SITE INFORMATION

Report Type: Closure Report

General Site Information:						
Site:	SRO SWD #101 SWD					
Company:	COG Operating LLC					
Section, Township and Range	Unit G	Section 5	T 26S	R 28E		
Lease Number:	API-30-015-26105					
County:	Eddy County					
GPS:	32.07843			104.10933		
Surface Owner:	State					
Mineral Owner:						
Directions:	From HWY 285, travel north on White City Rd for 2.6 miles. The turn right and travel North on lease road for 1.0 mile to spill site.					

NM OIL CONSERVATION
ARTESIA DISTRICT
AUG 29 2014
RECEIVED

Release Data:	
Date Released:	6/9/2013
Type Release:	Produced Water
Source of Contamination:	Victaulic Coupling
Fluid Released:	100 bbls
Fluids Recovered:	0 bbls

Official Communication:			
Name:	Robert McNeill		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	One Concho Center		4000 N Big Spring St.
	600 W. Illinois Ave.		Suite 401
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 682-4559
Fax:	(432) 684-7137		
Email:	Rmcneill@concho.com		ike.tavarez@tetratech.com

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

Acceptable Soil RRAL (mg/kg)		
Benzene	***Total BTEX***	***TPH***
10	50	100

TETRA TECH

August 18, 2014

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

Re: Closure Report for the COG Operating LLC., SRO SWD #101, Unit G, Section 5, Township 26 South, Range 28 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the SRO SWD #101 located in Unit G, Section 05, Township 26 South, Range 28 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.07843°, W 104.10933°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on June 09, 2013, and released approximately one hundred (100) barrels of produced fluid from a failing Victaulic coupling, which none of the fluids were recovered. To alleviate the problem, COG personnel repaired the Victaulic coupling. The spill initiated north of the battery on a lease road affecting an area 20' X 55', 280' X 5', 130' X 20', and 75' X 20' in the pasture. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 05. According to the NMOCD groundwater map, the average depth to groundwater in this area is less than 50' below surface. The groundwater data is shown in Appendix B.

Tetra Tech
4000 North Big Spring, Ste. 401, Midland, TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

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-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 100 mg/kg.

Soil Assessment and Analytical Results

On August 14, 2013, Tetra Tech personnel inspected and sampled the spill area. Fifteen (15) auger holes (AH-1 through AH-15) and a background auger hole (BG-1) 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 of are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all of the auger holes (AH-1 through AH-15) were below the RRAL for TPH, benzene, or total BTEX. The chloride concentrations detected varied in all the auger holes. Auger holes (AH-9 and AH-15) were not vertically defined, with bottom hole samples of 2,250 mg/kg at 2.0' and 2,750 mg/kg at 4.0' respectively. The remaining auger holes were vertically defined between 1.0' and 5.0' below surface.

A background (BG-1) auger hole was installed to evaluate the background chloride concentration for the area. As shown in Table 1, the samples at 4.0' and 8.0' detected chloride concentrations of 1,540 mg/kg and 1,850 mg/kg, respectively.

Remedial Activities

On January 29, 2014, Tetra Tech supervised the removal of impacted material as highlighted (green) in Table 1 and shown on Figure 4. To remove the elevated chlorides, the impacted soils above the background concentrations were excavated from the spill area.

Auger holes (AH-2, AH-3, AH-7, AH-12, AH-13, and AH-14) were excavated to a depth of approximately 1.0' to 2.0', and approximately 3.0' in the areas of AH-6, AH-8 and AH-10. A deeper chloride impact was detected in the areas of AH-1, AH-4, AH-5, and AH-11. These areas were excavated to depths of approximately 4.0' to 5.0' below surface.

Tetra Tech installed a backhoe trench in the areas of AH-9 and AH-15 to define chloride extents. Once defined, the areas were then excavated to approximately 5.0' and 4.0' below surface, respectively. In addition, a 40 mil plastic liner was installed in the area of AH-9 to prevent vertical migration of the remaining impact.

Once the areas were excavated to the appropriate depths, the excavation was backfilled with clean soil to grade. Approximately 844 cubic yards of excavated soil was transported to proper disposal.

Conclusion

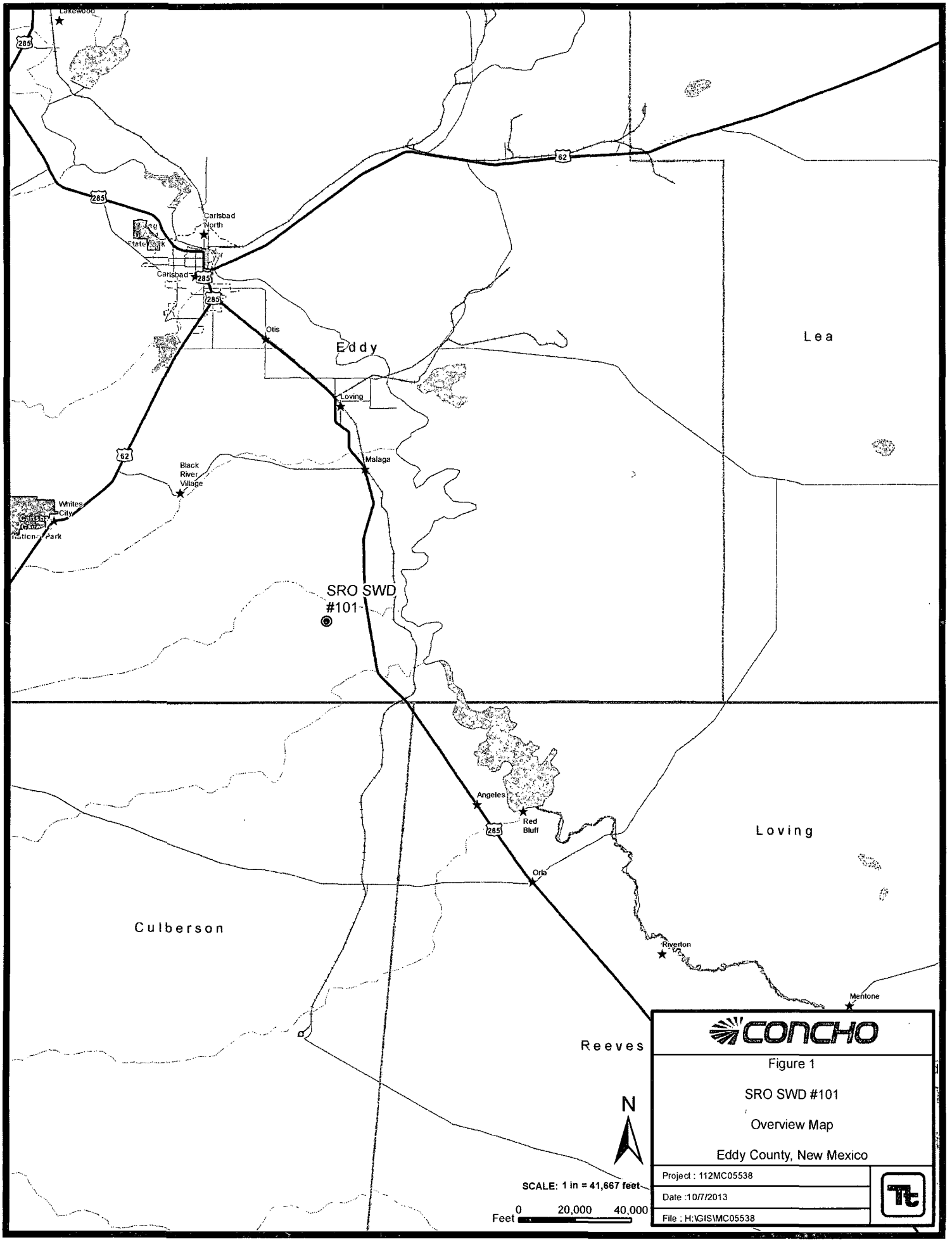
Based on the assessment and work performed, COG requests closure of this site. A Final C-141 is included in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities for this site, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Ike Tavarez, PG
Project Manager

