By: AK
Prep Batch: 91286 | QC Preparation: 2013-12-24 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.9	mg/Kg	1	20.0	<2.32	90	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
GRO		1	17.8	mg/Kg	1	20.0	<2.32	89	70 - 130	1	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)	1.94	1.81	mg/Kg	1	2.00	97	90	70 - 130
4-Bromofluorobenzene (4-BFB)	2.13	2.08	mg/Kg	1	2.00	106	104	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 107900 | Date Analyzed: 2013-12-30 | Analyzed By: AK
Prep Batch: 91310 | QC Preparation: 2013-12-30 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.64	mg/Kg	1	2.00	<0.00354	82	70 - 130
Toluene		1	1.65	mg/Kg	1	2.00	<0.00966	82	70 - 130
Ethylbenzene		1	1.82	mg/Kg	1	2.00	<0.00790	91	70 - 130
Xylene		1	5.56	mg/Kg	1	6.00	<0.00667	93	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
Benzene		1	1.76	mg/Kg	1	2.00	<0.00354	88	70 - 130	7	20
Toluene		1	1.76	mg/Kg	1	2.00	<0.00966	88	70 - 130	6	20
Ethylbenzene		1	2.00	mg/Kg	1	2.00	<0.00790	100	70 - 130	9	20
Xylene		1	6.04	mg/Kg	1	6.00	<0.00667	101	70 - 130	8	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)	2.26	2.12	mg/Kg	1	2.00	113	106	70 - 130
4-Bromofluorobenzene (4-BFB)	2.45	2.31	mg/Kg	1	2.00	122	116	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 107962 | Date Analyzed: 2014-01-02 | Analyzed By: KC
Prep Batch: 91365 | QC Preparation: 2014-01-02 | Prepared By: KC

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	276	mg/Kg	1	250	10.2	106	79.4 - 120.1

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		1	284	mg/Kg	1	250	10.2	110	79.4 - 120.1	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	117	118	mg/Kg	1	100	117	118	92.9 - 137.7

Laboratory Control Spike (LCS-1)

QC Batch: 108061 | Date Analyzed: 2014-01-06 | Analyzed By: AR
Prep Batch: 91411 | QC Preparation: 2014-01-03 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2630	mg/Kg	1	2500	<3.85	105	89.7 - 115.9

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			2570	mg/Kg	1	2500	<3.85	103	89.7 - 115.9	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: 108134 | Date Analyzed: 2014-01-09 | Analyzed By: AR
Prep Batch: 91411 | QC Preparation: 2014-01-03 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2480	mg/Kg	1	2500	<3.85	99	89.7 - 115.9

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			2620	mg/Kg	1	2500	<3.85	105	89.7 - 115.9	6	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: 108136 | Date Analyzed: 2014-01-09 | Analyzed By: AR
Prep Batch: 91411 | QC Preparation: 2014-01-03 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2340	mg/Kg	1	2500	<3.85	94	89.7 - 115.9

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			2420	mg/Kg	1	2500	<3.85	97	89.7 - 115.9	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: 108137 | Date Analyzed: 2014-01-09 | Analyzed By: AR
Prep Batch: 91411 | QC Preparation: 2014-01-03 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2630	mg/Kg	1	2500	<3.85	105	89.7 - 115.9

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			2470	mg/Kg	1	2500	<3.85	99	89.7 - 115.9	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: 349344

QC Batch: 107808 | Date Analyzed: 2013-12-23 | Analyzed By: KC
Prep Batch: 91251 | QC Preparation: 2013-12-23 | Prepared By: KC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	273	mg/Kg	1	250	<6.88	109	64.8 - 149.9

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		1	265	mg/Kg	1	250	<6.88	106	64.8 - 149.9	3	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	108	104	mg/Kg	1	100	108	104	85.4 - 147.7

Matrix Spike (MS-1) Spiked Sample: 349344

QC Batch: 107810 | Date Analyzed: 2013-12-23 | Analyzed By: AK
Prep Batch: 91224 | QC Preparation: 2013-12-20 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.52	mg/Kg	1	2.00	<0.00533	76	70 - 130
Toluene		1	1.54	mg/Kg	1	2.00	<0.00645	77	70 - 130
Ethylbenzene		1	1.57	mg/Kg	1	2.00	<0.0116	78	70 - 130
Xylene		1	4.72	mg/Kg	1	6.00	<0.00874	79	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
Benzene		1	1.47	mg/Kg	1	2.00	<0.00533	74	70 - 130	3	20
Toluene		1	1.50	mg/Kg	1	2.00	<0.00645	75	70 - 130	3	20
Ethylbenzene		1	1.50	mg/Kg	1	2.00	<0.0116	75	70 - 130	5	20
Xylene		1	4.57	mg/Kg	1	6.00	<0.00874	76	70 - 130	3	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)	Qsr	Qsr	1.33	1.28	mg/Kg	1	2	66	64	70 - 130
4-Bromofluorobenzene (4-BFB)			1.55	1.49	mg/Kg	1	2	78	74	70 - 130

Matrix Spike (MS-1) Spiked Sample: 349344

QC Batch: 107811 | Date Analyzed: 2013-12-23 | Analyzed By: AK
Prep Batch: 91224 | QC Preparation: 2013-12-20 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	15.4	mg/Kg	1	20.0	<2.32	77	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
GRO		1	15.2	mg/Kg	1	20.0	<2.32	76	70 - 130	1	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)	1.95	1.91	mg/Kg	1	2	98	96	70 - 130
4-Bromofluorobenzene (4-BFB)	2.38	2.41	mg/Kg	1	2	119	120	70 - 130

Matrix Spike (MS-1) Spiked Sample: 349304

QC Batch: 107855 | Date Analyzed: 2013-12-24 | Analyzed By: AK
Prep Batch: 91258 | QC Preparation: 2013-12-23 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.71	mg/Kg	1	2.00	<0.00354	86	70 - 130
Toluene		1	1.75	mg/Kg	1	2.00	<0.00966	88	70 - 130
Ethylbenzene		1	2.00	mg/Kg	1	2.00	<0.00790	100	70 - 130
Xylene		1	6.05	mg/Kg	1	6.00	<0.00667	101	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
Benzene		1	1.66	mg/Kg	1	2.00	<0.00354	83	70 - 130	3	20
Toluene		1	1.68	mg/Kg	1	2.00	<0.00966	84	70 - 130	4	20
Ethylbenzene		1	1.91	mg/Kg	1	2.00	<0.00790	96	70 - 130	5	20
Xylene		1	5.73	mg/Kg	1	6.00	<0.00667	96	70 - 130	5	20

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

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matrix spikes continued ...

