SITE INFORMATION

Report Type: Closure Report

General Site Information:						
Site:	Folk Federal B Tank Battery					
Company:	COG Operating LLC					
Section, Township and Range	Unit H	Sec 17	T17S	R29E		
Lease Number:	(API#) 30-015-36862					
County:	Eddy County					
GPS:	32.83660° N			104.09160° W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From the intersection of Hwy 260 and Hwy 82, turn right and travel west for approximatly 4.23 miles. Turn left crossing the cattle guard and continue north 1.39 miles and turn right east. The location will be on the right.					

Release Data:	
Date Released:	12/30/2012
Type Release:	Produced Water and Oil
Source of Contamination:	Heater Treater
Fluid Released:	90 bbls Oil 100 bbls Produced Water
Fluids Recovered:	70 bbls Oil 80 bbls Produced Water

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AUG 23 2013
NMOCD ARTESIA

Official Communication:			
Name:	Pat Ellis		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	One Concho Center		1910 N. Big Spring
	600 W. Illinois Ave.		
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 682-4559
Fax:	(432) 684-7137		
Email:	pellis@conchoresources.com		ike.tavarez@tetratech.com

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

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

TETRA TECH

July 5, 2013

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

Re: Closure Report for the COG Operating LLC., Folk Federal B Tank Battery, Unit H, Section 17, Township 17 South, Range 29 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 Folk Federal B Tank Battery, located in Unit H, Section 17, Township 17 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.83660°, W 104.09160°. 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 December 30, 2012, and released approximately ninety (90) barrels of oil and one hundred (100) barrels of produced water from a heater treater. Seventy (70) barrels of oil and eighty (80) barrels of produced water were recovered. The leak was caused by a faulty gasket on a fire tube. The gasket has been replaced and the heater treater was returned to service. The final C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 17. According to the NMOCD groundwater map, the average depth to groundwater in this area is greater than 75' below surface. The groundwater data is shown in Figure B.

Tetra Tech
1910 North Big Spring, 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 1,000 mg/kg.

Soil Assessment and Analytical Results

On January 7, 2013, Tetra Tech personnel inspected and sampled the spill area. Nine (9) auger holes (AH-1and AH-9) were installed using a stainless steel hand auger to assess the impacted soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all of the auger hole samples were below the RRAL for benzene. However, auger holes (AH-5 and AH-7) exceeded the RRAL for total BTEX at 0-1' of 123 mg/kg and 224 mg/kg, respectively. In addition, the auger holes (AH-4, AH-5, AH-6 and AH-7) also showed TPH concentrations above the RRAL at 0-1' below surface at 1,842 mg/kg, 8,080 mg/kg, 8,353 mg/kg and 12,790 mg/kg, respectively. Deeper samples were not collected due to the dense caliche formation. These areas were not vertically defined for either TPH of total BTEX.

There was not a chloride impact detected in the soils and exhibited chloride concentrations of <20.0 mg/kg.

TETRA TECH

Site Remediation and Conclusion

On May 15, 2013, Tetra Tech personnel supervised the excavation of the impacted soils. The excavated areas and depths are highlighted in Table 1 and shown on Figure 4. In order to remove the hydrocarbon concentrations above the RRAL, the excavation depths ranged from 1.0' to 1.5' below surface. Once excavated, Tetra Tech collected confirmation samples from the excavation bottoms. The sampling results are shown in Table 1.

Referring to Table 1, the confirmation samples did not show any hydrocarbon impact above the RRAL. Approximately 160 cubic yards^3 of soil were removed and transported to R360 facility for proper disposal. Once approved by the BLM, the site was then backfilled with clean material to surface grade, ripped and seeded.

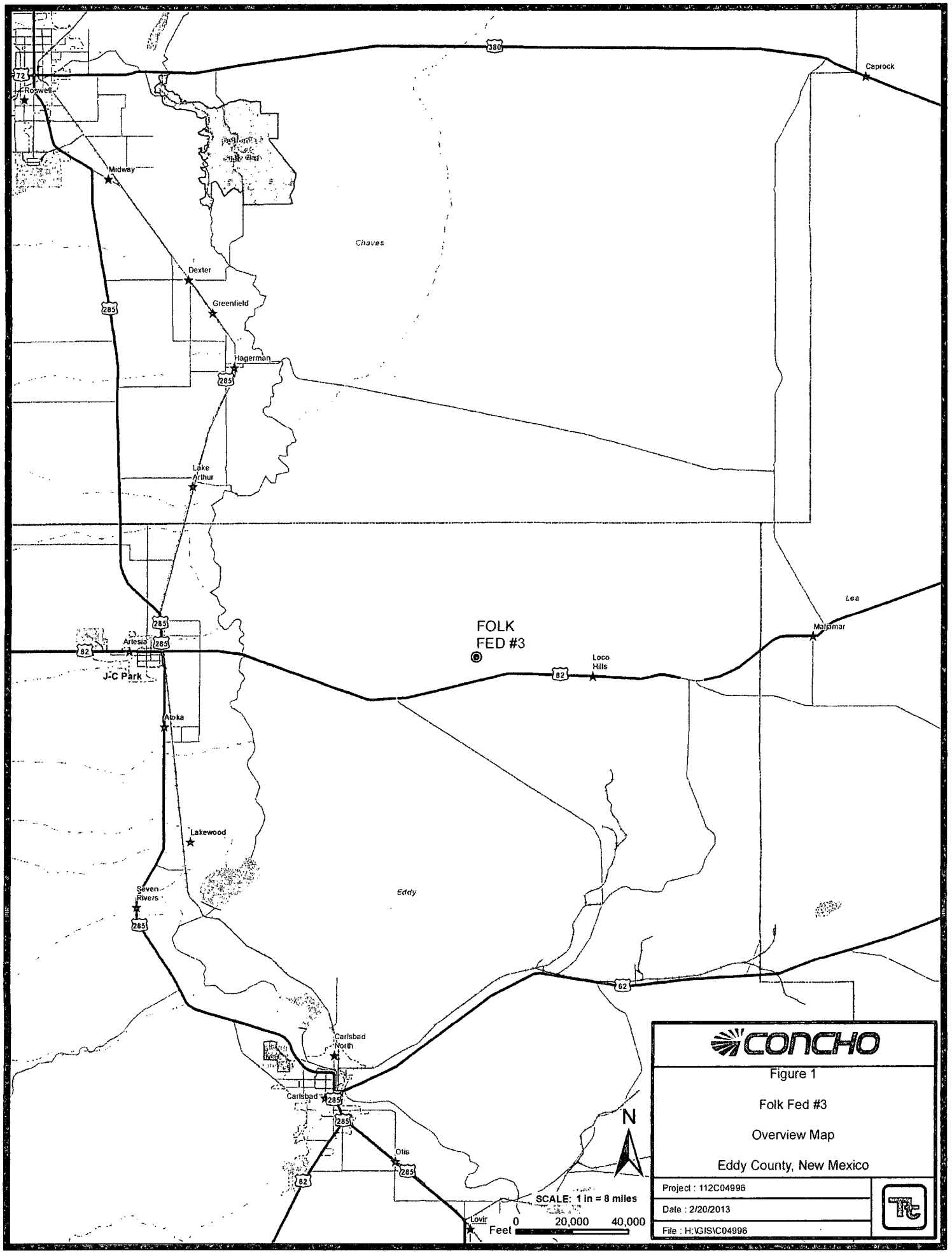
Based on the remediation activities performed at this location, COG requests closure for this site. The C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities performed at the site, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Ike Tavarez, PG
Senior Project Manager