cc: Robert McNeill – COG

Figures



CONCHO

Figure 1

SRO SWD #101

Overview Map

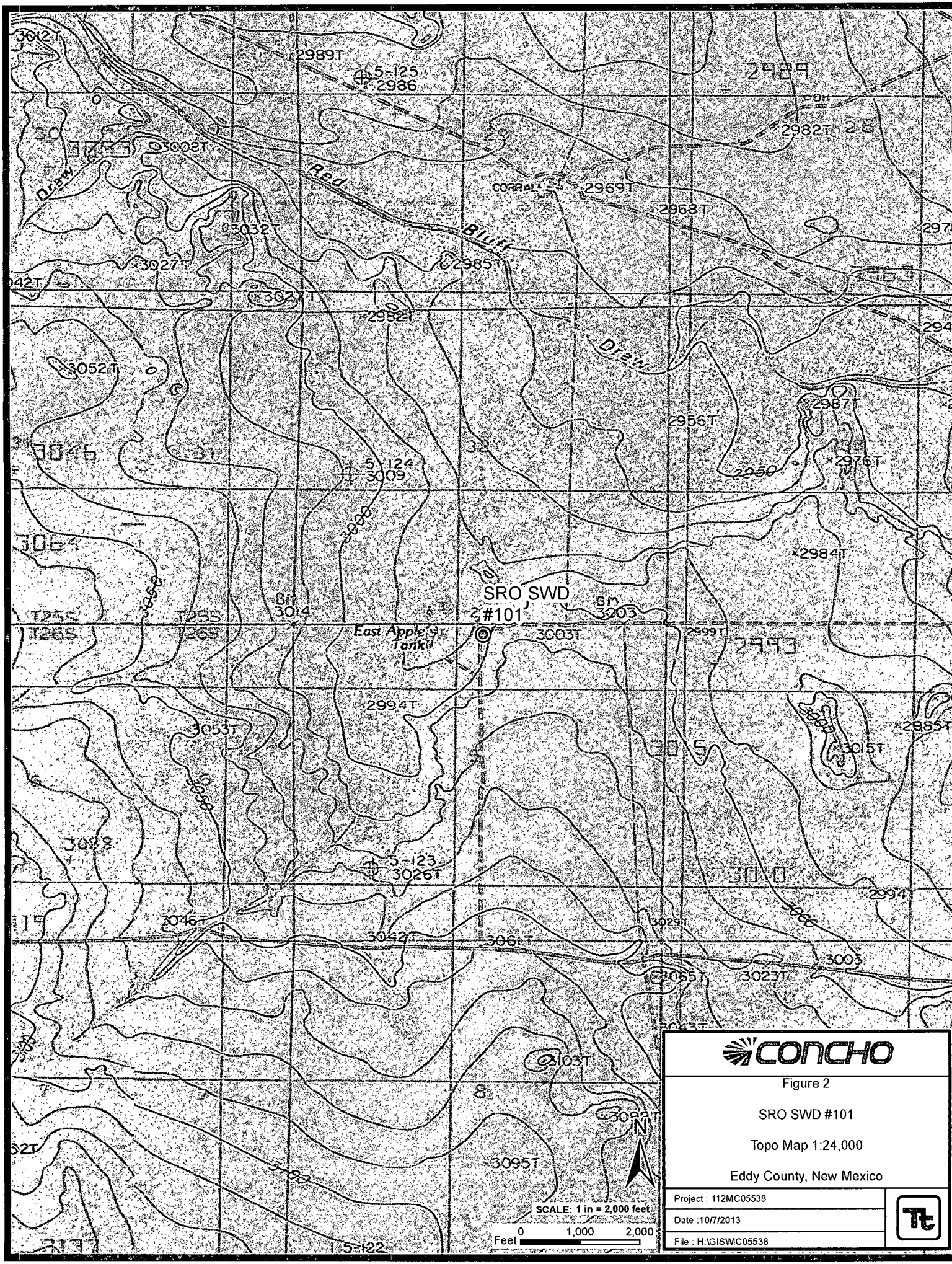
Eddy County, New Mexico

Project : 112MC05538

Date :10/7/2013

File : H:\GIS\MC05538

Drawn By: Isabel Marmolejo



CONCHO

Figure 2

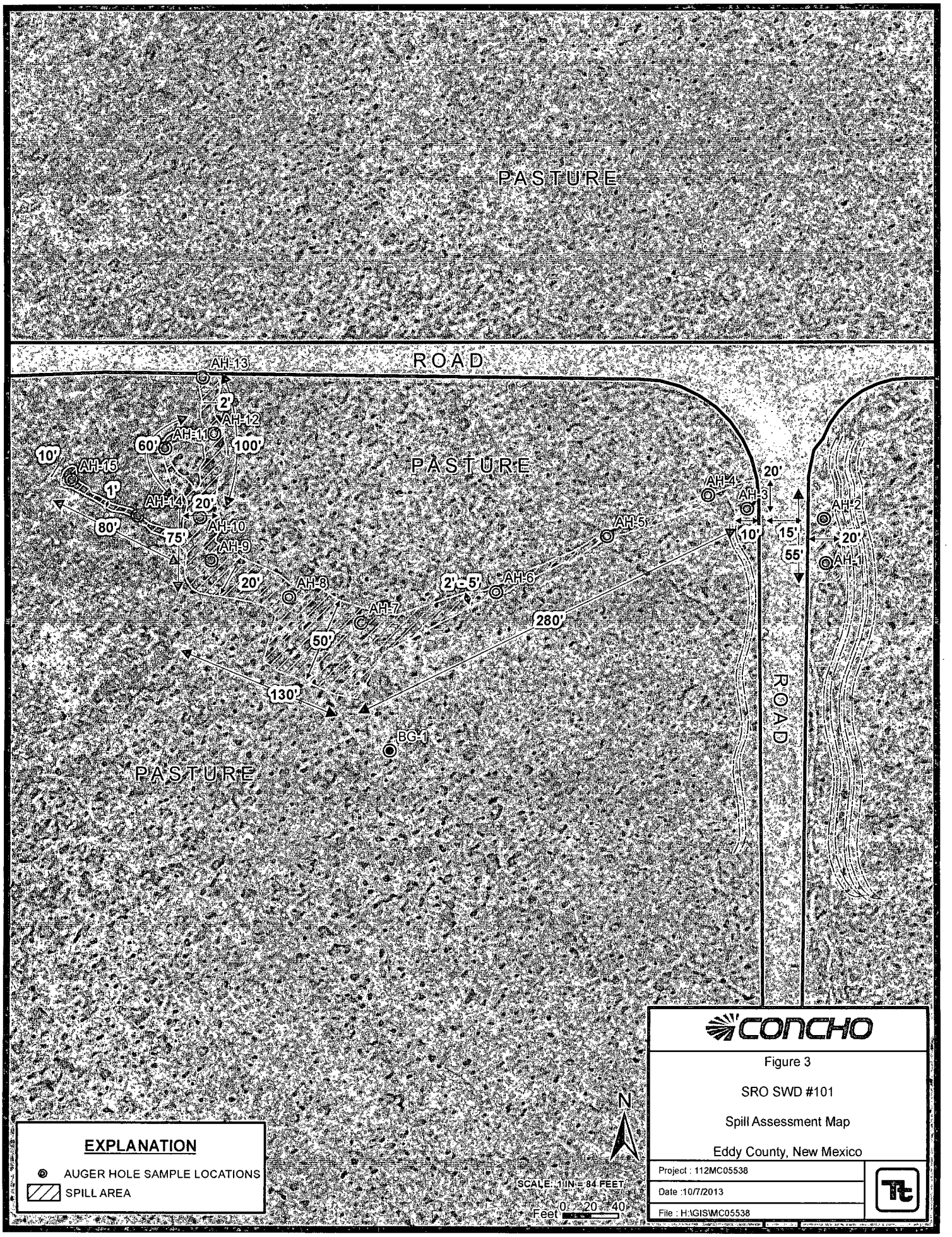
SRO SWD #101

Topo Map 1:24,000

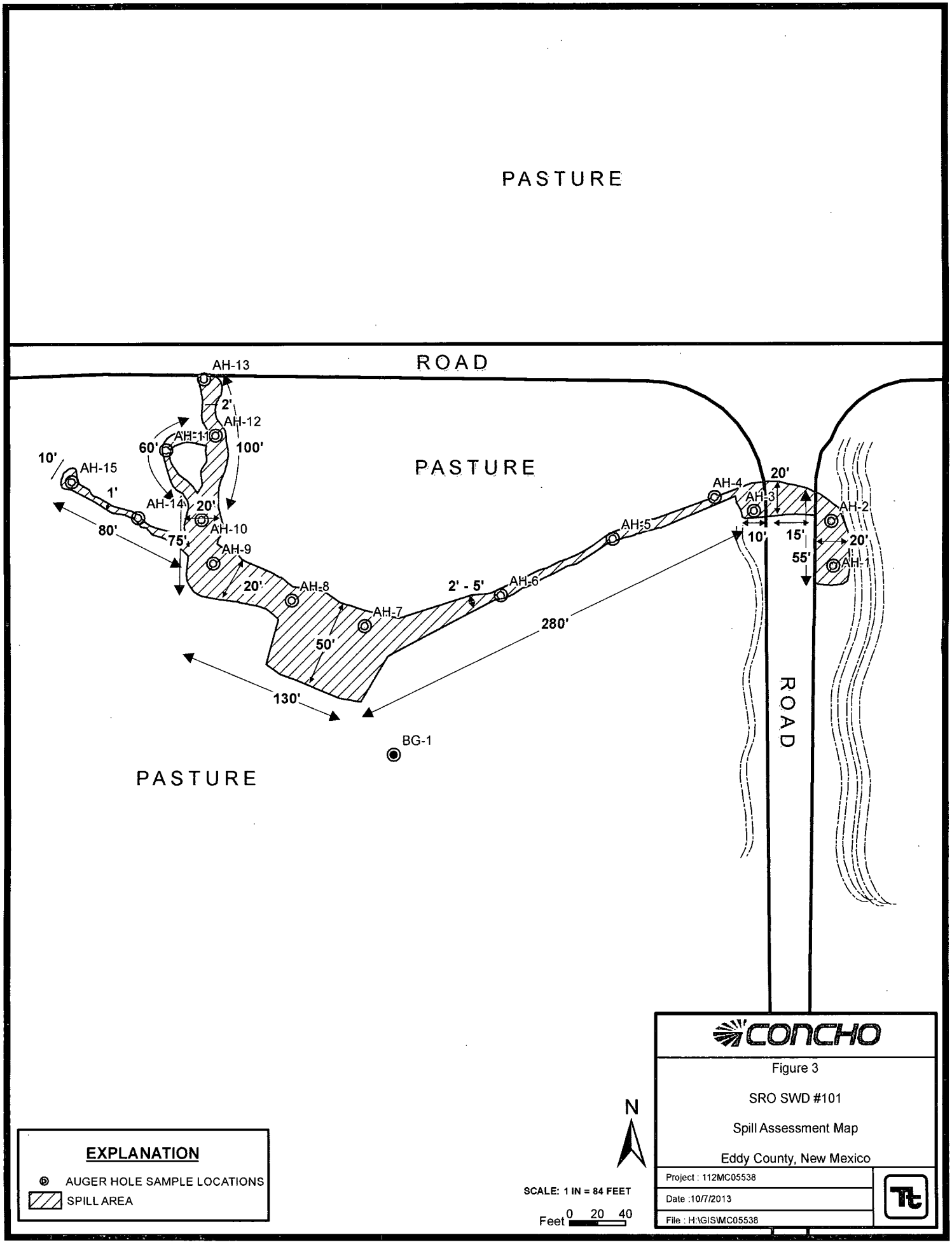
Eddy County, New Mexico

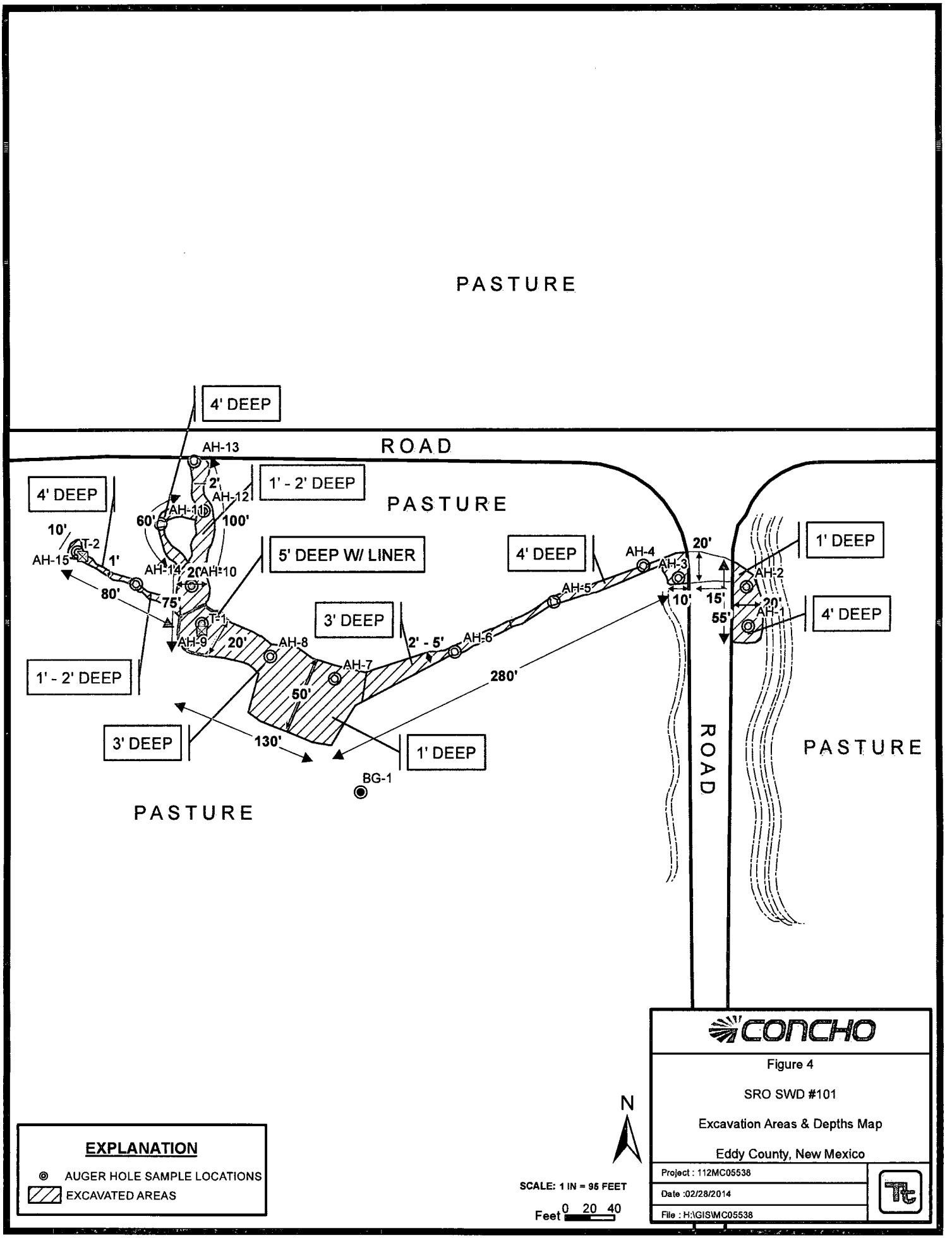
Project : 112MC05538	
Date :10/7/2013	
File : H:\GIS\MC05538	

Drawn By: Isabel Marmolejo



Drawn By: Isabel Marmolejo


PASTURE
ROAD
AH-13
2'
AH-12
AH-11
60'
100'
10'
AH-15
1'
AH-14
20'
80'
75'
AH-10
AH-9
20'
AH-8
AH-7
2' - 5'
AH-6
AH-5
AH-4
20'
AH-3
AH-2
10'
15'
20'
55'
AH-1
280'
50'
130'
BG-1
PASTURE
PASTURE
ROAD
N
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
SPILL AREA
SCALE: 1 IN = 84 FEET
Feet 0 20 40
CONCHO
Figure 3
SRO SWD #101
Spill Assessment Map
Eddy County, New Mexico
Project : 112MC05538
Date :10/7/2013
File : H:\GIS\MC05538
Drawn By: Isabel Marmolejo



Drawn By: Isabel Marmolejo

Tables

Table 1
COG Operating LLC.
SRO SWD #1
Eddy County, New Mexico

Sample ID	Sample Date	BEB Sample Depth (ft)	Excavation Bottom 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	8/15/2013	0-1	-	-	X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	8,360
	"	1-1.5	-	-	X	-	-	-	-	-	-	-	-	9,020
	"	2-2.5	-	-	X	-	-	-	-	-	-	-	-	14,200
	"	3-3.5	-	-	X	-	-	-	-	-	-	-	-	10,000
	"	4-4.5	4 to 5	-	X	-	-	-	-	-	-	-	-	9,880
	"	5-5.5	-	X		-	-	-	-	-	-	-	-	3,660
	"	6-6.5	-	X		-	-	-	-	-	-	-	-	1,580
	"	7-7.5	-	x		-	-	-	-	-	-	-	-	1,220
	"	8-8.5	-	X		-	-	-	-	-	-	-	-	1,390
	"	9-9.5	-	x		-	-	-	-	-	-	-	-	1,570
AH-2	8/15/2013	0-1	1	-	X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	3,760
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	1,410
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	780
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	255
AH-3	8/15/2013	0-1	-	-	X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	1,400
	"	1-1.5	1 to 1.5'	-	X	-	-	-	-	-	-	-	-	3,240
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	1,200
AH-4	8/15/2013	0-1	-	-	X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	524
	"	1-1.5	-	-	X	-	-	-	-	-	-	-	-	1,240
	"	2-2.5	-	-	X	-	-	-	-	-	-	-	-	10,500
	"	3-3.5	-	-	X	-	-	-	-	-	-	-	-	1,600
	"	4-4.5	4 to 5	-	X	-	-	-	-	-	-	-	-	4,780
	"	5-5.5	"	X		-	-	-	-	-	-	-	-	3,600
	"	6-6.5	"	X		-	-	-	-	-	-	-	-	1,560
	"	7-7.5	"	X		-	-	-	-	-	-	-	-	1,570

Table 1
COG Operating LLC.
SRO SWD #1
Eddy County, New Mexico

Sample ID	Sample Date	BEB Sample Depth (ft)	Excavation Bottom 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	8/15/2013	0-1	-		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	417
	"	1-1.5	-		X									689
	"	2-2.5	-		X									4,210
	"	3-3.5	-		X									4,540
	"	4-4.5	4		X									2,850
	"	5-5.5	-	X		-	-	-	-	-	-	-	-	922
AH-6	8/20/2013	0-1	-		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	14,300
	"	1-1.5	-		X									8,380
	"	2-2.5	-		X									6,850
	"	3-3.5	3		X									5,500
	"	4-4.5	-	X		-	-	-	-	-	-	-	-	1,260
	"	5-5.5	-	X		-	-	-	-	-	-	-	-	417
AH-7	8/20/2013	0-1	1 to 1.5		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	12,200
	"	1-1.5	-		X									4,990
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	285
AH-8	8/20/2013	0-1	-		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	11,700
	"	1-1.5	-		X									8,470
	"	2-2.5	-		X									4,190
	"	3-3.5	3		X									2,260
	"	4-4.5	-	X		-	-	-	-	-	-	-	-	1,390
AH-9	8/20/2013	0-1	-		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	4,240
	"	1-1.5	-		X									3,870
Trench	"	2-2.5	-		X									2,250
T-1	2/19/2014	0	-		X									10,000
	"	2	-		X									3,520
	"	4	4 to 5		X									2,240
	"	6	-	X		-	-	-	-	-	-	-	-	2,640
	"	8	-	X		-	-	-	-	-	-	-	-	1,920
	"	10	-	X		-	-	-	-	-	-	-	-	1,440
	"	12	-	X		-	-	-	-	-	-	-	-	1,480