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.92	1.92	mg/Kg	1	2	96	96	70 - 130
4-Bromofluorobenzene (4-BFB)	2.10	2.11	mg/Kg	1	2	105	106	70 - 130

Matrix Spike (MS-1) Spiked Sample: 349560

QC Batch: 107859 | Date Analyzed: 2013-12-27 | Analyzed By: KC
Prep Batch: 91289 | QC Preparation: 2013-12-27 | Prepared By: KC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	265	mg/Kg	1	250	9.83	102	64.8 - 149.9

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		1	269	mg/Kg	1	250	9.83	104	64.8 - 149.9	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	115	117	mg/Kg	1	100	115	117	85.4 - 147.7

Matrix Spike (MS-1) Spiked Sample: 349560

QC Batch: 107889 | Date Analyzed: 2013-12-30 | Analyzed By: AK
Prep Batch: 91286 | QC Preparation: 2013-12-24 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.2	mg/Kg	1	20.0	2.84	72	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
GRO		1	17.8	mg/Kg	1	20.0	2.84	75	70 - 130	3	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)	2.20	1.76	mg/Kg	1	2	110	88	70 - 130
4-Bromofluorobenzene (4-BFB)	2.48	1.99	mg/Kg	1	2	124	100	70 - 130

Matrix Spike (MS-1) Spiked Sample: 350228

QC Batch: 107900 | Date Analyzed: 2013-12-30 | Analyzed By: AK
Prep Batch: 91310 | QC Preparation: 2013-12-30 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.57	mg/Kg	1	2.00	<0.00354	78	70 - 130
Toluene		1	1.58	mg/Kg	1	2.00	<0.00966	79	70 - 130
Ethylbenzene		1	1.76	mg/Kg	1	2.00	<0.00790	88	70 - 130
Xylene		1	5.32	mg/Kg	1	6.00	<0.00667	89	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
Benzene		1	1.58	mg/Kg	1	2.00	<0.00354	79	70 - 130	1	20
Toluene		1	1.59	mg/Kg	1	2.00	<0.00966	80	70 - 130	1	20
Ethylbenzene		1	1.78	mg/Kg	1	2.00	<0.00790	89	70 - 130	1	20
Xylene		1	5.39	mg/Kg	1	6.00	<0.00667	90	70 - 130	1	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)	2.06	1.99	mg/Kg	1	2	103	100	70 - 130
4-Bromofluorobenzene (4-BFB)	2.22	2.19	mg/Kg	1	2	111	110	70 - 130

Matrix Spike (MS-1) Spiked Sample: 350260

QC Batch: 107962 | Date Analyzed: 2014-01-02 | Analyzed By: KC
Prep Batch: 91365 | QC Preparation: 2014-01-02 | Prepared By: KC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	250	mg/Kg	1	250	7.67	97	64.8 - 149.9

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			263	mg/Kg	1	250	7.67	105	64.8 - 149.9	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
n-Tricosane	105	112	mg/Kg	1	100	105	112	85.4 - 147.7

Matrix Spike (MS-1) Spiked Sample: 349557

QC Batch: 108061 | Date Analyzed: 2014-01-06 | Analyzed By: AR
Prep Batch: 91411 | QC Preparation: 2014-01-03 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2450	mg/Kg	5	2500	<19.2	98	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			2580	mg/Kg	5	2500	<19.2	103	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: 349567

QC Batch: 108134 | Date Analyzed: 2014-01-09 | Analyzed By: AR
Prep Batch: 91411 | QC Preparation: 2014-01-03 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2580	mg/Kg	5	2500	25.1	102	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			2670	mg/Kg	5	2500	25.1	106	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: 349577

QC Batch: 108136 | Date Analyzed: 2014-01-09 | Analyzed By: AR
Prep Batch: 91411 | QC Preparation: 2014-01-03 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			5540	mg/Kg	10	2500	3050	100	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			5700	mg/Kg	10	2500	3050	106	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: 349587

QC Batch: 108137 | Date Analyzed: 2014-01-09 | Analyzed By: AR
Prep Batch: 91411 | QC Preparation: 2014-01-03 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			5310	mg/Kg	10	2500	2900	96	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			5500	mg/Kg	10	2500	2900	104	78.9 - 121	4	20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 107808 | Date Analyzed: 2013-12-23 | Analyzed By: KC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	254	102	80 - 120	2013-12-23

Standard (CCV-2)

QC Batch: 107808 | Date Analyzed: 2013-12-23 | Analyzed By: KC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	284	114	80 - 120	2013-12-23

Standard (CCV-3)

QC Batch: 107808 | Date Analyzed: 2013-12-23 | Analyzed By: KC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	273	109	80 - 120	2013-12-23

Standard (CCV-1)

QC Batch: 107810 | Date Analyzed: 2013-12-23 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0860	86	80 - 120	2013-12-23
Toluene		1	mg/kg	0.100	0.0847	85	80 - 120	2013-12-23

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standard continued ...

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Ethylbenzene		1	mg/kg	0.100	0.0814	81	80 - 120	2013-12-23
Xylene		1	mg/kg	0.300	0.246	82	80 - 120	2013-12-23

Standard (CCV-2)

QC Batch: 107810 Date Analyzed: 2013-12-23 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0852	85	80 - 120	2013-12-23
Toluene		1	mg/kg	0.100	0.0832	83	80 - 120	2013-12-23
Ethylbenzene		1	mg/kg	0.100	0.0797	80	80 - 120	2013-12-23
Xylene		1	mg/kg	0.300	0.240	80	80 - 120	2013-12-23

Standard (CCV-3)

QC Batch: 107810 Date Analyzed: 2013-12-23 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0864	86	80 - 120	2013-12-23
Toluene		1	mg/kg	0.100	0.0842	84	80 - 120	2013-12-23
Ethylbenzene		1	mg/kg	0.100	0.0796	80	80 - 120	2013-12-23
Xylene		1	mg/kg	0.300	0.240	80	80 - 120	2013-12-23

Standard (CCV-1)

QC Batch: 107811 Date Analyzed: 2013-12-23 Analyzed By: AK

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	91	80 - 120	2013-12-23

Standard (CCV-2)

QC Batch: 107811 | Date Analyzed: 2013-12-23 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.812	81	80 - 120	2013-12-23

Standard (CCV-3)

QC Batch: 107811 | Date Analyzed: 2013-12-23 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.837	84	80 - 120	2013-12-23

Standard (CCV-1)