cc: Pat Ellis – COG
Jim Amos - BLM

FIGURES



CONCHO

Figure 1

Folk Fed #3

Overview Map

Eddy County, New Mexico

Project : 112C04996

Date : 2/20/2013

File : H:\GIS\C04996

Drawn By: Isabel Marmolejo

CONCHO

Figure 2

Folk Fed #3

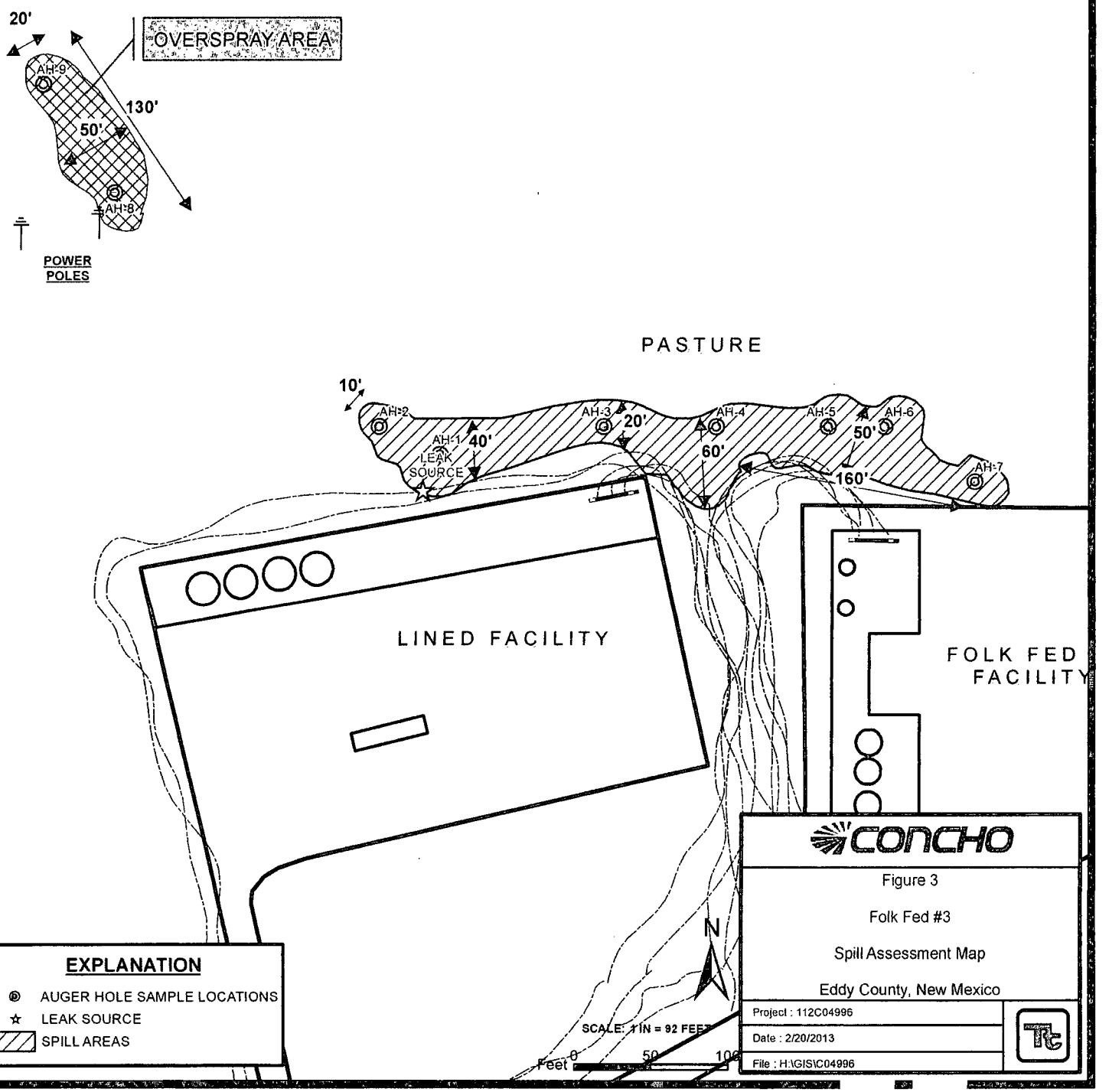
Topo Map 1:24,000

Eddy County, New Mexico

Project : 112C04996

Date : 2/20/2013

File : H:\GIS\C04996



CONCHO

Figure 3

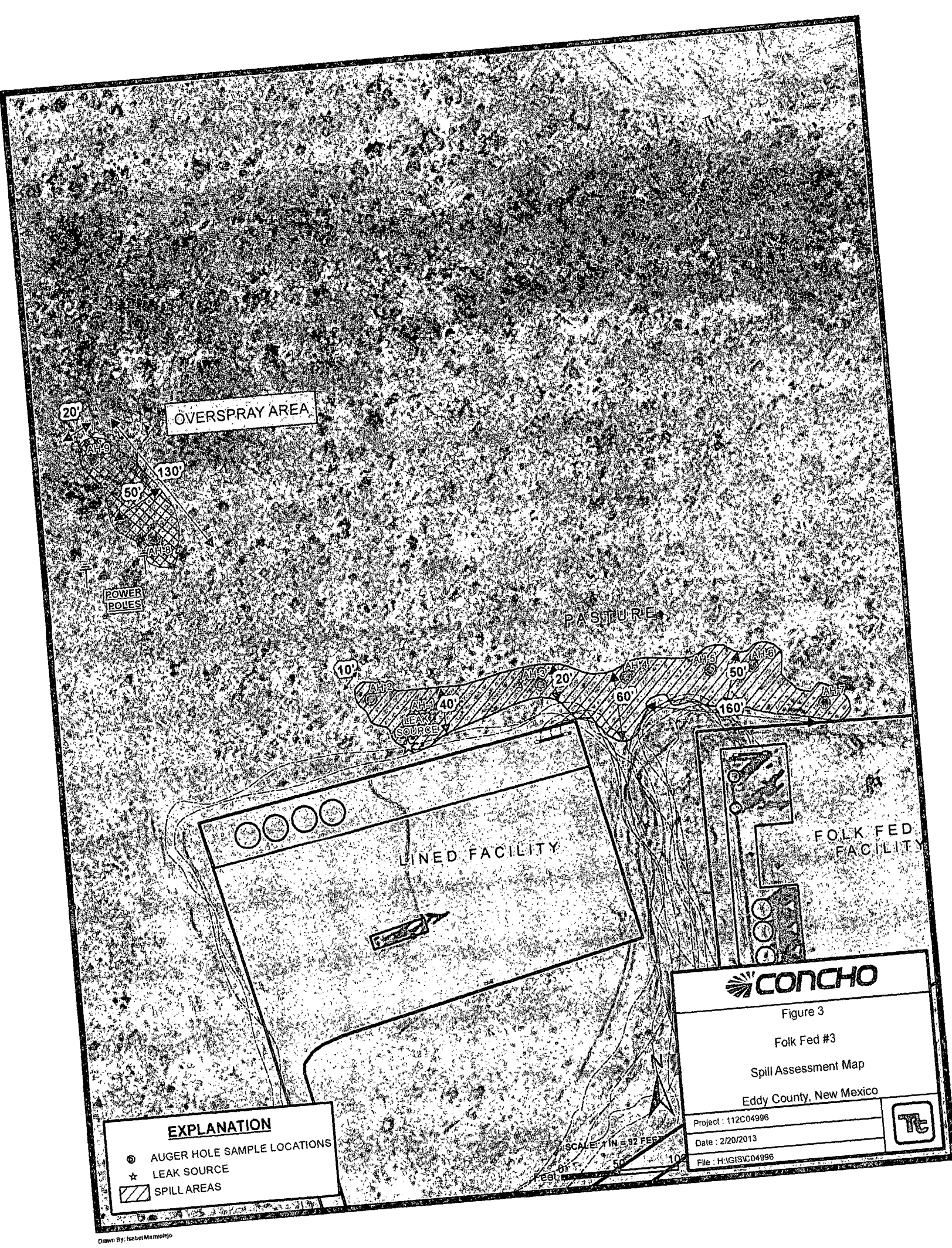
Folk Fed #3

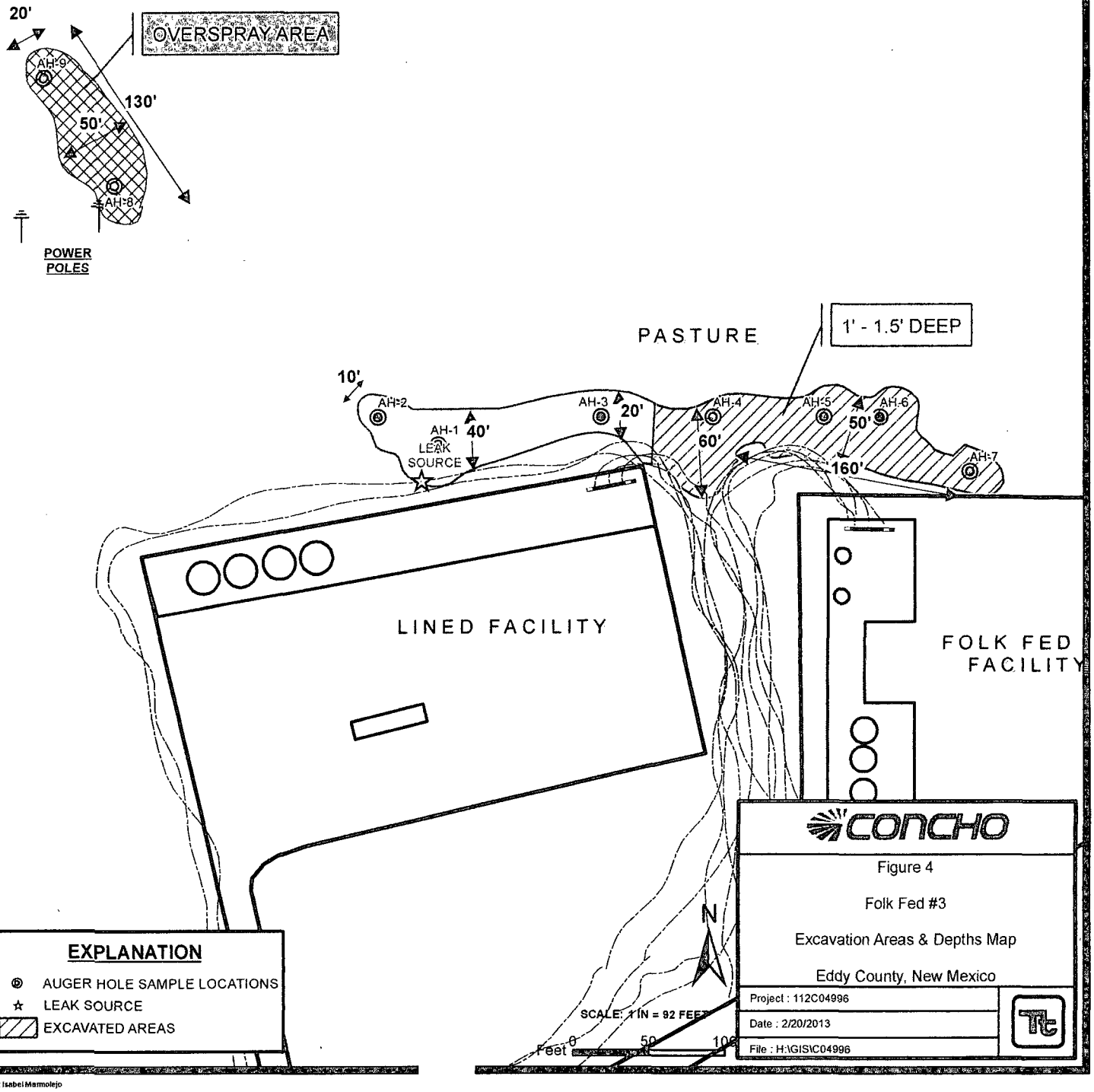
Spill Assessment Map

Eddy County, New Mexico

Project : 112C04996	
Date : 2/20/2013	
File : H:\GIS\C04996	

Drawn By: Isabel Marmolejo


OVERSPRAY AREA
20'
AH-9
130'
50'
AH-8
POWER POLES
PASTURE
10'
AH-2
AH-1
LEAK SOURCE
40'
AH-3
20'
AH-4
60'
AH-5
50'
AH-6
160'
AH-7
LINED FACILITY
FOLK FED FACILITY
N
SCALE: 1 IN = 82 FEET
Feet: 0 50 100
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
LEAK SOURCE
SPILL AREAS
CONCHO
Figure 3
Folk Fed #3
Spill Assessment Map
Eddy County, New Mexico
Project : 112C04996
Date : 2/20/2013
File : H:\GIS\C04996
Drawn By: Isabel Marmolejo


20'
OVERSPRAY AREA
AH-9
130'
50'
AH-8
POWER POLES
PASTURE
1' - 1.5' DEEP
10'
AH-2
AH-3
20'
AH-4
AH-5
AH-6
AH-1
40'
LEAK SOURCE
60'
50'
160'
AH-7
LINED FACILITY
FOLK FED FACILITY
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
LEAK SOURCE
EXCAVATED AREAS
N
SCALE: 1 IN = 92 FEET
Feet 0 50 100
CONCHO
Figure 4
Folk Fed #3
Excavation Areas & Depths Map
Eddy County, New Mexico
Project : 112C04996
Date : 2/20/2013
File : H:\GIS\C04996
Drawn By: Isabel Marmolejo

TABLES

Table 1
COG Operating LLC.
Folk Federal B Tank Battery