Table 1
COG Operating LLC.
SRO SWD #1
Eddy County, New Mexico

Sample ID	Sample Date	BEB Sample Depth (ft)	Excavation Bottom 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-10	8/20/2013	0-1			X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	570
	"	1-1.5			X	-	-	-	-	-	-	-	-	4,430
	"	2-2.5			X	-	-	-	-	-	-	-	-	5,060
	"	3-3.5	3		X	-	-	-	-	-	-	-	-	4,990
	"	4-4.5	-	X		-	-	-	-	-	-	-	-	1,290
AH-11	8/20/2013	0-1			X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	9,350
	"	1-1.5			X	-	-	-	-	-	-	-	-	9,090
	"	2-2.5			X	-	-	-	-	-	-	-	-	4,910
	"	3-3.5			X	-	-	-	-	-	-	-	-	2,460
	"	4-4.5	4		X	-	-	-	-	-	-	-	-	2,090
	"	5-5.5	-	X		-	-	-	-	-	-	-	-	1,720
	"	6-6.5	-	X		-	-	-	-	-	-	-	-	1,370
	"	7-7.5	-	X		-	-	-	-	-	-	-	-	2,230
AH-12	8/20/2013	0-1			X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	5,110
	"	1-1.5			X	-	-	-	-	-	-	-	-	4,240
	"	2-2.5	2		X	-	-	-	-	-	-	-	-	3,130
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	1,340
	"	4-4.5	-	X		-	-	-	-	-	-	-	-	1,090
AH-13	8/20/2013	0-1	1		X	<8.00	<50.0	<50.0	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	3,980
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	1,330
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	148
AH-14	8/20/2013	0-1			X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	167
	"	1-1.5			X	-	-	-	-	-	-	-	-	2,370
	"	2-2.5	2		X	-	-	-	-	-	-	-	-	11,700
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	669
	"	4-4.5	-	X		-	-	-	-	-	-	-	-	540
	"	5-5.5	-	X		-	-	-	-	-	-	-	-	43.0
	"	6-6.5	-	X		-	-	-	-	-	-	-	-	110

Table 1
COG Operating LLC.
SRO SWD #1
Eddy County, New Mexico

Sample ID	Sample Date	BEB Sample Depth (ft)	Excavation Bottom 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-15	8/20/2013	0-1	-		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<20.0
		1-1.5	-		X	-	-	-	-	-	-	-	-	81
		2-2.5	-		X	-	-	-	-	-	-	-	-	556
		3-3.5	-		X	-	-	-	-	-	-	-	-	3,110
Trench		4-4.5	4		X	-	-	-	-	-	-	-	-	2,750
T-2	2/19/2014	0	-		X	-	-	-	-	-	-	-	-	304
		2	-		X	-	-	-	-	-	-	-	-	1,880
		4	4		X	-	-	-	-	-	-	-	-	2,720
	"	6	-	X		-	-	-	-	-	-	-	-	48.0
	"	8	-	X		-	-	-	-	-	-	-	-	80.0
	"	10	-	X		-	-	-	-	-	-	-	-	144
	"	12	-	X		-	-	-	-	-	-	-	-	272
Background	8/20/2013	0-1	0	X		-	-	-	-	-	-	-	-	34
	"	2-2.5	"	X		-	-	-	-	-	-	-	-	120
	"	4	"	X		-	-	-	-	-	-	-	-	1,540
	"	6	"	X		-	-	-	-	-	-	-	-	974
	"	8	"	X		-	-	-	-	-	-	-	-	1,850

Excavation Depths

40 mil Liner Installed

(-) Not Analyzed

(BEB) Below Excavation Bottom

Trench Backhoe Trench

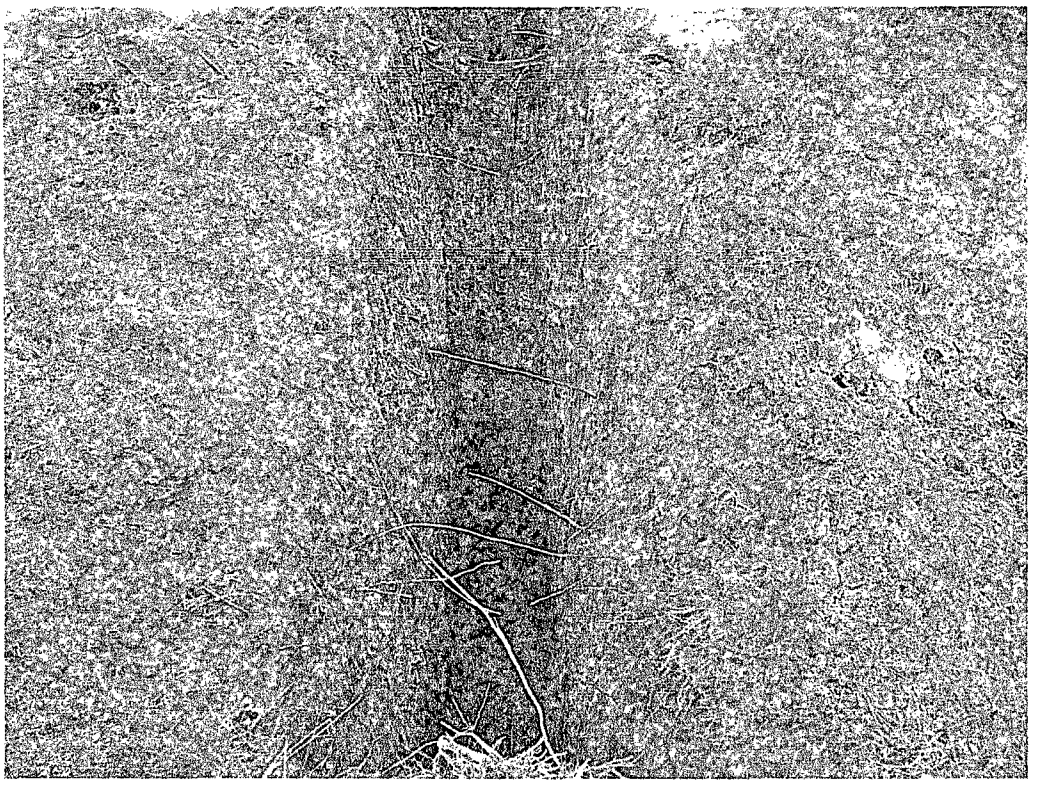
Date modified: 09/10/2013

112MC05538

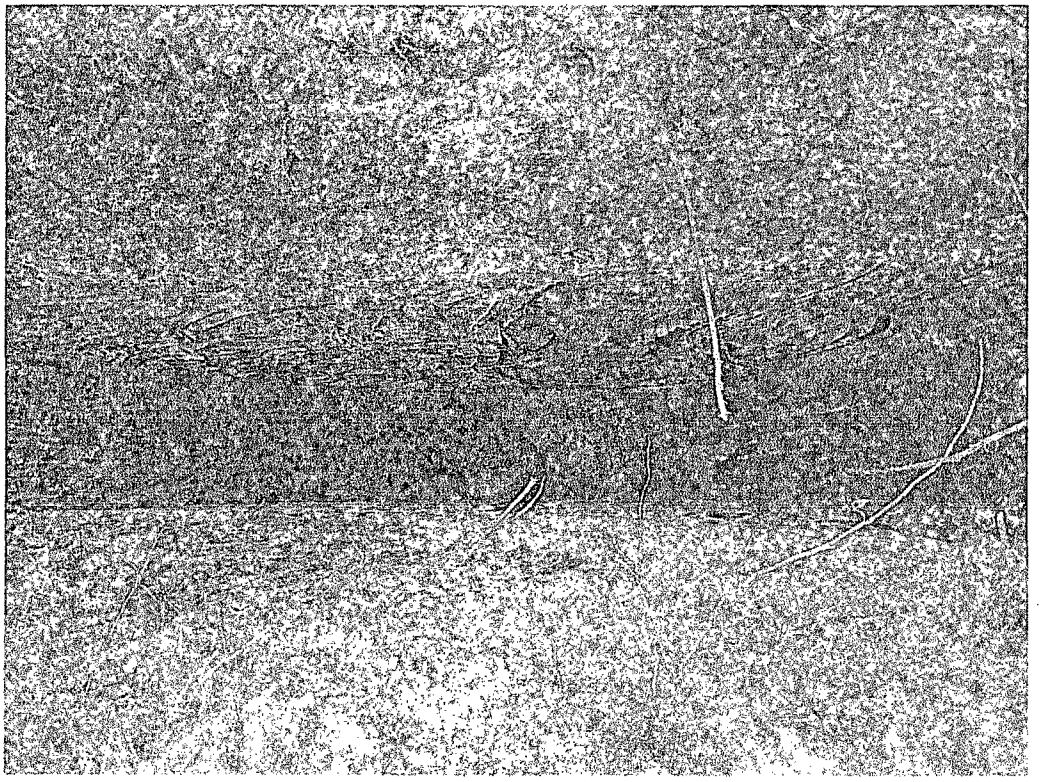
Photos

COG Operating LLC
SRO 101 SWD
Eddy County, New Mexico

TETRA TECH



View North – T-1 in Area of AH-9

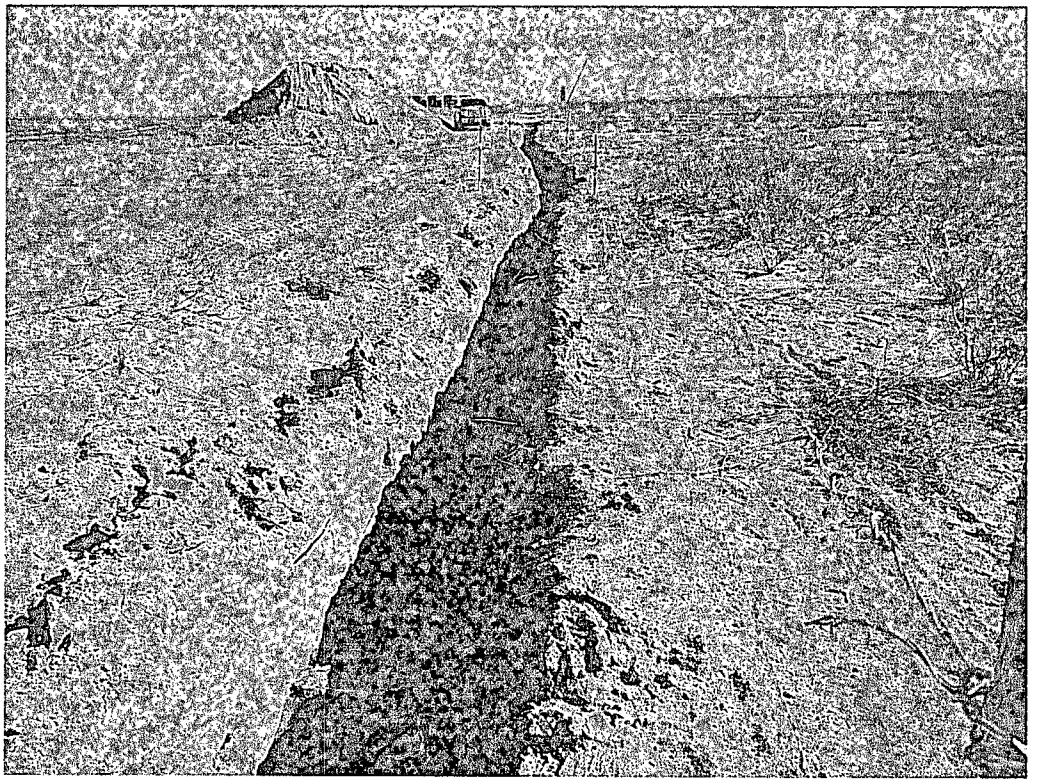


View North – T-2 in Area of AH-15

COG Operating LLC
SRO 101 SWD
Eddy County, New Mexico

TETRA TECH

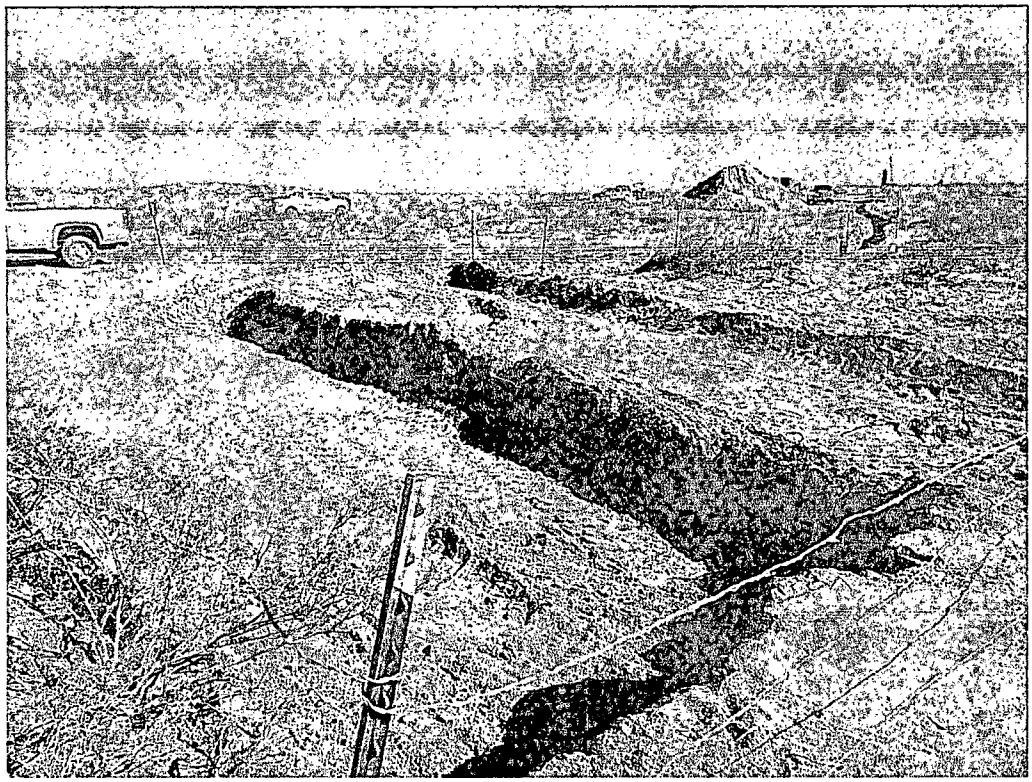
View East – AH-3 Area at 1.0'