QC Batch: 107855 | Date Analyzed: 2013-12-24 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0955	96	80 - 120	2013-12-24
Toluene		1	mg/kg	0.100	0.0931	93	80 - 120	2013-12-24
Ethylbenzene		1	mg/kg	0.100	0.100	100	80 - 120	2013-12-24
Xylene		1	mg/kg	0.300	0.304	101	80 - 120	2013-12-24

Standard (CCV-2)

QC Batch: 107855 | Date Analyzed: 2013-12-24 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0909	91	80 - 120	2013-12-24
Toluene		1	mg/kg	0.100	0.0891	89	80 - 120	2013-12-24
Ethylbenzene		1	mg/kg	0.100	0.0962	96	80 - 120	2013-12-24
Xylene		1	mg/kg	0.300	0.291	97	80 - 120	2013-12-24

Standard (CCV-3)

QC Batch: 107855 | Date Analyzed: 2013-12-24 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0942	94	80 - 120	2013-12-24
Toluene		1	mg/kg	0.100	0.0918	92	80 - 120	2013-12-24
Ethylbenzene		1	mg/kg	0.100	0.0975	98	80 - 120	2013-12-24
Xylene		1	mg/kg	0.300	0.295	98	80 - 120	2013-12-24

Standard (CCV-1)

QC Batch: 107859 | Date Analyzed: 2013-12-27 | Analyzed By: KC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	266	106	80 - 120	2013-12-27

Standard (CCV-2)

QC Batch: 107859 | Date Analyzed: 2013-12-27 | Analyzed By: KC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	277	111	80 - 120	2013-12-27

Standard (CCV-1)

QC Batch: 107889 | Date Analyzed: 2013-12-30 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.13	113	80 - 120	2013-12-30

Standard (CCV-2)

QC Batch: 107889 | Date Analyzed: 2013-12-30 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.812	81	80 - 120	2013-12-30

Standard (CCV-3)

QC Batch: 107889 | Date Analyzed: 2013-12-30 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.02	102	80 - 120	2013-12-30

Standard (CCV-1)

QC Batch: 107900 | Date Analyzed: 2013-12-30 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0933	93	80 - 120	2013-12-30
Toluene		1	mg/kg	0.100	0.0908	91	80 - 120	2013-12-30
Ethylbenzene		1	mg/kg	0.100	0.0971	97	80 - 120	2013-12-30
Xylene		1	mg/kg	0.300	0.293	98	80 - 120	2013-12-30

Standard (CCV-2)

QC Batch: 107900 | Date Analyzed: 2013-12-30 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0909	91	80 - 120	2013-12-30
Toluene		1	mg/kg	0.100	0.0876	88	80 - 120	2013-12-30
Ethylbenzene		1	mg/kg	0.100	0.0932	93	80 - 120	2013-12-30
Xylene		1	mg/kg	0.300	0.285	95	80 - 120	2013-12-30

Standard (CCV-1)

QC Batch: 107962 | Date Analyzed: 2014-01-02 | Analyzed By: KC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	283	113	80 - 120	2014-01-02

Standard (CCV-2)

QC Batch: 107962 | Date Analyzed: 2014-01-02 | Analyzed By: KC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	283	113	80 - 120	2014-01-02

Standard (CCV-1)

QC Batch: 108061 | Date Analyzed: 2014-01-06 | 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	102	102	85 - 115	2014-01-06

Standard (CCV-2)

QC Batch: 108061 | Date Analyzed: 2014-01-06 | 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	98.1	98	85 - 115	2014-01-06

Standard (CCV-1)

QC Batch: 108134 | Date Analyzed: 2014-01-09 | 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	98.3	98	85 - 115	2014-01-09

Standard (CCV-2)

QC Batch: 108134 Date Analyzed: 2014-01-09 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	102	102	85 - 115	2014-01-09

Standard (CCV-1)

QC Batch: 108136 Date Analyzed: 2014-01-09 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	2014-01-09

Standard (CCV-2)

QC Batch: 108136 Date Analyzed: 2014-01-09 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	2014-01-09

Standard (CCV-1)

QC Batch: 108137 Date Analyzed: 2014-01-09 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	2014-01-09

Standard (CCV-2)

QC Batch: 108137 Date Analyzed: 2014-01-09 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	98.6	99	85 - 115	2014-01-09

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	T104704392-13-7	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.
Jc	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
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 Surrogate low due to possible dilution out of sample.
2 Surrogate low due to possible dilution out of sample.
3 Surrogate low due to possible dilution out of sample.
4 Surrogate low due to possible dilution out of sample.
5 Surrogate low due to possible dilution out of sample.
6 Surrogate low due to possible dilution out of sample.
7 Surrogate low due to possible dilution out of sample.

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

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

CLIENT NAME: SM Energy

SITE MANAGER: Tom Elliott

PROJECT NO.:

PROJECT NAME: SM Energy - Osage Fed 34-1H Eddy Co. NM

LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
549548	12/18		S		X	AH 1 (0-6")	1	N			X		X	X											X				
549						AH 2 (0-6")							X	X															
550						AH 3 (0-6")							X	X															
551						AH 4 (0-1')							X	X															
552						AH 5 (0-1')							X	X															
553						AH 6 (0-1')							X	X															
554						(1-1.5')																							
555						(2-2.5')																							
556						(3-3.5')																							
557						(4-4.5')																							

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature) Adrian Garcia — Date: 12/19/13 Time: 12:38 — RECEIVED BY: (Signature) — Date: 12/19/13 Time: 12:38

SAMPLED BY: (Print & Initial) adrian Garcia — Date: 12/18/13 Time:

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

SAMPLE SHIPPED BY: (Circle) FEDEX BUS ~~HAND DELIVERED~~ UPS — AIRBILL #: — OTHER:

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

TETRA TECH CONTACT PERSON: Ike Tavarez / Tom Elliott — Results by:

RECEIVING LABORATORY: Trace — RECEIVED BY: (Signature)

ADDRESS: — CITY: Midland — STATE: — ZIP: — CONTACT: — PHONE: — DATE: — TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 1.40

REMARKS: Run 0-1 for TPH and BTEX, run deeper sample if Benzene exceeds 10 or Total BTEX exceeds 50, run deeper sample if TPH exceeds 1000 mg/kg

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

Analysis Request of Chain of Custody Record

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

CLIENT NAME: SM Energy

SITE MANAGER: Tom Elliott

PROJECT NO.:

PROJECT NAME: SM Energy - Osage Fed 34-1H Eddy Co. NM

LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD / TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
558	12/18		S		X	AH 6 (5-5.5')	1	N			X														X				
559						AH 7 (0-1')							X	X															
560						(1-1.5')																							
561						(2-2.5')																							
562						(3-3.5')																							
563						(4-4.5')																							
564						(5-5.5')																							
565						(6-6.5')																							
566						(7-7.5')																							
567						(8-8.5')																							