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
AH-1	2/12/2013	0-1	X		165	459	624	<0.100	0.451	1.88	4.16	6.49	<20.0
AH-2	2/12/2013	0-1	X		46.8	513	560	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	<20.0
AH-3	2/12/2013	0-1	X		<8.00	746	746	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	<20.0
AH-4	2/12/2013	0-1		X	212	1,630	**1,842**	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	<20.0
CS-1	5/16/2013	1		X	<4.00	<50.0	<50.0	-	-	-	-	-	-
	"	2	X		11.1	<50.0	11.1	-	-	-	-	-	-
	"	3	X		<4.00	<50.0	<50.0	-	-	-	-	-	-
AH-5	2/12/2013	0-1		X	1,580	6,500	**8,080**	<1.00	21.7	36.5	65.0	**123**	<20.0
CS-2	5/16/2013	1		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-
	"	2	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-
	"	3	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-
AH-6	2/12/2013	0-1		X	493	7,860	**8,353**	<1.00	<1.00	<1.00	2.78	2.78	<20.0
CS-3	5/16/2013	1		X	<4.00	<50.0	<50.0	-	-	-	-	-	-
	"	2	X		<4.00	<50.0	<50.0	-	-	-	-	-	-
	"	3	X		<4.00	<50.0	<50.0	-	-	-	-	-	-

Table 1
COG Operating LLC.
Folk Federal B Tank Battery
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
AH-7	2/12/2013	0-1		X	3,180	9,610	**12,790**	4.24	50.1	59.6	110	**224**	<20.0
CS-4	5/16/2013	1		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-
	"	2	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-
	"	3	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	-
AH-8	2/12/2013	0-1	X		6.50	219	226	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<20.0
AH-9	2/12/2013	0-1	X		<4.00	59.1	59.1	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<20.0