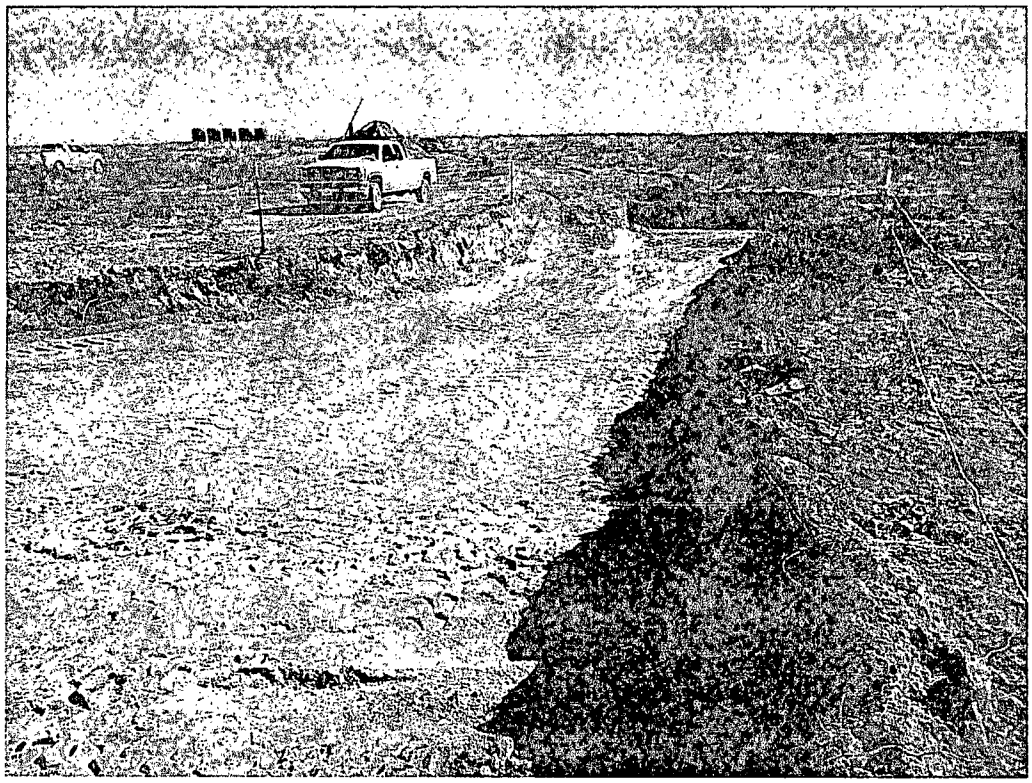
View East – AH-4 and AH-5 at 4.0'

COG Operating LLC
SRO 101 SWD
Eddy County, New Mexico

TETRA TECH



View East – AH-6 and AH-7 Excavated



View East – Area of AH-8 at 3.0'

COG Operating LLC
SRO 101 SWD
Eddy County, New Mexico

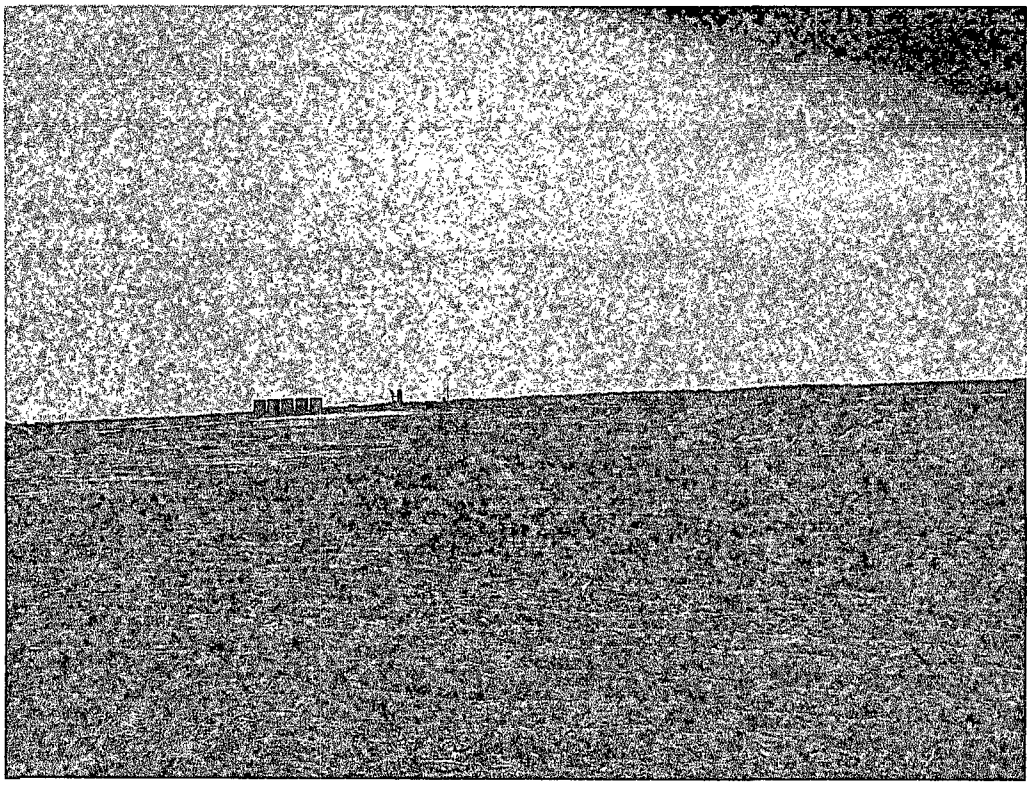
TETRA TECH

View East – Area of AH-9 at 5.0' and Lined

View South – AH-12 and AH-13 at 2.0'

COG Operating LLC
SRO 101 SWD
Eddy County, New Mexico

TETRA TECH



View East – Excavation Backfilled

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

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	COG OPERATING LLC	Contact	Pat Ellis
Address	600 West Illinois Avenue, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	SRO SWD #101	Facility Type	SWD

Surface Owner STATE	Mineral Owner	Lease No. (API#) 30-015-26105

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	05	26S	28E					EDDY

Latitude 32.07351 **Longitude** 104.1067

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 100bbls	Volume Recovered 0bbls
Source of Release Victaulic coupling	Date and Hour of Occurrence 06-09-2013	Date and Hour of Discovery 06-09-2013 4:00pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher - NMOCD	
By Whom? Michelle Mullins	Date and Hour 06-12-2013 10:18am	
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.*

A Victaulic coupling failed causing the release of 100bbls of produced water. The Victaulic coupling has been replaced and the line is back in service.

Describe Area Affected and Cleanup Action Taken.*

Initially an estimated 100bbls of produced water was released due to a Victaulic clamp that failed. We were unable to recover any fluid. The spill area is located in the pasture. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a work plan to the NMOCD for approval prior to any significant remediation work.

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

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Robert Grubbs Jr.	Approved by District Supervisor:	
Title: Senior Environmental Coordinator	Approval Date:	Expiration Date:
E-mail Address: rgrubbs@concho.com	Conditions of Approval:	Attached ☐
Date: 06-21-2013 Phone: 432-661-6601		

* Attach Additional Sheets If Necessary

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company **COG Operating LLC**	Contact **Robert McNeill**
Address **600 W. Illinois Ave, Midland, Texas 79701**	Telephone No. **(432) 685-4332**
Facility Name **SRO SWD 101**	Facility Type **SWD**

Surface Owner: State	Mineral Owner	Lease No. (API#) 30-015-26105

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	05	26S	28E					

Latitude 32.07351° N **Longitude** 104.1067° W

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 160 bbls	Volume Recovered 145 bbls
Source of Release: Victaulic Coupling	Date and Hour of Occurrence 06/09/2013	Date and Hour of Discovery 06/09/2014 4:00pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? **Mike Bratcher - NMOCD**	
By Whom? Michelle Mullins	Date and Hour 06/12/2013 10:18am	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

NM OIL CONSERVATION
ARTESIA DISTRICT
AUG 29 2014
RECEIVED

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

A Victaulic coupling failed causing the release of 100bbls of produced water. The Victaulic coupling was replaced and the line put back into service.

Describe Area Affected and Cleanup Action Taken.*

Initially an estimated 100bbls of produced water was released due to a Victaulic clamp that failed. COG was unable to recover any fluid. The spill area was located in the pasture. Tetra Tech inspected site and collected samples to define spills extent. Soil that exceeded RRAL was removed and hauled away for proper disposal. Site was then brought up to surface grade with clean backfill material. Tetra Tech prepared 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
Printed Name: Ike Tavarez (agent for COG)	Approved by District Supervisor:
Title: Project Manager	Approval Date: / Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval: / Attached ☐
Date: 8-18-14 Phone: (432) 682-4559	

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - SRO SWD #101
Eddy County, New Mexico

26 South 27 East

6	5	4	3	2	1
7	8	9	10	11	12 **92**
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33 **19**	34	35	36

26 South 28 East

6	5 **59**	4 **35**	3 **32**	2	1
7	8	9	10	11	12
18 **67**	17	16	15 **48 49**	14	13
19	20 **96**	21	22	23	24
30	29 **15**	28 **90**	27	26 **40**	25
31	32	33	34	35	36 **40**

26 South 29 East

6 **40**	5	4	3	2	1
7	8	9	10 **40**	11	12
18	17	16	15 **60**	14	13
19	20	21	22	23	24
30 **30**	29	28	27	26	25
31	32 **115**	33	34	35	36

26 South 27 East

6	5 **12**	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13 **35**
19	20	21	22 **50**	23	24
30	29	28	27	26	25
31	32	33	34	35	36

26 South 28 East

6	5 **Site**	4	3	2 **120 21**	1
7	8	9	10	11	12 **100**
18	17	16	15	14 **120**	13 **56**
19	20	21	22 **120**	23	24
30	29	28	27	26	25
31	32	33	34	35	36

26 South 29 East

6	5 **78**	4	3	2	1
7	8	9	10	11	12
18	17	16 **125**	15	14	13
19	20	21	22 **57 69**	23	24
30	29	28	27	26	25
31	32	33	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

Appendix C

CARDINAL Laboratories

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

February 24, 2014

IKE TAVAREZ

TETRA TECH

1910 N. BIG SPRING STREET

MIDLAND, TX 79705

RE: SRO SWD #101

Enclosed are the results of analyses for samples received by the laboratory on 02/19/14 8:20.

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,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	02/19/2014	Sampling Date:	02/19/2014
Reported:	02/24/2014	Sampling Type:	Soil
Project Name:	SRO SWD #101	Sampling Condition:	Cool & Intact
Project Number:	112MC05538	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: T-1 0' (H400494-01)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**10000**	16.0	02/23/2014	ND	416	104	400	3.92	

Sample ID: T-1 2' (H400494-02)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**3520**	16.0	02/23/2014	ND	416	104	400	3.92	

Sample ID: T-1 4' (H400494-03)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**2240**	16.0	02/23/2014	ND	416	104	400	3.92	

Sample ID: T-1 6' (H400494-04)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**2640**	16.0	02/23/2014	ND	416	104	400	3.92	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	02/19/2014	Sampling Date:	02/19/2014
Reported:	02/24/2014	Sampling Type:	Soil
Project Name:	SRO SWD #101	Sampling Condition:	Cool & Intact
Project Number:	112MC05538	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: T-1 8' (H400494-05)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1920**	16.0	02/23/2014	ND	416	104	400	3.92	

Sample ID: T-1 10' (H400494-06)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1440**	16.0	02/23/2014	ND	416	104	400	3.92	

Sample ID: T-1 12' (H400494-07)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1480**	16.0	02/23/2014	ND	416	104	400	3.92	

Sample ID: T-2 0' (H400494-08)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**304**	16.0	02/23/2014	ND	416	104	400	3.92	

Sample ID: T-2 2' (H400494-09)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1880**	16.0	02/23/2014	ND	416	104	400	3.92	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

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

Received:	02/19/2014	Sampling Date:	02/19/2014
Reported:	02/24/2014	Sampling Type:	Soil
Project Name:	SRO SWD #101	Sampling Condition:	Cool & Intact
Project Number:	112MC05538	Sample Received By:	Jodi Henson
Project Location:	NONE GIVEN		

Sample ID: T-2 4' (H400494-10)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**2720**	16.0	02/23/2014	ND	416	104	400	3.92	

Sample ID: T-2 6' (H400494-11)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	02/23/2014	ND	416	104	400	3.92	

Sample ID: T-2 8' (H400494-12)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	02/23/2014	ND	416	104	400	3.92	

Sample ID: T-2 10' (H400494-13)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**144**	16.0	02/23/2014	ND	416	104	400	3.92	

Sample ID: T-2 12' (H400494-14)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**272**	16.0	02/23/2014	ND	416	104	400	3.92	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

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

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

Analysis Request of Chain of Custody Record

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

H400494

CLIENT NAME: COG

SITE MANAGER: IKE Tavarez

PROJECT NO.: 112MC05538

PROJECT NAME: SRO SWD #101

LAB I.D. NUMBER	DATE	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	2-19-14	8:15AM				T-1 0'																		✓				
2	2-19-14	8:15AM				T-1 2'																		✓				
3	2-19-14	8:15AM				T-1 4'																		✓				
4	2-19-14	8:15AM				T-1 6'																		✓				
5	2-19-14	8:15AM				T-1 8'																		✓				
6	2-19-14	8:15AM				T-1 10'																		✓				
7	2-19-14	8:15AM				T-1 12'																		✓				

ANALYSIS REQUEST
(Circle or Specify Method No.)