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature)	Date:	Time:	RECEIVED BY: (Signature)	Date:	Time:
Adrian Garcia	12/18/13	12:38		12/18/13	12:38
RELINQUISHED BY: (Signature)	Date:	Time:	RECEIVED BY: (Signature)	Date:	Time:
RELINQUISHED BY: (Signature)	Date:	Time:	RECEIVED BY: (Signature)	Date:	Time:

SAMPLED BY: (Print & Initial) Adrian Garcia / AG — Date: 12/18/13 Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: — OTHER:

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:

TETRA TECH CONTACT PERSON: Ike Tavarez / Tom Elliott

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 1.4C

REMARKS: Run 0-1 for TPH and BTEX, run deeper sample if Benzene exceeds 10 or Total BTEX exceeds 50, run deeper sample if TPH exceeds 1000 mg/kg

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

KC

Analysis Request of Chain of Custody Record

PAGE: 3 OF: 4

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: SM Energy
SITE MANAGER: Tom Elliott
PROJECT NO.:
PROJECT NAME: SM Energy - Diage Fed. 34-1H Eddy Co. NM

LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
568	12/18		S		X	AH 7 (9-9.5')	1	N			X													X				
569						AH 8 (0-1')							X	X														
570						(1-1.5')																						
571						(2-2.5')																						
572						(3-3.5')																						
573						(4-4.5')																						
574						(5-5.5')																						
575						(6-6.5')																						
576						AH 9 (0-1)							X	X														
577						(1-1.5')																						

RELINQUISHED BY: (Signature) Adrian Garcia	Date: 12/19/13 Time: 1238	RECEIVED BY: (Signature)	Date: 12/19/13 Time: 12:38
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:

SAMPLED BY: (Print & Initial) Adrian Garcia /AG — Date: 12/18/13 Time:

SAMPLE SHIPPED BY: (Circle)
FEDEX BUS
(HAND DELIVERED) UPS

AIRBILL #:
OTHER:

TETRA TECH CONTACT PERSON: Ike Tavarez / Tom Elliott

Results by:

RUSH Charges Authorized: Yes No

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: ZIP:
CONTACT: PHONE: DATE: TIME:
RECEIVED BY: (Signature)

SAMPLE CONDITION WHEN RECEIVED: 1.40

REMARKS: Run 0-1 for TPH and BTEX, run deeper sample if Benzene exceeds 10 or Total BTEX exceeds 50, run deeper if TPH exceeds 1000 mg/Kg

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

12-13-13

Analysis Request of Chain of Custody Record

PAGE: 4 OF: 4

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: SM Energy

SITE MANAGER: Tom Elliott

PROJECT NO.:

PROJECT NAME: SM Energy - Osage fed 34-1H Eddy Co. NM

LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
578	12/18		S		X	AH 9 (2-2.5)	1	N			X														X				
579	↓		↓		↓	(3-3.5)	↓	↓			↓														↓				
580	↓		↓		↓	(4-4.5)	↓	↓			↓														↓				

RELINQUISHED BY: (Signature) Adrian Garcia — Date: 12/19/13 Time: 1238

RECEIVED BY: (Signature) — Date: 12/19/13 Time: 12:38

SAMPLED BY: (Print & Initial) Adrian Garcia / AG — Date: 12/18/13 Time:

RELINQUISHED BY: (Signature) — Date: Time:

RECEIVED BY: (Signature) — Date: Time:

SAMPLE SHIPPED BY: (Circle)
FEDEX BUS
HAND DELIVERED UPS

AIRBILL #:

OTHER:

RELINQUISHED BY: (Signature) — Date: Time:

RECEIVED BY: (Signature) — Date: Time:

TETRA TECH CONTACT PERSON: Ike Tavarez / Tom Elliott

Results by:

RECEIVING LABORATORY: Trace

ADDRESS:

CITY: Midland STATE: ZIP:

CONTACT: PHONE:

RECEIVED BY: (Signature)

DATE: TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 1,4°

REMARKS: Run 0-1 for BTEX and TPH, run deeper samples if Benzene exceeds 10 or Total BTEX exceeds 50 run deeper samples if TPH exceeds 1000 mg/kg.

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

KC

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

February 12, 2014

TOM ELLIOT

TETRA TECH

1910 N. BIG SPRING STREET

MIDLAND, TX 79705

RE: OSAGE 34 - 1H

Enclosed are the results of analyses for samples received by the laboratory on 02/11/14 13:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Mike Snyder

Organic Supervisor

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TETRA TECH
TOM ELLIOT
1910 N. BIG SPRING STREET
MIDLAND TX, 79705
Fax To: (432) 682-3946

Received:	02/11/2014	Sampling Date:	02/11/2014
Reported:	02/12/2014	Sampling Type:	Soil
Project Name:	OSAGE 34 - 1H	Sampling Condition:	Cool & Intact
Project Number:	112MC05823	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: T1 (AH1) 1' (H400415-02)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/12/2014	ND	2.38	119	2.00	5.12	
Toluene*	<0.050	0.050	02/12/2014	ND	2.36	118	2.00	4.91	
Ethylbenzene*	<0.050	0.050	02/12/2014	ND	2.35	118	2.00	4.78	
Total Xylenes*	<0.150	0.150	02/12/2014	ND	6.91	115	6.00	4.13	
Total BTEX	<0.300	0.300	02/12/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIL *119 %* *89.4-126*

TPH 8015M mg/kg **Analyzed By: ms**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/12/2014	ND	180	90.0	200	12.6	
DRO >C10-C28	<10.0	10.0	02/12/2014	ND	174	87.0	200	7.24	
EXT DRO >C28-C35	<10.0	10.0	02/12/2014	ND					

Surrogate: 1-Chlorooctane *98.0 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *98.9 %* *63.6-154*

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Mike Snyder, Organic Supervisor

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TETRA TECH
TOM ELLIOT
1910 N. BIG SPRING STREET
MIDLAND TX, 79705
Fax To: (432) 682-3946

Received:	02/11/2014	Sampling Date:	02/11/2014
Reported:	02/12/2014	Sampling Type:	Soil
Project Name:	OSAGE 34 - 1H	Sampling Condition:	Cool & Intact
Project Number:	112MC05823	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: T1 (AH1) 2' (H400415-03)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/12/2014	ND	2.38	119	2.00	5.12	
Toluene*	<0.050	0.050	02/12/2014	ND	2.36	118	2.00	4.91	
Ethylbenzene*	<0.050	0.050	02/12/2014	ND	2.35	118	2.00	4.78	
Total Xylenes*	<0.150	0.150	02/12/2014	ND	6.91	115	6.00	4.13	
Total BTEX	<0.300	0.300	02/12/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID *119 %* *89.4-126*