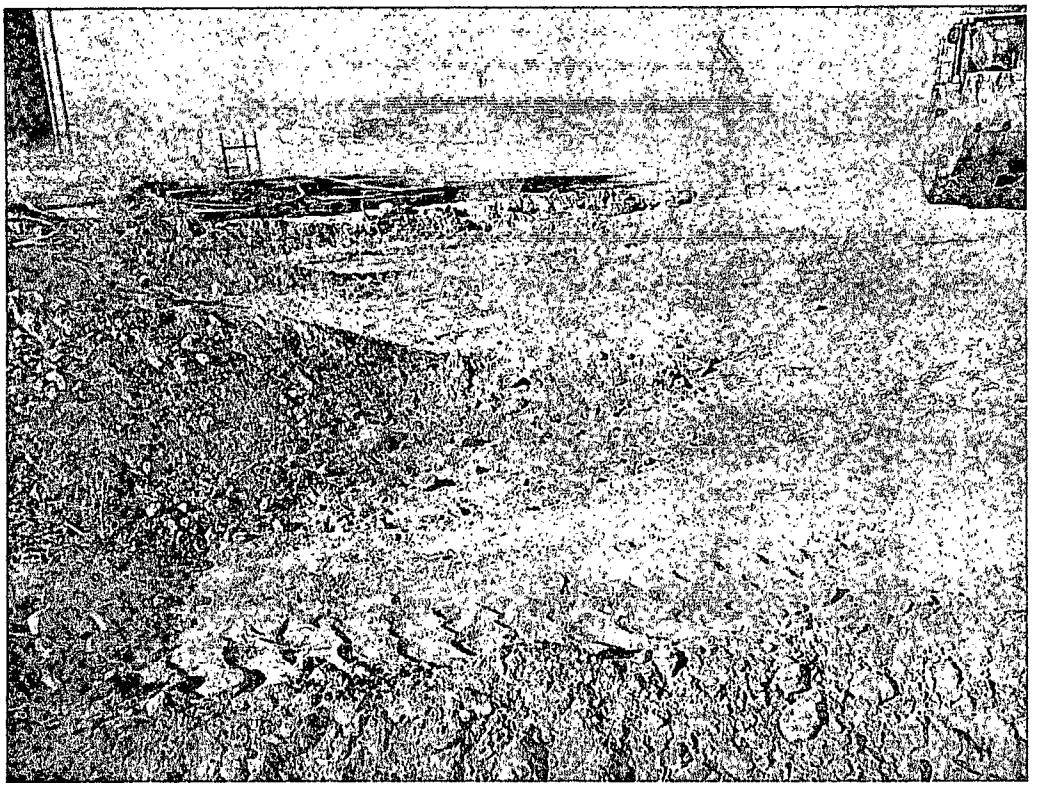
(-) Not Analyzed

Excavated Depths

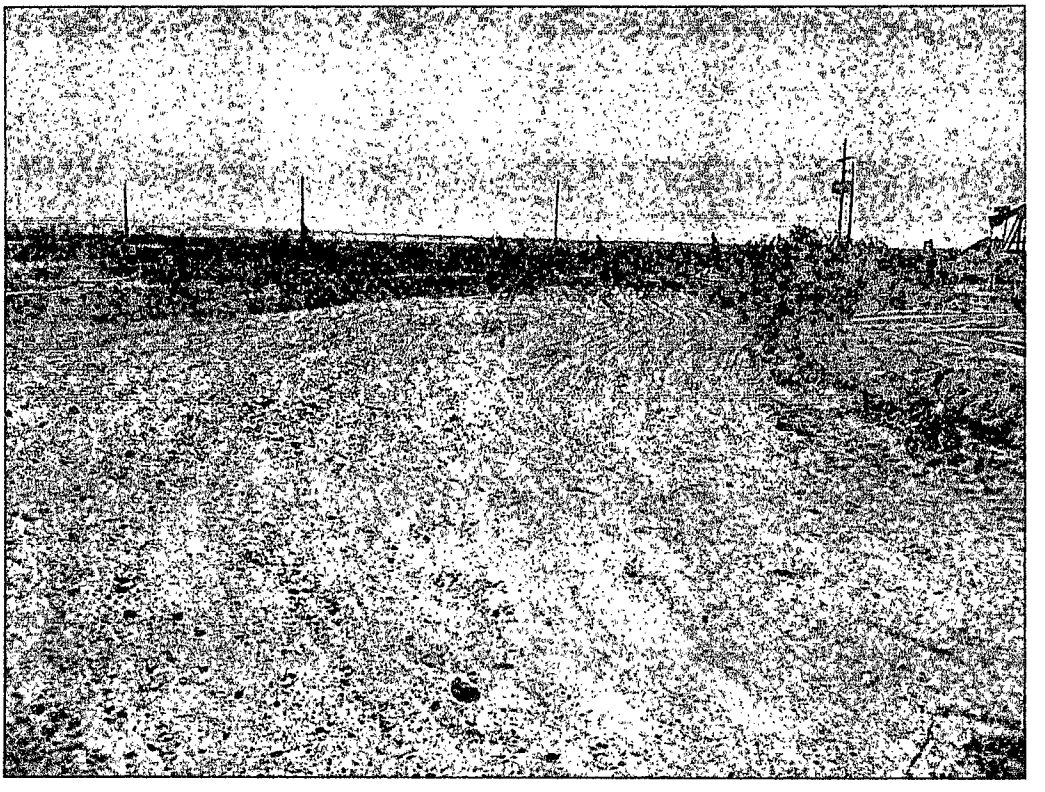
PHOTOGRAPHS

COG Operating LLC
Folk Federal B
Eddy County, New Mexico

TETRA TECH



View West– Excavated areas of AH-4 thru AH-7.



View East – Backfill

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

RECEIVED
AUG 23 2013
NMOCD ARTESIA

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	COG Operating LLC	Contact	Pat Ellis
Address	600 W. Illinois Ave. Midland, Texas 79701	Telephone No.	(432) 230-0077
Facility Name	Folk Federal B	Facility Type	Tank Battery

Surface Owner: Federal	Mineral Owner	Lease No. (API#) 30-015-36862 Closest well

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	17	17S	29E					Eddy

Latitude N 32.50.183° **Longitude** W 104.50.516°

NATURE OF RELEASE

Type of Release: Oil and Produced Water	Volume of Release 90 bbls oil 100 bbls Produced Water	Volume Recovered 70 bbls Oil 80 bbls Produced Water
Source of Release: Heater Treater	Date and Hour of Occurrence 12/30/2012	Date and Hour of Discovery 12/30/2012 4:00 PM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher-OCD, Jim Amos-BLM, Terry Gregston-BLM	
By Whom? Michelle Mullins	Date and Hour 12/31/2012 9:30 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The fire-tube gasket malfunctioned on the heater treater and caused a release of fluid. The heater treater has been repaired and returned to service.

Describe Area Affected and Cleanup Action Taken.*

Tetra Tech personnel inspected the site and collected samples to define the spills extent. Soil that exceeded the RRAL was removed and hauled away for proper disposal. The site was then lined and brought up to surface grade with clean backfill material. Tetra Tech prepared a closure report and submitted it 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	Approved by District Supervisor:	
Title: Project Manager	Approval Date:	Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval:	Attached ☐
Date: 7-5-13 Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
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State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
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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	Folk Federal B	Facility Type	Tank Battery

Surface Owner Federal	Mineral Owner	Lease No. (API#) 30-015-36862 Closest well

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	17	17S	29E					Eddy

Latitude 32 50.183 **Longitude** 104 5.516

NATURE OF RELEASE

Type of Release Oil and Produced water	Volume of Release 90bbls Oil 100bbls Produced water	Volume Recovered 70bbls Oil 80bbls Produced Water
Source of Release Heater treater	Date and Hour of Occurrence 12/30/2012	Date and Hour of Discovery 12/30/2012 4:00 p.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher-OCD, Jim Amos-BLM, Terry Gregston-BLM	
By Whom? Michelle Mullins	Date and Hour 12/31/2012 9:30 a.m.	
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.*

The fire-tube gasket malfunctioned on the heater treater and caused the release of fluid. The heater treater has been repaired and returned to service.

Describe Area Affected and Cleanup Action Taken.*

Initially 190bbls were released from the heater treater at the facility and we were able to recover 150bbls with a vacuum truck. The majority of the release was contained inside the lined facility. There was some overspray from the release in the adjacent pasture area outside of the facility berm. The facility has been returned to its prior condition. Tetra Tech will sample the release area outside of the lined facility to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD/BLM 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: Josh Russo	Approved by District Supervisor:	
Title: Senior Environmental Coordinator	Approval Date:	Expiration Date:
E-mail Address: jrusso@concho.com	Conditions of Approval:	Attached ☐
Date: 01/10/2013 Phone: 432-212-2399		

* Attach Additional Sheets If Necessary

APPENDIX B

Water Well Data
Average Depth to Groundwater (ft)
COG - Folk Federal B Tank Battery
Eddy County, New Mexico

16 South 28 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21 **61**	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

16 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14 220 dry	13
19 **110**	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

16 South 30 East

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

17 South 28 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 **79**	23	24
30	29	28	27	26	25
31	32	33	34	35 **258**	36

17 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	**17 SITE**	16	15	14	13
19	20	21	22 **80**	23	24
30	29 **210** **208'**	28	27	26	25
31	32	33	34	35 153	36

17 South 30 East

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

18 South 28 East

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

18 South 29 East

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

18 South 30 East

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

- 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

Summary Report

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

Report Date: February 25, 2013

Work Order: 13021531

Project Location: Eddy Co., NM
Project Name: COG/Folk Federal B
Project Number: 112C04996