RELINQUISHED BY: (Signature)	Date: 2-19-14 Time: 8:15 am	RECEIVED BY: (Signature) Jodi Henson	Date: 2/19/14 Time: 13:20
SAMPLED BY: (Print & Initial)	Date: 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:	Results by:		
RECEIVING LABORATORY: ADDRESS: CITY: STATE: ZIP: CONTACT: PHONE:	RECEIVED BY: (Signature) DATE: TIME:		RUSH Charges Authorized: Yes No
SAMPLE CONDITION WHEN RECEIVED: 5.8°C	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

H400494

CLIENT NAME: COG

SITE MANAGER: IKE Tavarez

PROJECT NO.: 112MC05538

PROJECT NAME: SRO SWD #101

LAB I.D. NUMBER	DATE	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
8	2-19-14	8:15AM				T-2 0'																		✓				
9	2-19-14	8:15AM				T-2 2'																		✓				
10	2-19-14	8:15AM				T-2 4'																		✓				
11	2-19-14	8:15AM				T-2 6'																		✓				
12	2-19-14	8:15AM				T-2 8'																		✓				
13	2-19-14	8:15AM				T-2 10'																		✓				
14	2-19-14	8:15AM				T-2 12'																		✓				

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature) — Date: 2-19-14 Time: 8:15AM — RECEIVED BY: (Signature) Ethel Henson — Date: 2/19/14 Time: 8:20

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

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

SAMPLED BY: (Print & Initial) — Date: Time:

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

TETRA TECH CONTACT PERSON: — Results by:

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

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 5.8°C

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.

Summary Report

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX 79705

Report Date: September 3, 2013

Work Order: 13082317

Project Location: NM
Project Name: COG/SRO SWD #101
Project Number: 112MC05538

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
339757	Background 0-1'	soil	2013-08-20	00:00	2013-08-23
339758	Background 2-2.5'	soil	2013-08-20	00:00	2013-08-23
339759	Background 4'	soil	2013-08-20	00:00	2013-08-23
339760	Background 6'	soil	2013-08-20	00:00	2013-08-23
339761	Background 8'	soil	2013-08-20	00:00	2013-08-23
339762	AH-6 0-1'	soil	2013-08-20	00:00	2013-08-23
339763	AH-6 1-1.5'	soil	2013-08-20	00:00	2013-08-23
339764	AH-6 2-2.5'	soil	2013-08-20	00:00	2013-08-23
339765	AH-6 3-3.5'	soil	2013-08-20	00:00	2013-08-23
339766	AH-6 4-4.5'	soil	2013-08-20	00:00	2013-08-23
339767	AH-6 5-5.5'	soil	2013-08-20	00:00	2013-08-23
339768	AH-7 0-1'	soil	2013-08-20	00:00	2013-08-23
339769	AH-7 1-1.5'	soil	2013-08-20	00:00	2013-08-23
339770	AH-7 2-2.5'	soil	2013-08-20	00:00	2013-08-23
339771	AH-8 0-1'	soil	2013-08-20	00:00	2013-08-23
339772	AH-8 1-1.5'	soil	2013-08-20	00:00	2013-08-23
339773	AH-8 2-2.5'	soil	2013-08-20	00:00	2013-08-23
339774	AH-8 3-3.5'	soil	2013-08-20	00:00	2013-08-23
339775	AH-8 4-4.5'	soil	2013-08-20	00:00	2013-08-23
339776	AH-9 0-1'	soil	2013-08-20	00:00	2013-08-23
339777	AH-9 1-1.5'	soil	2013-08-20	00:00	2013-08-23
339778	AH-9 2-2.5'	soil	2013-08-20	00:00	2013-08-23
339779	AH-10 0-1'	soil	2013-08-20	00:00	2013-08-23
339780	AH-10 1-1.5'	soil	2013-08-20	00:00	2013-08-23
339781	AH-10 2-2.5'	soil	2013-08-20	00:00	2013-08-23
339782	AH-10 3-3.5'	soil	2013-08-20	00:00	2013-08-23
339783	AH-10 4-4.5'	soil	2013-08-20	00:00	2013-08-23
339784	AH-11 0-1'	soil	2013-08-20	00:00	2013-08-23
339785	AH-11 1-1.5'	soil	2013-08-20	00:00	2013-08-23
339786	AH-11 2-2.5'	soil	2013-08-20	00:00	2013-08-23

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
339787	AH-11 3-3.5'	soil	2013-08-20	00:00	2013-08-23
339788	AH-11 4-4.5'	soil	2013-08-20	00:00	2013-08-23
339789	AH-11 5-5.5'	soil	2013-08-20	00:00	2013-08-23
339790	AH-11 6-6.5'	soil	2013-08-20	00:00	2013-08-23
339791	AH-11 7-7.5'	soil	2013-08-20	00:00	2013-08-23
339792	AH-12 0-1'	soil	2013-08-20	00:00	2013-08-23
339793	AH-12 1-1.5'	soil	2013-08-20	00:00	2013-08-23
339794	AH-12 2-2.5'	soil	2013-08-20	00:00	2013-08-23
339795	AH-12 3-3.5'	soil	2013-08-20	00:00	2013-08-23
339796	AH-12 4-4.5'	soil	2013-08-20	00:00	2013-08-23
339797	AH-13 0-1'	soil	2013-08-20	00:00	2013-08-23
339798	AH-13 1-1.5'	soil	2013-08-20	00:00	2013-08-23
339799	AH-13 2-2.5'	soil	2013-08-20	00:00	2013-08-23
339800	AH-14 0-1'	soil	2013-08-20	00:00	2013-08-23
339801	AH-14 1-1.5'	soil	2013-08-20	00:00	2013-08-23
339802	AH-14 2-2.5'	soil	2013-08-20	00:00	2013-08-23
339803	AH-14 3-3.5'	soil	2013-08-20	00:00	2013-08-23
339804	AH-14 4-4.5'	soil	2013-08-20	00:00	2013-08-23
339805	AH-14 5-5.5'	soil	2013-08-20	00:00	2013-08-23
339806	AH-14 6-6.5'	soil	2013-08-20	00:00	2013-08-23
339807	AH-15 0-1'	soil	2013-08-20	00:00	2013-08-23
339808	AH-15 1-1.5'	soil	2013-08-20	00:00	2013-08-23
339809	AH-15 2-2.5'	soil	2013-08-20	00:00	2013-08-23
339810	AH-15 3-3.5'	soil	2013-08-20	00:00	2013-08-23
339811	AH-15 4-4.5'	soil	2013-08-20	00:00	2013-08-23
339812	AH-5 2-2.5'	soil	2013-08-22	00:00	2013-08-23

	BTEX				TPH DRO - NEW	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
339762 - AH-6 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
339768 - AH-7 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
339771 - AH-8 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
339776 - AH-9 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
339779 - AH-10 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
339784 - AH-11 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
339792 - AH-12 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
339797 - AH-13 0-1'	<0.0400 [1]	<0.0400	<0.0400	<0.0400	<50.0	<8.00 [2]
339800 - AH-14 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
339807 - AH-15 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00

Sample: 339757 - Background 0-1'

Param	Flag	Result	Units	RL
Chloride		**33.6**	mg/Kg	4

[1]Sample dilution due to surfactants.
[2]Sample dilution due to surfactants.

Sample: 339758 - Background 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**120**	mg/Kg	4

Sample: 339759 - Background 4'

Param	Flag	Result	Units	RL
Chloride		**1540**	mg/Kg	4

Sample: 339760 - Background 6'

Param	Flag	Result	Units	RL
Chloride		**974**	mg/Kg	4

Sample: 339761 - Background 8'

Param	Flag	Result	Units	RL
Chloride		**1850**	mg/Kg	4

Sample: 339762 - AH-6 0-1'

Param	Flag	Result	Units	RL
Chloride		**14300**	mg/Kg	4

Sample: 339763 - AH-6 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**8380**	mg/Kg	4

Sample: 339764 - AH-6 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**6850**	mg/Kg	4

Sample: 339765 - AH-6 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**5500**	mg/Kg	4

Sample: 339766 - AH-6 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**1260**	mg/Kg	4

Sample: 339767 - AH-6 5-5.5'

Param	Flag	Result	Units	RL
Chloride		**417**	mg/Kg	4

Sample: 339768 - AH-7 0-1'

Param	Flag	Result	Units	RL
Chloride		**12200**	mg/Kg	4

Sample: 339769 - AH-7 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**4990**	mg/Kg	4

Sample: 339770 - AH-7 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**285**	mg/Kg	4

Sample: 339771 - AH-8 0-1'

Param	Flag	Result	Units	RL
Chloride		**11700**	mg/Kg	4

Sample: 339772 - AH-8 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**8470**	mg/Kg	4

Sample: 339773 - AH-8 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**4190**	mg/Kg	4

Sample: 339774 - AH-8 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**2260**	mg/Kg	4

Sample: 339775 - AH-8 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**1390**	mg/Kg	4

Sample: 339776 - AH-9 0-1'

Param	Flag	Result	Units	RL
Chloride		**4240**	mg/Kg	4

Sample: 339777 - AH-9 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**3870**	mg/Kg	4

Sample: 339778 - AH-9 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**2250**	mg/Kg	4

Sample: 339779 - AH-10 0-1'

Param	Flag	Result	Units	RL
Chloride		**5770**	mg/Kg	4

Sample: 339780 - AH-10 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**4430**	mg/Kg	4

Sample: 339781 - AH-10 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**5060**	mg/Kg	4

Sample: 339782 - AH-10 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**4990**	mg/Kg	4

Sample: 339783 - AH-10 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**1290**	mg/Kg	4

Sample: 339784 - AH-11 0-1'

Param	Flag	Result	Units	RL
Chloride		**9350**	mg/Kg	4

Sample: 339785 - AH-11 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**9090**	mg/Kg	4

Sample: 339786 - AH-11 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**4910**	mg/Kg	4

Sample: 339787 - AH-11 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**2460**	mg/Kg	4

Sample: 339788 - AH-11 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**2090**	mg/Kg	4

Sample: 339789 - AH-11 5-5.5'

Param	Flag	Result	Units	RL
Chloride		**1720**	mg/Kg	4

Sample: 339790 - AH-11 6-6.5'

Param	Flag	Result	Units	RL
Chloride		**1340**	mg/Kg	4

Sample: 339791 - AH-11 7-7.5'

Param	Flag	Result	Units	RL
Chloride		**2230**	mg/Kg	4

Sample: 339792 - AH-12 0-1'

Param	Flag	Result	Units	RL
Chloride		**5110**	mg/Kg	4

Sample: 339793 - AH-12 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**4240**	mg/Kg	4

Sample: 339794 - AH-12 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**3130**	mg/Kg	4

Sample: 339795 - AH-12 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**1340**	mg/Kg	4

Sample: 339796 - AH-12 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**1090**	mg/Kg	4

Sample: 339797 - AH-13 0-1'

Param	Flag	Result	Units	RL
Chloride		**3980**	mg/Kg	4

Sample: 339798 - AH-13 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**1330**	mg/Kg	4

Sample: 339799 - AH-13 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**148**	mg/Kg	4

Sample: 339800 - AH-14 0-1'

Param	Flag	Result	Units	RL
Chloride		**167**	mg/Kg	4

Sample: 339801 - AH-14 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**2370**	mg/Kg	4

Sample: 339802 - AH-14 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**11700**	mg/Kg	4

Sample: 339803 - AH-14 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**669**	mg/Kg	4

Sample: 339804 - AH-14 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**540**	mg/Kg	4

Sample: 339805 - AH-14 5-5.5'

Param	Flag	Result	Units	RL
Chloride		**43.0**	mg/Kg	4

Sample: 339806 - AH-14 6-6.5'

Param	Flag	Result	Units	RL
Chloride		**110**	mg/Kg	4

Sample: 339807 - AH-15 0-1'

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

Sample: 339808 - AH-15 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**81.2**	mg/Kg	4

Sample: 339809 - AH-15 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**556**	mg/Kg	4

Sample: 339810 - AH-15 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**3110**	mg/Kg	4

Sample: 339811 - AH-15 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**2750**	mg/Kg	4

Sample: 339812 - AH-5 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**4210**	mg/Kg	4

TRACEANALYSIS, INC.