TPH 8015M mg/kg **Analyzed By: ms**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/12/2014	ND	180	90.0	200	12.6	
DRO >C10-C28	<10.0	10.0	02/12/2014	ND	174	87.0	200	7.24	
EXT DRO >C28-C35	<10.0	10.0	02/12/2014	ND					

Surrogate: 1-Chlorooctane *100 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *102 %* *63.6-154*

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Analytical Results For:

TETRA TECH
TOM ELLIOT
1910 N. BIG SPRING STREET
MIDLAND TX, 79705
Fax To: (432) 682-3946

Received:	02/11/2014	Sampling Date:	02/11/2014
Reported:	02/12/2014	Sampling Type:	Soil
Project Name:	OSAGE 34 - 1H	Sampling Condition:	Cool & Intact
Project Number:	112MC05823	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: T1 (AH1) 3' (H400415-04)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/12/2014	ND	2.38	119	2.00	5.12	
Toluene*	<0.050	0.050	02/12/2014	ND	2.36	118	2.00	4.91	
Ethylbenzene*	<0.050	0.050	02/12/2014	ND	2.35	118	2.00	4.78	
Total Xylenes*	<0.150	0.150	02/12/2014	ND	6.91	115	6.00	4.13	
Total BTEX	<0.300	0.300	02/12/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIL *119 %* *89.4-126*

TPH 8015M mg/kg **Analyzed By: ms**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/12/2014	ND	180	90.0	200	12.6	
DRO >C10-C28	<10.0	10.0	02/12/2014	ND	174	87.0	200	7.24	
EXT DRO >C28-C35	<10.0	10.0	02/12/2014	ND					

Surrogate: 1-Chlorooctane *104 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *104 %* *63.6-154*

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Analytical Results For:

TETRA TECH
TOM ELLIOT
1910 N. BIG SPRING STREET
MIDLAND TX, 79705
Fax To: (432) 682-3946

Received:	02/11/2014	Sampling Date:	02/11/2014
Reported:	02/12/2014	Sampling Type:	Soil
Project Name:	OSAGE 34 - 1H	Sampling Condition:	Cool & Intact
Project Number:	112MC05823	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: T2 (AH2) 1' (H400415-13)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/12/2014	ND	2.38	119	2.00	5.12	
Toluene*	<0.050	0.050	02/12/2014	ND	2.36	118	2.00	4.91	
Ethylbenzene*	<0.050	0.050	02/12/2014	ND	2.35	118	2.00	4.78	
Total Xylenes*	<0.150	0.150	02/12/2014	ND	6.91	115	6.00	4.13	
Total BTEX	<0.300	0.300	02/12/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIL *119 %* *89.4-126*

TPH 8015M mg/kg **Analyzed By: ms**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/12/2014	ND	180	90.0	200	12.6	
DRO >C10-C28	<10.0	10.0	02/12/2014	ND	174	87.0	200	7.24	
EXT DRO >C28-C35	<10.0	10.0	02/12/2014	ND					

Surrogate: 1-Chlorooctane *68.7 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *68.3 %* *63.6-154*

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Analytical Results For:

TETRA TECH
TOM ELLIOT
1910 N. BIG SPRING STREET
MIDLAND TX, 79705
Fax To: (432) 682-3946

Received:	02/11/2014	Sampling Date:	02/11/2014
Reported:	02/12/2014	Sampling Type:	Soil
Project Name:	OSAGE 34 - 1H	Sampling Condition:	Cool & Intact
Project Number:	112MC05823	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: T2 (AH2) 2' (H400415-14)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/12/2014	ND	2.38	119	2.00	5.12	
Toluene*	<0.050	0.050	02/12/2014	ND	2.36	118	2.00	4.91	
Ethylbenzene*	<0.050	0.050	02/12/2014	ND	2.35	118	2.00	4.78	
Total Xylenes*	<0.150	0.150	02/12/2014	ND	6.91	115	6.00	4.13	
Total BTEX	<0.300	0.300	02/12/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID *119 %* *89.4-126*

TPH 8015M mg/kg **Analyzed By: ms**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/12/2014	ND	180	90.0	200	12.6	
DRO >C10-C28	<10.0	10.0	02/12/2014	ND	174	87.0	200	7.24	
EXT DRO >C28-C35	<10.0	10.0	02/12/2014	ND					

Surrogate: 1-Chlorooctane *73.1 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *71.9 %* *63.6-154*

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Analytical Results For:

TETRA TECH
TOM ELLIOT
1910 N. BIG SPRING STREET
MIDLAND TX, 79705
Fax To: (432) 682-3946

Received:	02/11/2014	Sampling Date:	02/11/2014
Reported:	02/12/2014	Sampling Type:	Soil
Project Name:	OSAGE 34 - 1H	Sampling Condition:	Cool & Intact
Project Number:	112MC05823	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: T2 (AH2) 3' (H400415-15)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/12/2014	ND	2.38	119	2.00	5.12	
Toluene*	<0.050	0.050	02/12/2014	ND	2.36	118	2.00	4.91	
Ethylbenzene*	<0.050	0.050	02/12/2014	ND	2.35	118	2.00	4.78	
Total Xylenes*	<0.150	0.150	02/12/2014	ND	6.91	115	6.00	4.13	
Total BTEX	<0.300	0.300	02/12/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIL *120 %* *89.4-126*

TPH 8015M mg/kg **Analyzed By: ms**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/12/2014	ND	180	90.0	200	12.6	
DRO >C10-C28	<10.0	10.0	02/12/2014	ND	174	87.0	200	7.24	
EXT DRO >C28-C35	<10.0	10.0	02/12/2014	ND					

Surrogate: 1-Chlorooctane *90.4 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *90.8 %* *63.6-154*

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Analytical Results For:

TETRA TECH
TOM ELLIOT
1910 N. BIG SPRING STREET
MIDLAND TX, 79705
Fax To: (432) 682-3946

Received:	02/11/2014	Sampling Date:	02/11/2014
Reported:	02/12/2014	Sampling Type:	Soil
Project Name:	OSAGE 34 - 1H	Sampling Condition:	Cool & Intact
Project Number:	112MC05823	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: T3 (AH4) 1' (H400415-24)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/12/2014	ND	2.38	119	2.00	5.12	
Toluene*	<0.050	0.050	02/12/2014	ND	2.36	118	2.00	4.91	
Ethylbenzene*	<0.050	0.050	02/12/2014	ND	2.35	118	2.00	4.78	
Total Xylenes*	<0.150	0.150	02/12/2014	ND	6.91	115	6.00	4.13	
Total BTEX	<0.300	0.300	02/12/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID *120 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**608**	16.0	02/12/2014	ND	400	100	400	3.92	