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
321278	AH-1 (0-1')	soil	2013-02-12	00:00	2013-02-15
321279	AH-2 (0-1')	soil	2013-02-12	00:00	2013-02-15
321280	AH-3 (0-1')	soil	2013-02-12	00:00	2013-02-15
321281	AH-4 (0-1')	soil	2013-02-12	00:00	2013-02-15
321282	AH-5 (0-1')	soil	2013-02-12	00:00	2013-02-15
321283	AH-6 (0-1')	soil	2013-02-12	00:00	2013-02-15
321284	AH-7 (0-1')	soil	2013-02-12	00:00	2013-02-15
321285	AH-8 (0-1')	soil	2013-02-12	00:00	2013-02-15
321286	AH-9 (0-1')	soil	2013-02-12	00:00	2013-02-15

	BTEX				TPH DRO - NEW	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
321278 - AH-1 (0-1')	<0.100 [1]	**0.451**	**1.88**	**4.16**	**459**	**165** Qs
321279 - AH-2 (0-1')	<0.0400 [2]	<0.0400	<0.0400	<0.0400	**513**	**46.8** Qs
321280 - AH-3 (0-1')	<0.0400 [3]	<0.0400	<0.0400	<0.0400	**746**	<8.00 Qs
321281 - AH-4 (0-1')	<0.400 [4]	<0.400	<0.400	<0.400	**1630**	**212** Qs
321282 - AH-5 (0-1')	<1.00 [5]	**21.7**	**36.5**	**65.0**	**6500**	**1580** Qs
321283 - AH-6 (0-1')	<1.00 [6]	<1.00	<1.00	**2.78**	**7860**	**493** Qs
321284 - AH-7 (0-1')	**4.24**	**50.1**	**59.6**	**110**	**9610**	**3180**
321285 - AH-8 (0-1')	<0.0200	<0.0200	<0.0200	<0.0200	**219**	**6.50** Qs
321286 - AH-9 (0-1')	<0.0200	<0.0200	<0.0200	<0.0200	**59.1**	<4.00 Qs

[1]Dilution due to hydrocarbons.
[2]Dilution due to hydrocarbons.
[3]Dilution due to surfactant.
[4]Dilution due to sufactant.
[5]Dilution due to hydrocarbons.
[6]Dilution due to sufactant.

Sample: 321278 - AH-1 (0-1')

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

Sample: 321279 - AH-2 (0-1')

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

Sample: 321280 - AH-3 (0-1')

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

Sample: 321281 - AH-4 (0-1')

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

Sample: 321282 - AH-5 (0-1')

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

Sample: 321283 - AH-6 (0-1')

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

Sample: 321284 - AH-7 (0-1')

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

Sample: 321285 - AH-8 (0-1')

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

Sample: 321286 - AH-9 (0-1')

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

TRACEANALYSIS, INC.

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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: February 25, 2013

Work Order: 13021531

Project Location: Eddy Co., NM
Project Name: COG/Folk Federal B
Project Number: 112C04996

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
321278	AH-1 (0-1')	soil	2013-02-12	00:00	2013-02-15
321279	AH-2 (0-1')	soil	2013-02-12	00:00	2013-02-15
321280	AH-3 (0-1')	soil	2013-02-12	00:00	2013-02-15
321281	AH-4 (0-1')	soil	2013-02-12	00:00	2013-02-15
321282	AH-5 (0-1')	soil	2013-02-12	00:00	2013-02-15
321283	AH-6 (0-1')	soil	2013-02-12	00:00	2013-02-15
321284	AH-7 (0-1')	soil	2013-02-12	00:00	2013-02-15
321285	AH-8 (0-1')	soil	2013-02-12	00:00	2013-02-15
321286	AH-9 (0-1')	soil	2013-02-12	00:00	2013-02-15

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/Folk Federal B were received by TraceAnalysis, Inc. on 2013-02-15 and assigned to work order 13021531. Samples for work order 13021531 were received intact at a temperature of 2.2 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	83915	2013-02-18 at 10:00	99045	2013-02-18 at 10:00
Chloride (Titration)	SM 4500-Cl B	84061	2013-02-21 at 12:58	99229	2013-02-25 at 15:59
TPH DRO - NEW	S 8015 D	83905	2013-02-18 at 08:00	99035	2013-02-19 at 08:53
TPH GRO	S 8015 D	83915	2013-02-18 at 10:00	99047	2013-02-18 at 10:00
TPH GRO	S 8015 D	83951	2013-02-19 at 16:11	99091	2013-02-19 at 16:11

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 13021531 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: 321278 - AH-1 (0-1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99045	Date Analyzed:	2013-02-18	Analyzed By:	YG
Prep Batch:	83915	Sample Preparation:	2013-02-18	Prepared By:	YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.100	mg/Kg	5	0.0200
Toluene		1	**0.451**	mg/Kg	5	0.0200
Ethylbenzene		1	**1.88**	mg/Kg	5	0.0200
Xylene		1	**4.16**	mg/Kg	5	0.0200

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		10.9	mg/Kg	5	10.0	109	79.5 - 108
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		11.4	mg/Kg	5	10.0	114	71.4 - 108

Sample: 321278 - AH-1 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99229	Date Analyzed:	2013-02-25	Analyzed By:	AR
Prep Batch:	84061	Sample Preparation:	2013-02-21	Prepared By:	AR

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

Sample: 321278 - AH-1 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99035	Date Analyzed:	2013-02-19	Analyzed By:	CW
Prep Batch:	83905	Sample Preparation:	2013-02-18	Prepared By:	CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**459**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		143	mg/Kg	1	100	143	70 - 130

Sample: 321278 - AH-1 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99047	Date Analyzed:	2013-02-18	Analyzed By:	YG
Prep Batch:	83915	Sample Preparation:	2013-02-18	Prepared By:	YG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	D,Qs	1	**165**	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			8.55	mg/Kg	5	10.0	86	70 - 130
4-Bromofluorobenzene (4-BFB)			12.3	mg/Kg	5	10.0	123	70 - 130

Sample: 321279 - AH-2 (0-1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99045	Date Analyzed:	2013-02-18	Analyzed By:	YG
Prep Batch:	83915	Sample Preparation:	2013-02-18	Prepared By:	YG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene [2]	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	4.35	mg/Kg	2	4.00	109	79.5 - 108
4-Bromofluorobenzene (4-BFB)			4.24	mg/Kg	2	4.00	106	71.4 - 108

Sample: 321279 - AH-2 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99229	Date Analyzed:	2013-02-25	Analyzed By:	AR
Prep Batch:	84061	Sample Preparation:	2013-02-21	Prepared By:	AR

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

Sample: 321279 - AH-2 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99035	Date Analyzed:	2013-02-19	Analyzed By:	CW
Prep Batch:	83905	Sample Preparation:	2013-02-18	Prepared By:	CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**513**	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	70 - 130

Sample: 321279 - AH-2 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99047	Date Analyzed:	2013-02-18	Analyzed By:	YG
Prep Batch:	83915	Sample Preparation:	2013-02-18	Prepared By:	YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	B,Qsr	1	**46.8**	mg/Kg	2	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr	5.23	mg/Kg	2	4.00	131	70 - 130
4-Bromofluorobenzene (4-BFB)			4.48	mg/Kg	2	4.00	112	70 - 130

Sample: 321280 - AH-3 (0-1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99045	Date Analyzed:	2013-02-18	Analyzed By:	YG
Prep Batch:	83915	Sample Preparation:	2013-02-18	Prepared By:	YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene [3]	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)			4.30	mg/Kg	2	4.00	108	79.5 - 108
4-Bromofluorobenzene (4-BFB)			4.15	mg/Kg	2	4.00	104	71.4 - 108

Sample: 321280 - AH-3 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99229	Date Analyzed:	2013-02-25	Analyzed By:	AR
Prep Batch:	84061	Sample Preparation:	2013-02-21	Prepared By:	AR

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

Sample: 321280 - AH-3 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99035	Date Analyzed:	2013-02-19	Analyzed By:	CW
Prep Batch:	83905	Sample Preparation:	2013-02-18	Prepared By:	CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**746**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		161	mg/Kg	1	100	161	70 - 130

Sample: 321280 - AH-3 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99047	Date Analyzed:	2013-02-18	Analyzed By:	YG
Prep Batch:	83915	Sample Preparation:	2013-02-18	Prepared By:	YG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			3.32	mg/Kg	2	4.00	83	70 - 130
4-Bromofluorobenzene (4-BFB)			4.22	mg/Kg	2	4.00	106	70 - 130