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(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

Ike Tavarez
Tetra Tech
1910 N. Big Spring Street
Midland, TX, 79705

Report Date: September 3, 2013

Work Order: 13082317

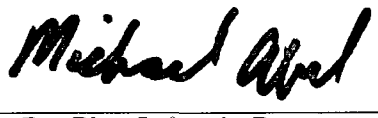
Project Location: NM
Project Name: COG/SRO SWD #101
Project Number: 112MC05538

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
339757	Background 0-1'	soil	2013-08-20	00:00	2013-08-23
339758	Background 2-2.5'	soil	2013-08-20	00:00	2013-08-23
339759	Background 4'	soil	2013-08-20	00:00	2013-08-23
339760	Background 6'	soil	2013-08-20	00:00	2013-08-23
339761	Background 8'	soil	2013-08-20	00:00	2013-08-23
339762	AH-6 0-1'	soil	2013-08-20	00:00	2013-08-23
339763	AH-6 1-1.5'	soil	2013-08-20	00:00	2013-08-23
339764	AH-6 2-2.5'	soil	2013-08-20	00:00	2013-08-23
339765	AH-6 3-3.5'	soil	2013-08-20	00:00	2013-08-23
339766	AH-6 4-4.5'	soil	2013-08-20	00:00	2013-08-23
339767	AH-6 5-5.5'	soil	2013-08-20	00:00	2013-08-23
339768	AH-7 0-1'	soil	2013-08-20	00:00	2013-08-23
339769	AH-7 1-1.5'	soil	2013-08-20	00:00	2013-08-23
339770	AH-7 2-2.5'	soil	2013-08-20	00:00	2013-08-23
339771	AH-8 0-1'	soil	2013-08-20	00:00	2013-08-23
339772	AH-8 1-1.5'	soil	2013-08-20	00:00	2013-08-23
339773	AH-8 2-2.5'	soil	2013-08-20	00:00	2013-08-23
339774	AH-8 3-3.5'	soil	2013-08-20	00:00	2013-08-23

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
339775	AH-8 4-4.5'	soil	2013-08-20	00:00	2013-08-23
339776	AH-9 0-1'	soil	2013-08-20	00:00	2013-08-23
339777	AH-9 1-1.5'	soil	2013-08-20	00:00	2013-08-23
339778	AH-9 2-2.5'	soil	2013-08-20	00:00	2013-08-23
339779	AH-10 0-1'	soil	2013-08-20	00:00	2013-08-23
339780	AH-10 1-1.5'	soil	2013-08-20	00:00	2013-08-23
339781	AH-10 2-2.5'	soil	2013-08-20	00:00	2013-08-23
339782	AH-10 3-3.5'	soil	2013-08-20	00:00	2013-08-23
339783	AH-10 4-4.5'	soil	2013-08-20	00:00	2013-08-23
339784	AH-11 0-1'	soil	2013-08-20	00:00	2013-08-23
339785	AH-11 1-1.5'	soil	2013-08-20	00:00	2013-08-23
339786	AH-11 2-2.5'	soil	2013-08-20	00:00	2013-08-23
339787	AH-11 3-3.5'	soil	2013-08-20	00:00	2013-08-23
339788	AH-11 4-4.5'	soil	2013-08-20	00:00	2013-08-23
339789	AH-11 5-5.5'	soil	2013-08-20	00:00	2013-08-23
339790	AH-11 6-6.5'	soil	2013-08-20	00:00	2013-08-23
339791	AH-11 7-7.5'	soil	2013-08-20	00:00	2013-08-23
339792	AH-12 0-1'	soil	2013-08-20	00:00	2013-08-23
339793	AH-12 1-1.5'	soil	2013-08-20	00:00	2013-08-23
339794	AH-12 2-2.5'	soil	2013-08-20	00:00	2013-08-23
339795	AH-12 3-3.5'	soil	2013-08-20	00:00	2013-08-23
339796	AH-12 4-4.5'	soil	2013-08-20	00:00	2013-08-23
339797	AH-13 0-1'	soil	2013-08-20	00:00	2013-08-23
339798	AH-13 1-1.5'	soil	2013-08-20	00:00	2013-08-23
339799	AH-13 2-2.5'	soil	2013-08-20	00:00	2013-08-23
339800	AH-14 0-1'	soil	2013-08-20	00:00	2013-08-23
339801	AH-14 1-1.5'	soil	2013-08-20	00:00	2013-08-23
339802	AH-14 2-2.5'	soil	2013-08-20	00:00	2013-08-23
339803	AH-14 3-3.5'	soil	2013-08-20	00:00	2013-08-23
339804	AH-14 4-4.5'	soil	2013-08-20	00:00	2013-08-23
339805	AH-14 5-5.5'	soil	2013-08-20	00:00	2013-08-23
339806	AH-14 6-6.5'	soil	2013-08-20	00:00	2013-08-23
339807	AH-15 0-1'	soil	2013-08-20	00:00	2013-08-23
339808	AH-15 1-1.5'	soil	2013-08-20	00:00	2013-08-23
339809	AH-15 2-2.5'	soil	2013-08-20	00:00	2013-08-23
339810	AH-15 3-3.5'	soil	2013-08-20	00:00	2013-08-23
339811	AH-15 4-4.5'	soil	2013-08-20	00:00	2013-08-23
339812	AH-5 2-2.5'	soil	2013-08-22	00:00	2013-08-23

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.



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

Report Contents

Case Narrative

Samples for project COG/SRO SWD #101 were received by TraceAnalysis, Inc. on 2013-08-23 and assigned to work order 13082317. Samples for work order 13082317 were received intact at a temperature of 2.0 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	88624	2013-08-30 at 16:54	104609	2013-08-30 at 16:54
Chloride (Titration)	SM 4500-Cl B	88533	2013-08-28 at 10:21	104523	2013-08-28 at 16:17
Chloride (Titration)	SM 4500-Cl B	88533	2013-08-28 at 10:21	104524	2013-08-28 at 16:29
Chloride (Titration)	SM 4500-Cl B	88533	2013-08-28 at 10:21	104541	2013-08-29 at 12:10
Chloride (Titration)	SM 4500-Cl B	88533	2013-08-28 at 10:21	104543	2013-08-29 at 12:18
Chloride (Titration)	SM 4500-Cl B	88533	2013-08-28 at 10:21	104544	2013-08-29 at 12:25
Chloride (Titration)	SM 4500-Cl B	88563	2013-08-29 at 08:18	104554	2013-08-29 at 13:38
Chloride (Titration)	SM 4500-Cl B	88563	2013-08-29 at 08:18	104555	2013-08-29 at 13:45
TPH DRO - NEW	S 8015 D	88645	2013-08-30 at 14:00	104631	2013-09-03 at 09:27
TPH GRO	S 8015 D	88624	2013-08-30 at 16:54	104610	2013-08-30 at 16:54

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 13082317 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: 339757 - Background 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104523	Date Analyzed:	2013-08-28	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**33.6**	mg/Kg	5	4.00

Sample: 339758 - Background 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104523	Date Analyzed:	2013-08-28	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**120**	mg/Kg	5	4.00

Sample: 339759 - Background 4'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104523	Date Analyzed:	2013-08-28	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1540**	mg/Kg	5	4.00

Sample: 339760 - Background 6'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104523	Date Analyzed:	2013-08-28	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**974**	mg/Kg	5	4.00

Sample: 339761 - Background 8'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104523	Date Analyzed:	2013-08-28	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1850**	mg/Kg	10	4.00

Sample: 339762 - AH-6 0-1'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	104609	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

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	U	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.41	mg/Kg	1	2.00	70	66.2 - 120
4-Bromofluorobenzene (4-BFB)			1.88	mg/Kg	1	2.00	94	59.5 - 120

Sample: 339762 - AH-6 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104523	Date Analyzed:	2013-08-28	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**14300**	mg/Kg	10	4.00

Sample: 339762 - AH-6 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	104631	Date Analyzed:	2013-09-03	Analyzed By:	CW
Prep Batch:	88645	Sample Preparation:	2013-08-30	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			99.4	mg/Kg	1	100	99	76.3 - 192.6

Sample: 339762 - AH-6 0-1'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	104610	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.88	mg/Kg	1	2.00	94	73 - 122
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	2.42	mg/Kg	1	2.00	121	74.6 - 120

Sample: 339763 - AH-6 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104523	Date Analyzed:	2013-08-28	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**8380**	mg/Kg	10	4.00

Sample: 339764 - AH-6 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104523	Date Analyzed:	2013-08-28	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**6850**	mg/Kg	10	4.00

Sample: 339765 - AH-6 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104523	Date Analyzed:	2013-08-28	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**5500**	mg/Kg	10	4.00

Sample: 339766 - AH-6 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104524	Date Analyzed:	2013-08-28	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**1260**		mg/Kg	10	4.00

Sample: 339767 - AH-6 5-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104524	Date Analyzed:	2013-08-28	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**417**		mg/Kg	5	4.00

Sample: 339768 - AH-7 0-1'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	104609	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

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	U	1	<0.0200		mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.62	mg/Kg	1	2.00	81	66.2 - 120
4-Bromofluorobenzene (4-BFB)			1.84	mg/Kg	1	2.00	92	59.5 - 120

Sample: 339768 - AH-7 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104524	Date Analyzed:	2013-08-28	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**12200**	mg/Kg	10	4.00

Sample: 339768 - AH-7 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	104631	Date Analyzed:	2013-09-03	Analyzed By:	CW
Prep Batch:	88645	Sample Preparation:	2013-08-30	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			98.2	mg/Kg	1	100	98	76.3 - 192.6

Sample: 339768 - AH-7 0-1'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	104610	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.19	mg/Kg	1	2.00	110	73 - 122
4-Bromofluorobenzene (4-BFB)			2.37	mg/Kg	1	2.00	118	74.6 - 120

Sample: 339769 - AH-7 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104524	Date Analyzed:	2013-08-28	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

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

Sample: 339770 - AH-7 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104524	Date Analyzed:	2013-08-28	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**285**	mg/Kg	5	4.00

Sample: 339771 - AH-8 0-1'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	104609	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.69	mg/Kg	1	2.00	84	66.2 - 120
4-Bromofluorobenzene (4-BFB)			1.96	mg/Kg	1	2.00	98	59.5 - 120

Sample: 339771 - AH-8 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104524	Date Analyzed:	2013-08-28	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**11700**	mg/Kg	10	4.00

Sample: 339771 - AH-8 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	104631	Date Analyzed:	2013-09-03	Analyzed By:	CW
Prep Batch:	88645	Sample Preparation:	2013-08-30	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			98.3	mg/Kg	1	100	98	76.3 - 192.6

Sample: 339771 - AH-8 0-1'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	104610	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.29	mg/Kg	1	2.00	114	73 - 122
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	2.53	mg/Kg	1	2.00	126	74.6 - 120

Sample: 339772 - AH-8 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104524	Date Analyzed:	2013-08-28	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**8470**	mg/Kg	10	4.00

Sample: 339773 - AH-8 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104524	Date Analyzed:	2013-08-28	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**4190**	mg/Kg	10	4.00

Sample: 339774 - AH-8 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104524	Date Analyzed:	2013-08-28	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2260**	mg/Kg	10	4.00

Sample: 339775 - AH-8 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104524	Date Analyzed:	2013-08-28	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1390**	mg/Kg	10	4.00

Sample: 339776 - AH-9 0-1'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	104609	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

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	U	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.61	mg/Kg	1	2.00	80	66.2 - 120
4-Bromofluorobenzene (4-BFB)			1.88	mg/Kg	1	2.00	94	59.5 - 120

Sample: 339776 - AH-9 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104541	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**4240**	mg/Kg	10	4.00

Sample: 339776 - AH-9 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	104631	Date Analyzed:	2013-09-03	Analyzed By:	CW
Prep Batch:	88645	Sample Preparation:	2013-08-30	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			108	mg/Kg	1	100	108	76.3 - 192.6

Sample: 339776 - AH-9 0-1'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	104610	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.16	mg/Kg	1	2.00	108	73 - 122
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	2.42	mg/Kg	1	2.00	121	74.6 - 120

Sample: 339777 - AH-9 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104541	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**3870**	mg/Kg	10	4.00

Sample: 339778 - AH-9 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104541	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**2250**	mg/Kg	10	4.00

Sample: 339779 - AH-10 0-1'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	104609	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

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	U	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.49	mg/Kg	1	2.00	74	66.2 - 120
4-Bromofluorobenzene (4-BFB)			1.78	mg/Kg	1	2.00	89	59.5 - 120

Sample: 339779 - AH-10 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104541	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**5770**	mg/Kg	10	4.00

Sample: 339779 - AH-10 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	104631	Date Analyzed:	2013-09-03	Analyzed By:	CW
Prep Batch:	88645	Sample Preparation:	2013-08-30	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			110	mg/Kg	1	100	110	76.3 - 192.6

Sample: 339779 - AH-10 0-1'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	104610	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.99	mg/Kg	1	2.00	100	73 - 122
4-Bromofluorobenzene (4-BFB)			2.28	mg/Kg	1	2.00	114	74.6 - 120

Sample: 339780 - AH-10 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104541	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**4430**	mg/Kg	10	4.00

Sample: 339781 - AH-10 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104541	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**5060**	mg/Kg	10	4.00

Sample: 339782 - AH-10 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104541	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

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

Sample: 339783 - AH-10 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104541	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1290**	mg/Kg	10	4.00

Sample: 339784 - AH-11 0-1'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	104609	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

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	U	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.84	mg/Kg	1	2.00	92	66.2 - 120
4-Bromofluorobenzene (4-BFB)			1.85	mg/Kg	1	2.00	92	59.5 - 120

Sample: 339784 - AH-11 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104541	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**9350**	mg/Kg	10	4.00

Sample: 339784 - AH-11 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	104631	Date Analyzed:	2013-09-03	Analyzed By:	CW
Prep Batch:	88645	Sample Preparation:	2013-08-30	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			128	mg/Kg	1	100	128	76.3 - 192.6

Sample: 339784 - AH-11 0-1'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	104610	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr	2.48	mg/Kg	1	2.00	124	73 - 122
4-Bromofluorobenzene (4-BFB)			2.39	mg/Kg	1	2.00	120	74.6 - 120

Sample: 339785 - AH-11 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104541	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**9090**	mg/Kg	10	4.00

Sample: 339786 - AH-11 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104543	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**4910**	mg/Kg	10	4.00

Sample: 339787 - AH-11 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104543	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2460**	mg/Kg	10	4.00

Sample: 339788 - AH-11 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104543	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2090**	mg/Kg	10	4.00

Sample: 339789 - AH-11 5-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104543	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1720**	mg/Kg	10	4.00

Sample: 339790 - AH-11 6-6.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104543	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1340**	mg/Kg	10	4.00