TPH 8015M mg/kg **Analyzed By: ms**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/12/2014	ND	180	90.0	200	12.6	
DRO >C10-C28	<10.0	10.0	02/12/2014	ND	174	87.0	200	7.24	
EXT DRO >C28-C35	<10.0	10.0	02/12/2014	ND					

Surrogate: 1-Chlorooctane *67.5 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *68.1 %* *63.6-154*

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Analytical Results For:

TETRA TECH
TOM ELLIOT
1910 N. BIG SPRING STREET
MIDLAND TX, 79705
Fax To: (432) 682-3946

Received:	02/11/2014	Sampling Date:	02/11/2014
Reported:	02/12/2014	Sampling Type:	Soil
Project Name:	OSAGE 34 - 1H	Sampling Condition:	Cool & Intact
Project Number:	112MC05823	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: T3 (AH4) 2' (H400415-25)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/12/2014	ND	2.38	119	2.00	5.12	
Toluene*	<0.050	0.050	02/12/2014	ND	2.36	118	2.00	4.91	
Ethylbenzene*	<0.050	0.050	02/12/2014	ND	2.35	118	2.00	4.78	
Total Xylenes*	<0.150	0.150	02/12/2014	ND	6.91	115	6.00	4.13	
Total BTEX	<0.300	0.300	02/12/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIL *120 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**544**	16.0	02/12/2014	ND	400	100	400	3.92	

TPH 8015M mg/kg **Analyzed By: ms**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/12/2014	ND	180	90.0	200	12.6	
DRO >C10-C28	<10.0	10.0	02/12/2014	ND	174	87.0	200	7.24	
EXT DRO >C28-C35	<10.0	10.0	02/12/2014	ND					

Surrogate: 1-Chlorooctane *74.3 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *75.5 %* *63.6-154*

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Analytical Results For:

TETRA TECH
TOM ELLIOT
1910 N. BIG SPRING STREET
MIDLAND TX, 79705
Fax To: (432) 682-3946

Received:	02/11/2014	Sampling Date:	02/11/2014
Reported:	02/12/2014	Sampling Type:	Soil
Project Name:	OSAGE 34 - 1H	Sampling Condition:	Cool & Intact
Project Number:	112MC05823	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: T3 (AH4) 3' (H400415-26)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/12/2014	ND	2.38	119	2.00	5.12	
Toluene*	<0.050	0.050	02/12/2014	ND	2.36	118	2.00	4.91	
Ethylbenzene*	<0.050	0.050	02/12/2014	ND	2.35	118	2.00	4.78	
Total Xylenes*	<0.150	0.150	02/12/2014	ND	6.91	115	6.00	4.13	
Total BTEX	<0.300	0.300	02/12/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIL *120 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**496**	16.0	02/12/2014	ND	400	100	400	3.92	

TPH 8015M mg/kg **Analyzed By: ms**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/12/2014	ND	180	90.0	200	12.6	
DRO >C10-C28	<10.0	10.0	02/12/2014	ND	174	87.0	200	7.24	
EXT DRO >C28-C35	<10.0	10.0	02/12/2014	ND					

Surrogate: 1-Chlorooctane *79.6 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *79.8 %* *63.6-154*

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Analytical Results For:

TETRA TECH
TOM ELLIOT
1910 N. BIG SPRING STREET
MIDLAND TX, 79705
Fax To: (432) 682-3946

Received:	02/11/2014	Sampling Date:	02/11/2014
Reported:	02/12/2014	Sampling Type:	Soil
Project Name:	OSAGE 34 - 1H	Sampling Condition:	Cool & Intact
Project Number:	112MC05823	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: T3 (AH4) 4' (H400415-27)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**560**	16.0	02/12/2014	ND	400	100	400	3.92	

Sample ID: T3 (AH4) 4' (H400415-28)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**144**	16.0	02/12/2014	ND	400	100	400	3.92	

Sample ID: T3 (AH4) 6' (H400415-29)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**720**	16.0	02/12/2014	ND	400	100	400	3.92	

Sample ID: T3 (AH4) 7' (H400415-30)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**784**	16.0	02/12/2014	ND	400	100	400	3.92	

Sample ID: T3 (AH4) 8' (H400415-31)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**96.0**	16.0	02/12/2014	ND	400	100	400	3.92	

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Analytical Results For:

TETRA TECH
TOM ELLIOT
1910 N. BIG SPRING STREET
MIDLAND TX, 79705
Fax To: (432) 682-3946

Received:	02/11/2014	Sampling Date:	02/11/2014
Reported:	02/12/2014	Sampling Type:	Soil
Project Name:	OSAGE 34 - 1H	Sampling Condition:	Cool & Intact
Project Number:	112MC05823	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: T3 (AH4) 9' (H400415-32)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1060**	16.0	02/12/2014	ND	400	100	400	3.92	

Sample ID: T3 (AH4) 10' (H400415-33)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**112**	16.0	02/12/2014	ND	400	100	400	3.92	

Sample ID: T3 (AH4) 11' (H400415-34)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	02/12/2014	ND	400	100	400	3.92	

Sample ID: T3 (AH4) 12' (H400415-35)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	02/12/2014	ND	400	100	400	3.92	

Sample ID: T4 (AH5) 0' (H400415-36)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**240**	16.0	02/12/2014	ND	400	100	400	3.92	

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Analytical Results For:

TETRA TECH
TOM ELLIOT
1910 N. BIG SPRING STREET
MIDLAND TX, 79705
Fax To: (432) 682-3946

Received:	02/11/2014	Sampling Date:	02/11/2014
Reported:	02/12/2014	Sampling Type:	Soil
Project Name:	OSAGE 34 - 1H	Sampling Condition:	Cool & Intact
Project Number:	112MC05823	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: T4 (AH5) 1' (H400415-37)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/12/2014	ND	2.38	119	2.00	5.12	
Toluene*	<0.050	0.050	02/12/2014	ND	2.36	118	2.00	4.91	
Ethylbenzene*	<0.050	0.050	02/12/2014	ND	2.35	118	2.00	4.78	
Total Xylenes*	<0.150	0.150	02/12/2014	ND	6.91	115	6.00	4.13	
Total BTEX	<0.300	0.300	02/12/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIL *120 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**768**	16.0	02/12/2014	ND	400	100	400	3.92	