Sample: 321281 - AH-4 (0-1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99045	Date Analyzed:	2013-02-18	Analyzed By:	YG
Prep Batch:	83915	Sample Preparation:	2013-02-18	Prepared By:	YG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene [4]	U	1	<0.400	mg/Kg	20	0.0200
Toluene	U	1	<0.400	mg/Kg	20	0.0200
Ethylbenzene	U	1	<0.400	mg/Kg	20	0.0200
Xylene	U	1	<0.400	mg/Kg	20	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			43.0	mg/Kg	20	40.0	108	79.5 - 108
4-Bromofluorobenzene (4-BFB)			40.8	mg/Kg	20	40.0	102	71.4 - 108

Sample: 321281 - AH-4 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99229	Date Analyzed:	2013-02-25	Analyzed By:	AR
Prep Batch:	84061	Sample Preparation:	2013-02-21	Prepared By:	AR

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

Sample: 321281 - AH-4 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99035	Date Analyzed:	2013-02-19	Analyzed By:	CW
Prep Batch:	83905	Sample Preparation:	2013-02-18	Prepared By:	CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**1630**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	196	mg/Kg	1	100	196	70 - 130

Sample: 321281 - AH-4 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99047	Date Analyzed:	2013-02-18	Analyzed By:	YG
Prep Batch:	83915	Sample Preparation:	2013-02-18	Prepared By:	YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	B,Qs	1	**212**	mg/Kg	20	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			33.5	mg/Kg	20	40.0	84	70 - 130
4-Bromofluorobenzene (4-BFB)	Js	Js	40.6	mg/Kg	20	40.0	96	70 - 130

Sample: 321282 - AH-5 (0-1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99045	Date Analyzed:	2013-02-18	Analyzed By:	YG
Prep Batch:	83915	Sample Preparation:	2013-02-18	Prepared By:	YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene [5]	U	1	<1.00	mg/Kg	50	0.0200
Toluene		1	**21.7**	mg/Kg	50	0.0200
Ethylbenzene		1	**36.5**	mg/Kg	50	0.0200
Xylene		1	**65.0**	mg/Kg	50	0.0200

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		114	mg/Kg	50	100	114	79.5 - 108
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		115	mg/Kg	50	100	115	71.4 - 108

Sample: 321282 - AH-5 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99229	Date Analyzed:	2013-02-25	Analyzed By:	AR
Prep Batch:	84061	Sample Preparation:	2013-02-21	Prepared By:	AR

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

Sample: 321282 - AH-5 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99035	Date Analyzed:	2013-02-19	Analyzed By:	CW
Prep Batch:	83905	Sample Preparation:	2013-02-18	Prepared By:	CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**6500**	mg/Kg	5	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		444	mg/Kg	5	100	444	70 - 130

Sample: 321282 - AH-5 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99047	Date Analyzed:	2013-02-18	Analyzed By:	YG
Prep Batch:	83915	Sample Preparation:	2013-02-18	Prepared By:	YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	B,Qs	1	**1580**	mg/Kg	50	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			82.8	mg/Kg	50	100	83	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	131	mg/Kg	50	100	131	70 - 130

Sample: 321283 - AH-6 (0-1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99045	Date Analyzed:	2013-02-18	Analyzed By:	YG
Prep Batch:	83915	Sample Preparation:	2013-02-18	Prepared By:	YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene [6]	U	1	<1.00	mg/Kg	50	0.0200
Toluene	U	1	<1.00	mg/Kg	50	0.0200
Ethylbenzene	U	1	<1.00	mg/Kg	50	0.0200
Xylene		1	**2.78**	mg/Kg	50	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			107	mg/Kg	50	100	107	79.5 - 108
4-Bromofluorobenzene (4-BFB)			104	mg/Kg	50	100	104	71.4 - 108

Sample: 321283 - AH-6 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99229	Date Analyzed:	2013-02-25	Analyzed By:	AR
Prep Batch:	84061	Sample Preparation:	2013-02-21	Prepared By:	AR

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

Sample: 321283 - AH-6 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99035	Date Analyzed:	2013-02-19	Analyzed By:	CW
Prep Batch:	83905	Sample Preparation:	2013-02-18	Prepared By:	CW

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**7860**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	539	mg/Kg	5	100	539	70 - 130

Sample: 321283 - AH-6 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99047	Date Analyzed:	2013-02-18	Analyzed By:	YG
Prep Batch:	83915	Sample Preparation:	2013-02-18	Prepared By:	YG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	B,Qs	1	**493**	mg/Kg	50	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			83.4	mg/Kg	50	100	83	70 - 130
4-Bromofluorobenzene (4-BFB)			105	mg/Kg	50	100	105	70 - 130

Sample: 321284 - AH-7 (0-1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99045	Date Analyzed:	2013-02-18	Analyzed By:	YG
Prep Batch:	83915	Sample Preparation:	2013-02-18	Prepared By:	YG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**4.24**	mg/Kg	10	0.0200
Toluene		1	**50.1**	mg/Kg	10	0.0200
Ethylbenzene		1	**59.6**	mg/Kg	10	0.0200

continued ...

sample 321284 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Xylene		1	**110**	mg/Kg	10	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			20.8	mg/Kg	10	20.0	104	79.5 - 108
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	38.4	mg/Kg	10	20.0	192	71.4 - 108

Sample: 321284 - AH-7 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99229	Date Analyzed:	2013-02-25	Analyzed By:	AR
Prep Batch:	84061	Sample Preparation:	2013-02-21	Prepared By:	AR

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

Sample: 321284 - AH-7 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99035	Date Analyzed:	2013-02-19	Analyzed By:	CW
Prep Batch:	83905	Sample Preparation:	2013-02-18	Prepared By:	CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**9610**	mg/Kg	10	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	593	mg/Kg	10	100	593	70 - 130

Sample: 321284 - AH-7 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99091	Date Analyzed:	2013-02-19	Analyzed By:	YG
Prep Batch:	83951	Sample Preparation:	2013-02-19	Prepared By:	YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**3180**	mg/Kg	50	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			79.0	mg/Kg	50	100	79	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	154	mg/Kg	50	100	154	70 - 130

Sample: 321285 - AH-8 (0-1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99045	Date Analyzed:	2013-02-18	Analyzed By:	YG
Prep Batch:	83915	Sample Preparation:	2013-02-18	Prepared By:	YG

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)	Qsr	Qsr	2.19	mg/Kg	1	2.00	110	79.5 - 108
4-Bromofluorobenzene (4-BFB)			2.00	mg/Kg	1	2.00	100	71.4 - 108

Sample: 321285 - AH-8 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99229	Date Analyzed:	2013-02-25	Analyzed By:	AR
Prep Batch:	84061	Sample Preparation:	2013-02-21	Prepared By:	AR

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

Sample: 321285 - AH-8 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99035	Date Analyzed:	2013-02-19	Analyzed By:	CW
Prep Batch:	83905	Sample Preparation:	2013-02-18	Prepared By:	CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**219**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			127	mg/Kg	1	100	127	70 - 130

Sample: 321285 - AH-8 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99047	Date Analyzed:	2013-02-18	Analyzed By:	YG
Prep Batch:	83915	Sample Preparation:	2013-02-18	Prepared By:	YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	B,Q*	1	**6.50**	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.37	mg/Kg	1	2.00	118	70 - 130
4-Bromofluorobenzene (4-BFB)			2.00	mg/Kg	1	2.00	100	70 - 130

Sample: 321286 - AH-9 (0-1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99045	Date Analyzed:	2013-02-18	Analyzed By:	YG
Prep Batch:	83915	Sample Preparation:	2013-02-18	Prepared By:	YG

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

continued ...

sample 321286 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		2.19	mg/Kg	1	2.00	110	79.5 - 108
4-Bromofluorobenzene (4-BFB)				1.99	mg/Kg	1	2.00	100	71.4 - 108

Sample: 321286 - AH-9 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	99229	Date Analyzed:	2013-02-25	Analyzed By:	AR
Prep Batch:	84061	Sample Preparation:	2013-02-21	Prepared By:	AR