Sample: 339791 - AH-11 7-7.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104543	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2230**	mg/Kg	10	4.00

Sample: 339792 - AH-12 0-1'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	104609	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

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	U	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.58	mg/Kg	1	2.00	79	66.2 - 120
4-Bromofluorobenzene (4-BFB)			1.77	mg/Kg	1	2.00	88	59.5 - 120

Sample: 339792 - AH-12 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104543	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**5110**	mg/Kg	10	4.00

Sample: 339792 - AH-12 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	104631	Date Analyzed:	2013-09-03	Analyzed By:	CW
Prep Batch:	88645	Sample Preparation:	2013-08-30	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			126	mg/Kg	1	100	126	76.3 - 192.6

Sample: 339792 - AH-12 0-1'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	104610	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.11	mg/Kg	1	2.00	106	73 - 122
4-Bromofluorobenzene (4-BFB)			2.28	mg/Kg	1	2.00	114	74.6 - 120

Sample: 339793 - AH-12 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104543	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**4240**	mg/Kg	10	4.00

Sample: 339794 - AH-12 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104543	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**3130**	mg/Kg	10	4.00

Sample: 339795 - AH-12 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104543	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**1340**		mg/Kg	10	4.00

Sample: 339796 - AH-12 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104544	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**1090**		mg/Kg	5	4.00

Sample: 339797 - AH-13 0-1'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	104609	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Benzene [1]	U	1	<0.0400		mg/Kg	2	0.0200
Toluene	U	1	<0.0400		mg/Kg	2	0.0200
Ethylbenzene	U	1	<0.0400		mg/Kg	2	0.0200
Xylene	U	1	<0.0400		mg/Kg	2	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr	1.27	mg/Kg	2	2.00	64	66.2 - 120
4-Bromofluorobenzene (4-BFB)			1.60	mg/Kg	2	2.00	80	59.5 - 120

Sample: 339797 - AH-13 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104544	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**3980**	mg/Kg	10	4.00

Sample: 339797 - AH-13 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	104631	Date Analyzed:	2013-09-03	Analyzed By:	CW
Prep Batch:	88645	Sample Preparation:	2013-08-30	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			105	mg/Kg	1	100	105	76.3 - 192.6

Sample: 339797 - AH-13 0-1'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	104610	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.56	mg/Kg	2	2.00	78	73 - 122
4-Bromofluorobenzene (4-BFB)			2.05	mg/Kg	2	2.00	102	74.6 - 120

Sample: 339798 - AH-13 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104544	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	Sample Preparation:	2013-08-28	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1330**	mg/Kg	10	4.00

Sample: 339799 - AH-13 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104554	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88563	Sample Preparation:	2013-08-29	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**148**	mg/Kg	5	4.00

Sample: 339800 - AH-14 0-1'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	104609	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

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

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		1.18	mg/Kg	1	2.00	59	66.2 - 120
4-Bromofluorobenzene (4-BFB)				1.76	mg/Kg	1	2.00	88	59.5 - 120

Sample: 339800 - AH-14 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104554	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88563	Sample Preparation:	2013-08-29	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**167**	mg/Kg	5	4.00

Sample: 339800 - AH-14 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	104631	Date Analyzed:	2013-09-03	Analyzed By:	CW
Prep Batch:	88645	Sample Preparation:	2013-08-30	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			119	mg/Kg	1	100	119	76.3 - 192.6

Sample: 339800 - AH-14 0-1'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	104610	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.54	mg/Kg	1	2.00	77	73 - 122
4-Bromofluorobenzene (4-BFB)			2.25	mg/Kg	1	2.00	112	74.6 - 120

Sample: 339801 - AH-14 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104554	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88563	Sample Preparation:	2013-08-29	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**2370**	mg/Kg	10	4.00

Sample: 339802 - AH-14 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104554	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88563	Sample Preparation:	2013-08-29	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**11700**	mg/Kg	10	4.00

Sample: 339803 - AH-14 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104554	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88563	Sample Preparation:	2013-08-29	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**669**	mg/Kg	5	4.00

Sample: 339804 - AH-14 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104554	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88563	Sample Preparation:	2013-08-29	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**540**		mg/Kg	5	4.00

Sample: 339805 - AH-14 5-5.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104554	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88563	Sample Preparation:	2013-08-29	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**43.0**		mg/Kg	5	4.00

Sample: 339806 - AH-14 6-6.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104554	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88563	Sample Preparation:	2013-08-29	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**110**		mg/Kg	5	4.00

Sample: 339807 - AH-15 0-1'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	104609	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

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

continued ...

sample 339807 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Xylene	U	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr	1.30	mg/Kg	1	2.00	65	66.2 - 120
4-Bromofluorobenzene (4-BFB)			1.59	mg/Kg	1	2.00	80	59.5 - 120

Sample: 339807 - AH-15 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104554	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88563	Sample Preparation:	2013-08-29	Prepared By:	AR

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

Sample: 339807 - AH-15 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	104631	Date Analyzed:	2013-09-03	Analyzed By:	CW
Prep Batch:	88645	Sample Preparation:	2013-08-30	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			111	mg/Kg	1	100	111	76.3 - 192.6

Sample: 339807 - AH-15 0-1'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	104610	Date Analyzed:	2013-08-30	Analyzed By:	MT
Prep Batch:	88624	Sample Preparation:	2013-08-30	Prepared By:	MT

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.73	mg/Kg	1	2.00	86	73 - 122
4-Bromofluorobenzene (4-BFB)			2.05	mg/Kg	1	2.00	102	74.6 - 120

Sample: 339808 - AH-15 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104554	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88563	Sample Preparation:	2013-08-29	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**81.2**	mg/Kg	5	4.00

Sample: 339809 - AH-15 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104555	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88563	Sample Preparation:	2013-08-29	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**556**	mg/Kg	5	4.00

Sample: 339810 - AH-15 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104555	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88563	Sample Preparation:	2013-08-29	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**3110**	mg/Kg	10	4.00

Sample: 339811 - AH-15 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104555	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88563	Sample Preparation:	2013-08-29	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**2750**	mg/Kg	10	4.00

Sample: 339812 - AH-5 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	104555	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88563	Sample Preparation:	2013-08-29	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**4210**	mg/Kg	10	4.00

Method Blanks

Method Blank (1) QC Batch: 104523

QC Batch:	104523	Date Analyzed:	2013-08-28	Analyzed By:	AR
Prep Batch:	88533	QC Preparation:	2013-08-28	Prepared By:	AR

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

Method Blank (1) QC Batch: 104524

QC Batch:	104524	Date Analyzed:	2013-08-28	Analyzed By:	AR
Prep Batch:	88533	QC Preparation:	2013-08-28	Prepared By:	AR

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

Method Blank (1) QC Batch: 104541

QC Batch:	104541	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	QC Preparation:	2013-08-28	Prepared By:	AR

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

Method Blank (1) QC Batch: 104543

QC Batch:	104543	Date Analyzed:	2013-08-29	Analyzed By:	AR
Prep Batch:	88533	QC Preparation:	2013-08-28	Prepared By:	AR

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

Method Blank (1) QC Batch: 104544

QC Batch: 104544 Date Analyzed: 2013-08-29 Analyzed By: AR
Prep Batch: 88533 QC Preparation: 2013-08-28 Prepared By: AR

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

Method Blank (1) QC Batch: 104554

QC Batch: 104554 Date Analyzed: 2013-08-29 Analyzed By: AR
Prep Batch: 88563 QC Preparation: 2013-08-29 Prepared By: AR

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

Method Blank (1) QC Batch: 104555

QC Batch: 104555 Date Analyzed: 2013-08-29 Analyzed By: AR
Prep Batch: 88563 QC Preparation: 2013-08-29 Prepared By: AR

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

Method Blank (1) QC Batch: 104609

QC Batch: 104609 | Date Analyzed: 2013-08-30 | Analyzed By: MT
Prep Batch: 88624 | QC Preparation: 2013-08-30 | Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00473	mg/Kg	0.02
Toluene		1	<0.00416	mg/Kg	0.02
Ethylbenzene		1	<0.00511	mg/Kg	0.02
Xylene		1	<0.00430	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.79	mg/Kg	1	2.00	90	66.2 - 120
4-Bromofluorobenzene (4-BFB)			1.74	mg/Kg	1	2.00	87	59.5 - 120

Method Blank (1) QC Batch: 104610

QC Batch: 104610 | Date Analyzed: 2013-08-30 | Analyzed By: MT
Prep Batch: 88624 | QC Preparation: 2013-08-30 | Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.230	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.40	mg/Kg	1	2.00	120	73 - 122
4-Bromofluorobenzene (4-BFB)			2.23	mg/Kg	1	2.00	112	74.6 - 120

Method Blank (1) QC Batch: 104631

QC Batch: 104631 | Date Analyzed: 2013-09-03 | Analyzed By: CW
Prep Batch: 88645 | QC Preparation: 2013-08-30 | Prepared By: CW

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		2	16.6	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			94.2	mg/Kg	1	100	94	64.1 - 164.4

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 104523 | Date Analyzed: 2013-08-28 | Analyzed By: AR
Prep Batch: 88533 | QC Preparation: 2013-08-28 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2430	mg/Kg	1	2500	<3.85	97	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	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: 104524 | Date Analyzed: 2013-08-28 | Analyzed By: AR
Prep Batch: 88533 | QC Preparation: 2013-08-28 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2360	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			2480	mg/Kg	1	2500	<3.85	99	89.7 - 115.9	5	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: 104541 | Date Analyzed: 2013-08-29 | Analyzed By: AR
Prep Batch: 88533 | QC Preparation: 2013-08-28 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2530	mg/Kg	1	2500	<3.85	101	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			2690	mg/Kg	1	2500	<3.85	108	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: 104543 | Date Analyzed: 2013-08-29 | Analyzed By: AR
Prep Batch: 88533 | QC Preparation: 2013-08-28 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2420	mg/Kg	1	2500	<3.85	97	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			2520	mg/Kg	1	2500	<3.85	101	89.7 - 115.9	4	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 104544 | Date Analyzed: 2013-08-29 | Analyzed By: AR
Prep Batch: 88533 | QC Preparation: 2013-08-28 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2490	mg/Kg	1	2500	<3.85	100	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			2380	mg/Kg	1	2500	<3.85	95	89.7 - 115.9	4	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 104554 | Date Analyzed: 2013-08-29 | Analyzed By: AR
Prep Batch: 88563 | QC Preparation: 2013-08-29 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2400	mg/Kg	1	2500	<3.85	96	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			2290	mg/Kg	1	2500	<3.85	92	89.7 - 115.9	5	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: 104555 | Date Analyzed: 2013-08-29 | Analyzed By: AR
Prep Batch: 88563 | QC Preparation: 2013-08-29 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2600	mg/Kg	1	2500	<3.85	104	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			2560	mg/Kg	1	2500	<3.85	102	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: 104609 | Date Analyzed: 2013-08-30 | Analyzed By: MT
Prep Batch: 88624 | QC Preparation: 2013-08-30 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.56	mg/Kg	1	2.00	<0.00473	78	69.3 - 120
Toluene		1	1.71	mg/Kg	1	2.00	<0.00416	86	70.5 - 120
Ethylbenzene		1	1.75	mg/Kg	1	2.00	<0.00511	88	70.6 - 120

continued ...

control spikes continued ...

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Xylene		1	5.28	mg/Kg	1	6.00	<0.00430	88	70.7 - 120

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.42	mg/Kg	1	2.00	<0.00473	71	69.3 - 120	9	20
Toluene		1	1.53	mg/Kg	1	2.00	<0.00416	76	70.5 - 120	11	20
Ethylbenzene		1	1.58	mg/Kg	1	2.00	<0.00511	79	70.6 - 120	10	20
Xylene		1	4.78	mg/Kg	1	6.00	<0.00430	80	70.7 - 120	10	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)	1.73	1.55	mg/Kg	1	2.00	86	78	66.2 - 120
4-Bromofluorobenzene (4-BFB)	1.73	1.54	mg/Kg	1	2.00	86	77	59.5 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 104610 | Date Analyzed: 2013-08-30 | Analyzed By: MT
Prep Batch: 88624 | QC Preparation: 2013-08-30 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	14.3	mg/Kg	1	20.0	<0.230	72	60.1 - 120

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	15.4	mg/Kg	1	20.0	<0.230	77	60.1 - 120	7	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)	1.89	2.09	mg/Kg	1	2.00	94	104	73 - 122
4-Bromofluorobenzene (4-BFB)	2.00	2.19	mg/Kg	1	2.00	100	110	74.6 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 104631 | Date Analyzed: 2013-09-03 | Analyzed By: CW
Prep Batch: 88645 | QC Preparation: 2013-08-30 | Prepared By: CW

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		2	291	mg/Kg	1	250	16.6	110	53.8 - 129

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		2	286	mg/Kg	1	250	16.6	108	53.8 - 129	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	96.4	98.9	mg/Kg	1	100	96	99	61.3 - 170.4

Matrix Spike (MS-1) Spiked Sample: 339765

QC Batch: 104523 | Date Analyzed: 2013-08-28 | Analyzed By: AR
Prep Batch: 88533 | QC Preparation: 2013-08-28 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			7980	mg/Kg	10	2500	5500	99	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			8400	mg/Kg	10	2500	5500	116	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: 339775

QC Batch: 104524 | Date Analyzed: 2013-08-28 | Analyzed By: AR
Prep Batch: 88533 | QC Preparation: 2013-08-28 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			4060	mg/Kg	10	2500	1390	107	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			3700	mg/Kg	10	2500	1390	92	78.9 - 121	9	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: 339785

QC Batch: 104541 | Date Analyzed: 2013-08-29 | Analyzed By: AR
Prep Batch: 88533 | QC Preparation: 2013-08-28 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			11900	mg/Kg	10	2500	9090	112	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			11500	mg/Kg	10	2500	9090	96	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: 339795