TPH 8015M mg/kg **Analyzed By: ms**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/12/2014	ND	180	90.0	200	12.6	
DRO >C10-C28	<10.0	10.0	02/12/2014	ND	174	87.0	200	7.24	
EXT DRO >C28-C35	<10.0	10.0	02/12/2014	ND					

Surrogate: 1-Chlorooctane *82.8 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *81.4 %* *63.6-154*

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Mike Snyder, Organic Supervisor

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TETRA TECH
TOM ELLIOT
1910 N. BIG SPRING STREET
MIDLAND TX, 79705
Fax To: (432) 682-3946

Received:	02/11/2014	Sampling Date:	02/11/2014
Reported:	02/12/2014	Sampling Type:	Soil
Project Name:	OSAGE 34 - 1H	Sampling Condition:	Cool & Intact
Project Number:	112MC05823	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: T4 (AH5) 2' (H400415-38)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/12/2014	ND	2.38	119	2.00	5.12	
Toluene*	<0.050	0.050	02/12/2014	ND	2.36	118	2.00	4.91	
Ethylbenzene*	<0.050	0.050	02/12/2014	ND	2.35	118	2.00	4.78	
Total Xylenes*	<0.150	0.150	02/12/2014	ND	6.91	115	6.00	4.13	
Total BTEX	<0.300	0.300	02/12/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID *120 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	02/12/2014	ND	400	100	400	3.92	

TPH 8015M mg/kg **Analyzed By: ms**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/12/2014	ND	180	90.0	200	12.6	
DRO >C10-C28	<10.0	10.0	02/12/2014	ND	174	87.0	200	7.24	
EXT DRO >C28-C35	<10.0	10.0	02/12/2014	ND					

Surrogate: 1-Chlorooctane *71.8 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *74.0 %* *63.6-154*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder, Organic Supervisor

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TETRA TECH
TOM ELLIOT
1910 N. BIG SPRING STREET
MIDLAND TX, 79705
Fax To: (432) 682-3946

Received:	02/11/2014	Sampling Date:	02/11/2014
Reported:	02/12/2014	Sampling Type:	Soil
Project Name:	OSAGE 34 - 1H	Sampling Condition:	Cool & Intact
Project Number:	112MC05823	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: T4 (AH5) 3' (H400415-39)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/12/2014	ND	2.38	119	2.00	5.12	
Toluene*	<0.050	0.050	02/12/2014	ND	2.36	118	2.00	4.91	
Ethylbenzene*	<0.050	0.050	02/12/2014	ND	2.35	118	2.00	4.78	
Total Xylenes*	<0.150	0.150	02/12/2014	ND	6.91	115	6.00	4.13	
Total BTEX	<0.300	0.300	02/12/2014	ND					

Surrogate: 4-Bromofluorobenzene (PIL *119 %* *89.4-126*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	02/12/2014	ND	400	100	400	3.92	

TPH 8015M mg/kg **Analyzed By: ms**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	02/12/2014	ND	180	90.0	200	12.6	
DRO >C10-C28	<10.0	10.0	02/12/2014	ND	174	87.0	200	7.24	
EXT DRO >C28-C35	<10.0	10.0	02/12/2014	ND					

Surrogate: 1-Chlorooctane *69.8 %* *65.2-140*

Surrogate: 1-Chlorooctadecane *70.9 %* *63.6-154*

Cardinal Laboratories

*=Accredited Analyte

Mike Snyder, Organic Supervisor

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TETRA TECH
TOM ELLIOT
1910 N. BIG SPRING STREET
MIDLAND TX, 79705
Fax To: (432) 682-3946

Received:	02/11/2014	Sampling Date:	02/11/2014
Reported:	02/12/2014	Sampling Type:	Soil
Project Name:	OSAGE 34 - 1H	Sampling Condition:	Cool & Intact
Project Number:	112MC05823	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: T4 (AH5) 4' (H400415-40)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	02/12/2014	ND	400	100	400	0.00	

Sample ID: T4 (AH5) 5' (H400415-41)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	02/12/2014	ND	400	100	400	0.00	

Sample ID: T4 (AH5) 6' (H400415-42)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	02/12/2014	ND	400	100	400	0.00	

Sample ID: T4 (AH5) 7' (H400415-43)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	02/12/2014	ND	400	100	400	0.00	

Sample ID: T4 (AH5) 8' (H400415-44)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	02/12/2014	ND	400	100	400	0.00	

Cardinal Laboratories *=Accredited Analyte

Mike Snyder, Organic Supervisor

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TETRA TECH
TOM ELLIOT
1910 N. BIG SPRING STREET
MIDLAND TX, 79705
Fax To: (432) 682-3946

Received:	02/11/2014	Sampling Date:	02/11/2014
Reported:	02/12/2014	Sampling Type:	Soil
Project Name:	OSAGE 34 - 1H	Sampling Condition:	Cool & Intact
Project Number:	112MC05823	Sample Received By:	Jodi Henson
Project Location:	EDDY CO., NM		

Sample ID: T4 (AH5) 9' (H400415-45)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	02/12/2014	ND	400	100	400	0.00	

Sample ID: T4 (AH5) 10' (H400415-46)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	02/12/2014	ND	400	100	400	0.00	

Sample ID: T4 (AH5) 11' (H400415-47)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	02/12/2014	ND	400	100	400	0.00	

Sample ID: T4 (AH5) 12' (H400415-48)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	02/12/2014	ND	400	100	400	0.00	

Cardinal Laboratories

*=Accredited Analyte

Mike Snyder, Organic Supervisor

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Mike Snyder, Organic Supervisor

Analysis Request of Chain of Custody Record

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

PAGE: 1 OF: 5

H400415

tom.elliot@tetratech.com

CLIENT NAME: SM Energy

SITE MANAGER: Tom Elliot

PROJECT NO.: 112mc05823

PROJECT NAME: SME / Osage 34 - 1H Eddy Co, NM

LAB I.D. NUMBER	DATE 2014	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD.	TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC:MS Vol. 8240/8260/624	GC:MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS				
1	2/4		S		X	T1(AH1) 0' (Hold	1							*																				Hold
2			S		X	1' ✓	1							X																				
3			S		X	2' ✓	1							X																				
4			S		X	3'	1							X																				
5			S		X	4'	1																										
6			S		X	5'	1																										
7			S		X	6'	1																										
8			S		X	7'	1																										
9			S		X	8'	1																										
10			S		X	9'	1																										

RELINQUISHED BY: (Signature) Date: 2/11/14 Time: 1445 RECEIVED BY: (Signature) Eddie Henson Date: 2/11/14 Time: 1545

SAMPLED BY: (Print & Initial) PR Date: 2/11/14 Time: 1445

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

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: OTHER:

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

TETRA TECH CONTACT PERSON: Tom Elliot

Results by: RUSH

RUSH Charges Authorized: (Yes) No

RECEIVING LABORATORY: Cardinal RECEIVED BY: (Signature)

ADDRESS: CITY: Hobbs STATE: NM ZIP:

CONTACT: PHONE: DATE: TIME: 5.2°C

SAMPLE CONDITION WHEN RECEIVED:

REMARKS:

* Run deeper Samples if Benzene exceeds 10 mg/kg; if total BTEX exceeds 50 mg/kg or if TPH exceeds 1,000 mg/kg.