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

Sample: 321286 - AH-9 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99035	Date Analyzed:	2013-02-19	Analyzed By:	CW
Prep Batch:	83905	Sample Preparation:	2013-02-18	Prepared By:	CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	B	1	**59.1**	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	70 - 130

Sample: 321286 - AH-9 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99047	Date Analyzed:	2013-02-18	Analyzed By:	YG
Prep Batch:	83915	Sample Preparation:	2013-02-18	Prepared By:	YG

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

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		3.38	mg/Kg	1	2.00	169	70 - 130
4-Bromofluorobenzene (4-BFB)				1.97	mg/Kg	1	2.00	98	70 - 130

Method Blanks

Method Blank (1) QC Batch: 99035

QC Batch: 99035 | Date Analyzed: 2013-02-19 | Analyzed By: CW
Prep Batch: 83905 | QC Preparation: 2013-02-18 | Prepared By: CW

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	8.53	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			114	mg/Kg	1	100	114	70 - 130

Method Blank (1) QC Batch: 99045

QC Batch: 99045 | Date Analyzed: 2013-02-18 | Analyzed By: YG
Prep Batch: 83915 | QC Preparation: 2013-02-18 | Prepared By: YG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00810	mg/Kg	0.02
Toluene		1	<0.00750	mg/Kg	0.02
Ethylbenzene		1	<0.00730	mg/Kg	0.02
Xylene		1	<0.00700	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr	2.21	mg/Kg	1	2.00	110	79.5 - 108
4-Bromofluorobenzene (4-BFB)			2.08	mg/Kg	1	2.00	104	71.4 - 108

Method Blank (1) QC Batch: 99047

QC Batch: 99047 | Date Analyzed: 2013-02-18 | Analyzed By: YG
Prep Batch: 83915 | QC Preparation: 2013-02-18 | Prepared By: YG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.66	mg/Kg	1	2.00	83	70 - 130
4-Bromofluorobenzene (4-BFB)			2.05	mg/Kg	1	2.00	102	70 - 130

Method Blank (1) QC Batch: 99091

QC Batch:	99091	Date Analyzed:	2013-02-19	Analyzed By:	YG
Prep Batch:	83951	QC Preparation:	2013-02-19	Prepared By:	YG

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.65	mg/Kg	1	2.00	82	70 - 130
4-Bromofluorobenzene (4-BFB)			1.98	mg/Kg	1	2.00	99	70 - 130

Method Blank (1) QC Batch: 99229

QC Batch:	99229	Date Analyzed:	2013-02-25	Analyzed By:	AR
Prep Batch:	84061	QC Preparation:	2013-02-21	Prepared By:	AR

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

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 99035 | Date Analyzed: 2013-02-19 | Analyzed By: CW
Prep Batch: 83905 | QC Preparation: 2013-02-18 | Prepared By: CW

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	298	mg/Kg	1	250	8.53	116	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	268	mg/Kg	1	250	8.53	104	70 - 130	11	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	127	120	mg/Kg	1	100	127	120	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 99045 | Date Analyzed: 2013-02-18 | Analyzed By: YG
Prep Batch: 83915 | QC Preparation: 2013-02-18 | Prepared By: YG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.87	mg/Kg	1	2.00	<0.00810	94	72.4 - 120
Toluene		1	1.96	mg/Kg	1	2.00	<0.00750	98	77 - 120
Ethylbenzene		1	2.12	mg/Kg	1	2.00	<0.00730	106	71.8 - 120
Xylene		1	6.60	mg/Kg	1	6.00	<0.00700	110	78.3 - 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	1.87	mg/Kg	1	2.00	<0.00810	94	72.4 - 120	0	20
Toluene		1	1.95	mg/Kg	1	2.00	<0.00750	98	77 - 120	0	20
Ethylbenzene		1	2.11	mg/Kg	1	2.00	<0.00730	106	71.8 - 120	0	20
Xylene		1	6.60	mg/Kg	1	6.00	<0.00700	110	78.3 - 120	0	20

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

Surrogate			LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	Qsr	Qsr	2.20	2.22	mg/Kg	1	2.00	110	111	79.5 - 108
4-Bromofluorobenzene (4-BFB)			2.10	2.07	mg/Kg	1	2.00	105	104	71.4 - 108

Laboratory Control Spike (LCS-1)

QC Batch: 99047 | Date Analyzed: 2013-02-18 | Analyzed By: YG
Prep Batch: 83915 | QC Preparation: 2013-02-18 | Prepared By: YG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	23.8	mg/Kg	1	20.0	9.01	119	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	24.4	mg/Kg	1	20.0	9.01	122	70 - 130	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.02	2.01	mg/Kg	1	2.00	101	100	70 - 130
4-Bromofluorobenzene (4-BFB)	2.08	2.11	mg/Kg	1	2.00	104	106	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 99091 | Date Analyzed: 2013-02-19 | Analyzed By: YG
Prep Batch: 83951 | QC Preparation: 2013-02-19 | Prepared By: YG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	16.6	mg/Kg	1	20.0	<2.32	83	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	16.9	mg/Kg	1	20.0	<2.32	84	70 - 130	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.63	1.55	mg/Kg	1	2.00	82	78	70 - 130
4-Bromofluorobenzene (4-BFB)	2.12	2.09	mg/Kg	1	2.00	106	104	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 99229 | Date Analyzed: 2013-02-25 | Analyzed By: AR
Prep Batch: 84061 | QC Preparation: 2013-02-21 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2750	mg/Kg	1	2500	<3.85	110	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2630	mg/Kg	1	2500	<3.85	105	85 - 115	4	20

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

Matrix Spike (MS-1) Spiked Sample: 321278

QC Batch: 99035 | Date Analyzed: 2013-02-19 | Analyzed By: CW
Prep Batch: 83905 | QC Preparation: 2013-02-18 | Prepared By: CW

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	653	mg/Kg	1	250	459	78	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	768	mg/Kg	1	250	459	124	70 - 130	16	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	102	134	mg/Kg	1	100	102	134	70 - 130

Matrix Spike (MS-1) Spiked Sample: 321062

QC Batch: 99045 | Date Analyzed: 2013-02-18 | Analyzed By: YG
Prep Batch: 83915 | QC Preparation: 2013-02-18 | Prepared By: YG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.29	mg/Kg	1	2.00	<0.00810	114	66.3 - 138
Toluene		1	2.41	mg/Kg	1	2.00	<0.00750	120	64.8 - 142
Ethylbenzene		1	2.63	mg/Kg	1	2.00	<0.00730	132	72 - 132
Xylene		1	8.17	mg/Kg	1	6.00	<0.00700	136	60.8 - 148

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	2.24	mg/Kg	1	2.00	<0.00810	112	66.3 - 138	2	20
Toluene		1	2.35	mg/Kg	1	2.00	<0.00750	118	64.8 - 142	2	20
Ethylbenzene		1	2.54	mg/Kg	1	2.00	<0.00730	127	72 - 132	4	20
Xylene		1	7.88	mg/Kg	1	6.00	<0.00700	131	60.8 - 148	4	20

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

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	Qsr	Qsr	2.19	2.20	mg/Kg	1	2	110	110	79.5 - 108
4-Bromofluorobenzene (4-BFB)			2.09	2.06	mg/Kg	1	2	104	103	71.4 - 108

Matrix Spike (MS-1) Spiked Sample: 321062

QC Batch: 99047 | Date Analyzed: 2013-02-18 | Analyzed By: YG
Prep Batch: 83915 | QC Preparation: 2013-02-18 | Prepared By: YG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	22.3	mg/Kg	1	20.0	<2.32	112	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	Qs Qs	1	27.0	mg/Kg	1	20.0	<2.32	135	70 - 130	19	20

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

continued ...

matrix spikes continued ...