QC Batch: 104543 | Date Analyzed: 2013-08-29 | Analyzed By: AR
Prep Batch: 88533 | QC Preparation: 2013-08-28 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3640	mg/Kg	10	2500	1340	92	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			3970	mg/Kg	10	2500	1340	105	78.9 - 121	9	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: 339798

QC Batch: 104544 | Date Analyzed: 2013-08-29 | Analyzed By: AR
Prep Batch: 88533 | QC Preparation: 2013-08-28 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3730	mg/Kg	10	2500	1330	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			3960	mg/Kg	10	2500	1330	105	78.9 - 121	6	20

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

Matrix Spike (MS-1) Spiked Sample: 339808

QC Batch: 104554 | Date Analyzed: 2013-08-29 | Analyzed By: AR
Prep Batch: 88563 | QC Preparation: 2013-08-29 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2620	mg/Kg	5	2500	81.2	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			2500	mg/Kg	5	2500	81.2	97	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: 339893

QC Batch: 104555 | Date Analyzed: 2013-08-29 | Analyzed By: AR
Prep Batch: 88563 | QC Preparation: 2013-08-29 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			5170	mg/Kg	10	2500	2920	90	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			5560	mg/Kg	10	2500	2920	106	78.9 - 121	7	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: 339800

QC Batch: 104609 | Date Analyzed: 2013-08-30 | Analyzed By: MT
Prep Batch: 88624 | QC Preparation: 2013-08-30 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.45	mg/Kg	1	2.00	<0.00473	72	63.6 - 120
Toluene		1	1.59	mg/Kg	1	2.00	<0.00416	80	67.8 - 128
Ethylbenzene		1	1.64	mg/Kg	1	2.00	<0.00511	82	69.5 - 136
Xylene		1	4.93	mg/Kg	1	6.00	<0.00430	82	69.3 - 139

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	1.52	mg/Kg	1	2.00	<0.00473	76	63.6 - 120	5	20
Toluene		1	1.67	mg/Kg	1	2.00	<0.00416	84	67.8 - 128	5	20
Ethylbenzene		1	1.74	mg/Kg	1	2.00	<0.00511	87	69.5 - 136	6	20
Xylene		1	5.23	mg/Kg	1	6.00	<0.00430	87	69.3 - 139	6	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.62	1.49	mg/Kg	1	2	81	74	66.2 - 120
4-Bromofluorobenzene (4-BFB)	1.63	1.71	mg/Kg	1	2	82	86	59.5 - 120

Matrix Spike (MS-1) Spiked Sample: 339800

QC Batch: 104610 | Date Analyzed: 2013-08-30 | Analyzed By: MT
Prep Batch: 88624 | QC Preparation: 2013-08-30 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	15.2	mg/Kg	1	20.0	<0.230	76	40.3 - 120

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.4	mg/Kg	1	20.0	<0.230	87	40.3 - 120	13	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)	1.97	2.21	mg/Kg	1	2	98	111	73 - 122
4-Bromofluorobenzene (4-BFB)	2.31	2.42	mg/Kg	1	2	116	121	74.6 - 120

Matrix Spike (MS-1) Spiked Sample: 339762

QC Batch: 104631 | Date Analyzed: 2013-09-03 | Analyzed By: CW
Prep Batch: 88645 | QC Preparation: 2013-08-30 | Prepared By: CW

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		2	269	mg/Kg	1	250	<10.2	108	29 - 168.5

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		2	271	mg/Kg	1	250	<10.2	104	29 - 168.5	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
n-Tricosane	103	98.8	mg/Kg	1	100	103	99	59.5 - 168.9

Calibration Standards

Standard (CCV-1)

QC Batch: 104523 | Date Analyzed: 2013-08-28 | 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	2013-08-28

Standard (CCV-2)

QC Batch: 104523 | Date Analyzed: 2013-08-28 | 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	98.0	98	85 - 115	2013-08-28

Standard (CCV-1)

QC Batch: 104524 | Date Analyzed: 2013-08-28 | 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	2013-08-28

Standard (CCV-2)

QC Batch: 104524 | Date Analyzed: 2013-08-28 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.8	100	85 - 115	2013-08-28

Standard (CCV-1)

QC Batch: 104541 Date Analyzed: 2013-08-29 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	2013-08-29

Standard (CCV-2)

QC Batch: 104541 Date Analyzed: 2013-08-29 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.9	100	85 - 115	2013-08-29

Standard (CCV-1)

QC Batch: 104543 Date Analyzed: 2013-08-29 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	2013-08-29

Standard (CCV-2)

QC Batch: 104543 Date Analyzed: 2013-08-29 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	2013-08-29

Standard (CCV-1)

QC Batch: 104544 Date Analyzed: 2013-08-29 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	2013-08-29

Standard (CCV-2)

QC Batch: 104544 Date Analyzed: 2013-08-29 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	2013-08-29

Standard (CCV-1)

QC Batch: 104554 Date Analyzed: 2013-08-29 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.9	100	85 - 115	2013-08-29

Standard (CCV-2)

QC Batch: 104554 Date Analyzed: 2013-08-29 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	2013-08-29

Standard (CCV-1)

QC Batch: 104555 Date Analyzed: 2013-08-29 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	2013-08-29

Standard (CCV-2)

QC Batch: 104555 Date Analyzed: 2013-08-29 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	2013-08-29

Standard (CCV-1)

QC Batch: 104609 Date Analyzed: 2013-08-30 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0849	85	80 - 120	2013-08-30
Toluene		1	mg/kg	0.100	0.0845	84	80 - 120	2013-08-30
Ethylbenzene		1	mg/kg	0.100	0.0825	82	80 - 120	2013-08-30
Xylene		1	mg/kg	0.300	0.248	83	80 - 120	2013-08-30

Standard (CCV-2)

QC Batch: 104609 Date Analyzed: 2013-08-30 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0838	84	80 - 120	2013-08-30
Toluene		1	mg/kg	0.100	0.0866	87	80 - 120	2013-08-30
Ethylbenzene		1	mg/kg	0.100	0.0846	85	80 - 120	2013-08-30
Xylene		1	mg/kg	0.300	0.252	84	80 - 120	2013-08-30

Standard (CCV-3)

QC Batch: 104609 | Date Analyzed: 2013-08-30 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0838	84	80 - 120	2013-08-30
Toluene		1	mg/kg	0.100	0.0858	86	80 - 120	2013-08-30
Ethylbenzene		1	mg/kg	0.100	0.0840	84	80 - 120	2013-08-30
Xylene		1	mg/kg	0.300	0.249	83	80 - 120	2013-08-30

Standard (CCV-1)

QC Batch: 104610 | Date Analyzed: 2013-08-30 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.08	108	80 - 120	2013-08-30

Standard (CCV-2)

QC Batch: 104610 | Date Analyzed: 2013-08-30 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.875	88	80 - 120	2013-08-30

Standard (CCV-3)

QC Batch: 104610 | Date Analyzed: 2013-08-30 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.926	93	80 - 120	2013-08-30

Standard (CCV-1)

QC Batch: 104631 | Date Analyzed: 2013-09-03 | Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	260	104	80 - 120	2013-09-03

Standard (CCV-2)

QC Batch: 104631 | Date Analyzed: 2013-09-03 | Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	278	111	80 - 120	2013-09-03

Standard (CCV-3)

QC Batch: 104631 | Date Analyzed: 2013-09-03 | Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	275	110	80 - 120	2013-09-03

Standard (CCV-4)

QC Batch: 104631 | Date Analyzed: 2013-09-03 | Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	279	112	80 - 120	2013-09-03

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-13-9	Lubbock
2	NELAP	T104704392-12-4	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
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 Sample dilution due to surfactants.
2 Sample dilution due to surfactants.

Attachments

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

1308 2317

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 6

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: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 112MC05538

PROJECT NAME: SRO SWD #101 Eddy, NM

LAB I.D. NUMBER	DATE	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
339757	8-20-13		S		X	Background 0-1					X													X				
758			S		X	" 2-2.5					X													X				
759			S		X	" 4					X													X				
760			S		X	" 6					X													X				
761			S		X	" 8					X													X				
762			S		X	AH-6 0-1					X		X	X										X				
763			S		X	" 1-1.5					X													X				
764			S		X	" 2-2.5					X													X				
765			S		X	" 3-3.5					X													X				
766			S		X	" 4-4.5					X													Y				

RELINQUISHED BY: (Signature) Date: 8/23/13 Time: 1340 RECEIVED BY: (Signature) Date: 8/23/13 Time: 1340

SAMPLED BY: (Print & Initial) MK & CG Date: 8-20-13 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: Results by:

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

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 2.0°

REMARKS: Run deeper samples if Benzene exceeds 10, total BTEX exceeds 50, or TPH exceeds 100.

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

Midland - alf

1308237

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: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 112MC05538

PROJECT NAME: SRO SWD #107 Eddy, NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. (Ext. to C35) TX1005	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
767	8.20B		S		X	AH-6 5-5.5					X														X				
768			S		X	AH-7 0-1					X		X	X											X				
769			S		X	" 1-1.5					X														X				
770			S		X	" 2-2.5					X														X				
771			S		X	AH-8 0-1					X		X	X											X				
772			S		X	" 1-1.5					X														X				
773			S		X	" 2-2.5					X														X				
774			S		X	" 3-3.5					X														X				
775			S		X	" 4-4.5					X														X				
776			S		X	AH-9 0-1					X		X	X											X				

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature) Date: 8/23/13 Time: 8:24

RECEIVED BY: (Signature) Date: 8/23/13 Time: 9:41

SAMPLED BY: (Print & Initial) MC JCG Date: 8-20-13 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:

Results by:

RECEIVING LABORATORY:

ADDRESS:

CITY: STATE: ZIP:

CONTACT: PHONE:

RECEIVED BY: (Signature)

DATE: TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 2C°

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.

13082317

Analysis Request of Chain of Custody Record

PAGE: 3 OF: 3

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: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 112MC055338

PROJECT NAME: 3RD SWD #101 Eddy NM

LAB I.D. NUMBER	DATE	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
777	8-20-15		S		X	AH-9 1-1.5					X													X				
778			S		X	" 2-2.5					X													X				
779			S		X	AH-10 0-1					X		X	X										X				
780			S		X	" 1-1.5					X													X				
781			S		X	" 2-2.5					X													X				
782			S		X	" 3-3.5					X													X				
783			S		X	" 4-4.5					X													X				
784			S		X	AH-11 0-1					X		X	X										X				
785			S		X	" 1-1.5					X													X				
786			S		X	" 2-2.5					X													X				

RELINQUISHED BY: (Signature) Date: 8/20/15 Time: 1600 — RECEIVED BY: (Signature) Date: 8/21/15 Time: 940 — SAMPLED BY: (Print & Initial) MK JCG Date: 8-20-2015 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: — Results by:

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

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 2.0°

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.

1308237

Analysis Request of Chain of Custody Record

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: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 112NC055538

PROJECT NAME: BRO 5100 #701 Eddy, NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. (Ext. to C35) TX1005	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
787	8-20-13		S		X	AH-11 3-3.5					X														X				
788			S		X	" 4-4.5					X														X				
789			S		X	" 5-5.5					X														X				
790			S		X	" 6-6.5					X														X				
791			S		X	" 7-7.5					X														X				
792			S		X	AH-12 0-1					X		X	X											X				
793			S		X	" 1-1.5					X														X				
794			S		X	" 2-2.5					X														X				
795			S		X	" 3-3.5					X														X				
796			S		X	" 4-4.5					X														X				

RELINQUISHED BY: (Signature) Date: 8/23/13 Time: 0946 RECEIVED BY: (Signature) Date: 8/23/13 Time: 946 SAMPLED BY: (Print & Initial) NK KGE Date: 8-20-13 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: Results by:

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

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 2.0°

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.

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Analysis Request of Chain of Custody Record

PAGE: 5 OF: 6

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: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 112M105538

PROJECT NAME: SRO SWD 101 Eddy, NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD (Ext. to C35) TX1005	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
797	8-20-13		S		X	AH-13 0-1					X		X	X											X				
798			S		X	" 1-1.5					X														X				
799			S		X	" 2-2.5					X														X				
800			S		X	AH-14 0-1					X		X	X											X				
801			S		X	" 1-1.5					X														X				
802			S		X	" 2-2.5					X														X				
803			S		X	" 3-3.5					X														X				
804			S		X	" 4-4.5					X														X				
805			S		X	" 5-5.5					X														X				
806			S		X	" 6-6.5					X														X				

RELINQUISHED BY: (Signature) Date: 8/23/13 Time: 9:26

RECEIVED BY: (Signature) Date: 8/23/13 Time: 9:40

SAMPLED BY: (Print & Initial) MKS CG Date: 8-20-13 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:

Results by:

RECEIVING LABORATORY:

ADDRESS:

CITY: STATE: ZIP:

CONTACT: PHONE:

RECEIVED BY: (Signature)

DATE: TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 2.6°

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.

13082317

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

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: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 112M605538

PROJECT NAME: SRO SWD 101

Eddy, NM

LAB I.D. NUMBER	DATE	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
807	8.20.13		S		X	AH-15 0-1					X		X	X												X				
808			S		X	" 1-1.5					X															X				
809			S		X	" 2-2.5					X															X				
810			S		X	" 3-3.5					X															X				
811			S		X	" 4-4.5					X															X				
812	8.22.13		S		X	AH-5 2-2.5					X		X	X												X				
			S		X																									
			S		X																									
			S		X																									
			S		X																									

RELINQUISHED BY: (Signature) Date: 8/27/13 Time: 0926 RECEIVED BY: (Signature) Date: 8/27/13 Time: 9:40

SAMPLED BY: (Print & Initial) MK B CA Date: 8.20.13 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: Results by:

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

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 20°

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.