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

* straight from field

email reports to tetratech.com

Analysis Request of Chain of Custody Record

PAGE: 2 OF: 5

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

H400415

CLIENT NAME: SM Energy
SITE MANAGER: Tom Elliot
PROJECT NO.: 112MC05823
PROJECT NAME: SME Osage 34 - 1H Eddy Co. NM

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE 2014	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 8081/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS	
11	2/11		S		X	T1(AH1) 10'	1																						
12			S		X	T2(AH2) 0' Hold	1						X	X																Hold
13			S		X	1'	1						X	X															
14			S		X	2'	1						X	X															
15			S		X	3'	1						X	X															
16			S		X	4'	1																						
17			S		X	5'	1																						
18			S		X	6'	1																						
19			S		X	7'	1																						
20			S		X	8'	1																						

RELINQUISHED BY: (Signature) — Date: 2-21/14 Time: 1445
RECEIVED BY: (Signature) Angie Henson — Date: 2/21/14 Time: 1445
SAMPLED BY: (Print & Initial) PJC — Date: 2/4/14 Time: 1445
RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: OTHER:
RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:
TETRA TECH CONTACT PERSON: Tom Elliot — Results by: Rush
RECEIVING LABORATORY: Cardinal
ADDRESS:
CITY: Hobbs STATE: NM ZIP:
CONTACT: PHONE: DATE: TIME: 5.20c
RECEIVED BY: (Signature)
RUSH Charges Authorized: Yes No
SAMPLE CONDITION WHEN RECEIVED:
REMARKS:

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

Analysis Request of Chain of Custody Record

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

H400415

CLIENT NAME: SM Energy

SITE MANAGER: Tom Elliot

PROJECT NO.: 112mc05823

PROJECT NAME: SME / Osage 34 - 1H Eddy Co, NM

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE 2014	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH TX1005 (Ext. to C35)	TPH 8015 MOD.	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
21	2/11		S		X	T2 (AH2) 9'	1																			X				
22			S		X	10'	1																							
23			S		X	T3 (AH4) 0' (Hold)	1						X	X												X				
24			S		X	1'	1						X	X												X				
25			S		X	2'	1						X	X												X				
26			S		X	3'	1						X	X												X				
27			S		X	4'	1																			X				
28			S		X	5'	1																			X				
29			S		X	6'	1																			X				
30			S		X	7'	1																			X				

Hold

RELINQUISHED BY: (Signature) Date: 2/4/14 Time: 1445

RECEIVED BY: (Signature) Date: 2/4/14 Time: 13:45

SAMPLED BY: (Print & Initial) BR Date: 2/4/14 Time: 1445

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS

AIRBILL #:

OTHER:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

TETRA TECH CONTACT PERSON: Tom Elliot

Results by: Rush

RUSH Charges Authorized: Yes No

RECEIVING LABORATORY: Cardinal

ADDRESS:

CITY: Hobbs STATE: NM ZIP:

CONTACT: PHONE: DATE: TIME:

RECEIVED BY: (Signature)

SAMPLE CONDITION WHEN RECEIVED:

REMARKS: 5.2°C

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

Analysis Request of Chain of Custody Record

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

H400415

CLIENT NAME: SM Energy

SITE MANAGER: Tom Elliot

PROJECT NO.: 112MC05823

PROJECT NAME: SME / Osage 34-1H Edd, Co, NM

LAB I.D. NUMBER	DATE 2014	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH TX1005 (Ext. to C35)	TPH 8015 MOD	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS	
31	2/11		S		X	T3 (AH4) 9'	1																			X					
32			S		X	9'	1																			X					
33			S		X	10'	1																			X					
34			S		X	11'	1																			X					
35			S		X	12'	1																			X					
36			S		X	T4 (AH5) 0'	1						X	X												X					Hold
37			S		X	1' ✓	1						X	X												X					
38			S		X	2' ✓	1						X	X												X					
39			S		X	3' ✓	1						X	X												X					
40			S		X	4'	1																			X					

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature) — Date: 2/11/14 Time: 1445

RECEIVED BY: (Signature) — Date: 2/11/14 Time: 1445

SAMPLED BY: (Print & Initial) CR — Date: 2/11/14 Time: 1445

RELINQUISHED BY: (Signature) — Date: Time:

RECEIVED BY: (Signature) — Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX HAND DELIVERED BUS UPS

AIRBILL #:

OTHER:

RELINQUISHED BY: (Signature) — Date: Time:

RECEIVED BY: (Signature) — Date: Time:

RECEIVING LABORATORY: Cardinal

ADDRESS:

CITY: Hobbs STATE: NM ZIP:

CONTACT: PHONE:

RECEIVED BY: (Signature)

DATE: TIME:

TETRA TECH CONTACT PERSON: Tom Elliot

Results by: Rush

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:

REMARKS: 5.2°C

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

Analysis Request of Chain of Custody Record

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

H400415

CLIENT NAME: SM Energy

SITE MANAGER: Tom Elliot

PROJECT NO.: 112m105823

PROJECT NAME: SME/ Osage 34 - 14 Eddy Co, NM

LAB I.D. NUMBER	DATE 2014	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
41	2/11		S		X	T4(AH5) 5'	1					
42			S		X	6'	1					
43			S		X	7'	1					
44			S		X	8'	1					
45			S		X	9'	1					
46			S		X	10'	1					
47			S		X	11'	1					
48			S		X	12'	1					
~~49~~			S		X							
←			S		X							

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
												X				
												X				
												X				
												X				
												X				
												X				
												X				
												X				

RELINQUISHED BY: (Signature) — Date: 2/11/14 Time: 1445
RECEIVED BY: (Signature) — Date: 2/11/14 Time: 1445

SAMPLED BY: (Print & Initial) — Date: 2/11/14 Time: 1445

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

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS
AIRBILL #:
OTHER:

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

RECEIVING LABORATORY: Cardinal
ADDRESS:
CITY: Hobbs STATE: NM ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:

TETRA TECH CONTACT PERSON: Tom Elliot

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:

REMARKS: 5.2°C

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