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.61	1.64	mg/Kg	1	2	80	82	70 - 130
4-Bromofluorobenzene (4-BFB)	2.14	2.14	mg/Kg	1	2	107	107	70 - 130

Matrix Spike (MS-1) Spiked Sample: 321327

QC Batch: 99091 | Date Analyzed: 2013-02-19 | Analyzed By: YG
Prep Batch: 83951 | QC Preparation: 2013-02-19 | Prepared By: YG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	22.7	mg/Kg	1	20.0	<2.32	114	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	22.8	mg/Kg	1	20.0	<2.32	114	70 - 130	0	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)	1.55	1.58	mg/Kg	1	2	78	79	70 - 130
4-Bromofluorobenzene (4-BFB)	2.15	2.17	mg/Kg	1	2	108	108	70 - 130

Matrix Spike (MS-1) Spiked Sample: 321287

QC Batch: 99229 | Date Analyzed: 2013-02-25 | Analyzed By: AR
Prep Batch: 84061 | QC Preparation: 2013-02-21 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			4910	mg/Kg	10	2500	2290	105	78.9 - 121

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

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			4630	mg/Kg	10	2500	2290	94	78.9 - 121	6	20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 99035 | Date Analyzed: 2013-02-19 | Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	260	104	80 - 120	2013-02-19

Standard (CCV-2)

QC Batch: 99035 | Date Analyzed: 2013-02-19 | Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	259	104	80 - 120	2013-02-19

Standard (CCV-3)

QC Batch: 99035 | Date Analyzed: 2013-02-19 | Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	288	115	80 - 120	2013-02-19

Standard (CCV-4)

QC Batch: 99035 | Date Analyzed: 2013-02-19 | Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	285	114	80 - 120	2013-02-19

Standard (CCV-1)

QC Batch: 99045 | Date Analyzed: 2013-02-18 | Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0934	93	80 - 120	2013-02-18
Toluene		1	mg/kg	0.100	0.0948	95	80 - 120	2013-02-18
Ethylbenzene		1	mg/kg	0.100	0.0988	99	80 - 120	2013-02-18
Xylene		1	mg/kg	0.300	0.306	102	80 - 120	2013-02-18

Standard (CCV-2)

QC Batch: 99045 | Date Analyzed: 2013-02-18 | Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.102	102	80 - 120	2013-02-18
Toluene		1	mg/kg	0.100	0.104	104	80 - 120	2013-02-18
Ethylbenzene		1	mg/kg	0.100	0.108	108	80 - 120	2013-02-18
Xylene		1	mg/kg	0.300	0.334	111	80 - 120	2013-02-18

Standard (CCV-3)

QC Batch: 99045 | Date Analyzed: 2013-02-18 | Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.101	101	80 - 120	2013-02-18
Toluene		1	mg/kg	0.100	0.102	102	80 - 120	2013-02-18
Ethylbenzene		1	mg/kg	0.100	0.106	106	80 - 120	2013-02-18
Xylene		1	mg/kg	0.300	0.330	110	80 - 120	2013-02-18

Standard (CCV-1)

QC Batch: 99047 | Date Analyzed: 2013-02-18 | Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.879	88	80 - 120	2013-02-18

Standard (CCV-2)

QC Batch: 99047 Date Analyzed: 2013-02-18 Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.932	93	80 - 120	2013-02-18

Standard (CCV-3)

QC Batch: 99047 Date Analyzed: 2013-02-18 Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.01	101	80 - 120	2013-02-18

Standard (CCV-1)

QC Batch: 99091 Date Analyzed: 2013-02-19 Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.931	93	80 - 120	2013-02-19

Standard (CCV-2)

QC Batch: 99091 Date Analyzed: 2013-02-19 Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO			mg/Kg	1.00	0.945	94	80 - 120	2013-02-19

Standard (CCV-1)

QC Batch: 99229 Date Analyzed: 2013-02-25 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	98.7	99	85 - 115	2013-02-25

Standard (CCV-2)

QC Batch: 99229 Date Analyzed: 2013-02-25 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	2013-02-25

Appendix

Report Definitions

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

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-12-4	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 Dilution due to hydrocarbons.
2 Dilution due to hydrocarbons.
3 Dilution due to surfactant.
4 Dilution due to sufactant.
5 Dilution due to hydrocarbons.
6 Dilution due to sufactant.

Attachments

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

13021531

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

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 112C04956

PROJECT NAME: COG / Folk Federal B

Eddy Co, NM

ANALYSIS REQUEST (Circle or Specify Method No.)

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. 8081/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
321278	2/12/13		S		X	AH1 (0-1')	1				X		X	X											X				
279			S		X	AH2 (0-1')	1				X		X	X											X				
280			S		X	AH3 (0-1')	1				X		X	X											X				
281			S		X	AH4 (0-1')	1				X		X	X											X				
282			S		X	AH5 (0-1')	1				X		X	X											X				
283			S		X	AH6 (0-1')	1				X		X	X											X				
284			S		X	AH7 (0-1')	1				X		X	X											X				
285			S		X	AH8 (0-1')	1				X		X	X											X				
286			S		X	AH9 (0-1')	1				X		X	X											X				

RELINQUISHED BY: (Signature) Date: 2/13/13 Time: 1120 RECEIVED BY: (Signature) Date: 2/13/13 Time: 11:20

SAMPLED BY: (Print & Initial) RR/ST 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: Ike Tavarez Results by:

RECEIVING LABORATORY: Trace RECEIVED BY: (Signature)

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

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 2.2

REMARKS: Midland lab

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: May 20, 2013

Work Order: 13051704

Project Location: Eddy Co., NM
Project Name: COG/Folk Federal B
Project Number: 112C04996

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
329451	CS-1 (AH-4) 1'	soil	2013-05-16	00:00	2013-05-17
329452	CS-1 (AH-4) 2'	soil	2013-05-16	00:00	2013-05-17
329453	CS-1 (AH-4) 3'	soil	2013-05-16	00:00	2013-05-17
329454	CS-2 (AH-5) 1'	soil	2013-05-16	00:00	2013-05-17
329455	CS-2 (AH-5) 2'	soil	2013-05-16	00:00	2013-05-17
329456	CS-2 (AH-5) 3'	soil	2013-05-16	00:00	2013-05-17
329457	CS-3 (AH-6) 1'	soil	2013-05-16	00:00	2013-05-17
329458	CS-3 (AH-6) 2'	soil	2013-05-16	00:00	2013-05-17
329459	CS-3 (AH-6) 3'	soil	2013-05-16	00:00	2013-05-17
329460	CS-4 (AH-7) 1'	soil	2013-05-16	00:00	2013-05-17
329461	CS-4 (AH-7) 2'	soil	2013-05-16	00:00	2013-05-17
329462	CS-4 (AH-7) 3'	soil	2013-05-16	00:00	2013-05-17

Sample - Field Code	BTEX Benzene (mg/Kg)	BTEX Toluene (mg/Kg)	BTEX Ethylbenzene (mg/Kg)	BTEX Xylene (mg/Kg)	TPH DRO - NEW DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
329451 - CS-1 (AH-4) 1'					<50.0	<4.00 Qs
329452 - CS-1 (AH-4) 2'					<50.0	**11.1** Qs
329453 - CS-1 (AH-4) 3'					<50.0	<4.00 Qs
329454 - CS-2 (AH-5) 1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00 Qs
329455 - CS-2 (AH-5) 2'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00 Qs
329456 - CS-2 (AH-5) 3'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00 Qs
329457 - CS-3 (AH-6) 1'					<50.0	<4.00 Qs
329458 - CS-3 (AH-6) 2'					<50.0	<4.00 Qs
329459 - CS-3 (AH-6) 3'					<50.0	<4.00 Qs
329460 - CS-4 (AH-7) 1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00 Qs
329461 - CS-4 (AH-7) 2'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00 Qs
329462 - CS-4 (AH-7) 3'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00 Qs

TRACEANALYSIS, INC.

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

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: May 20, 2013

Work Order: 13051704

Project Location: Eddy Co., NM
Project Name: COG/Folk Federal B
Project Number: 112C04996

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
329451	CS-1 (AH-4) 1'	soil	2013-05-16	00:00	2013-05-17
329452	CS-1 (AH-4) 2'	soil	2013-05-16	00:00	2013-05-17
329453	CS-1 (AH-4) 3'	soil	2013-05-16	00:00	2013-05-17
329454	CS-2 (AH-5) 1'	soil	2013-05-16	00:00	2013-05-17
329455	CS-2 (AH-5) 2'	soil	2013-05-16	00:00	2013-05-17
329456	CS-2 (AH-5) 3'	soil	2013-05-16	00:00	2013-05-17
329457	CS-3 (AH-6) 1'	soil	2013-05-16	00:00	2013-05-17
329458	CS-3 (AH-6) 2'	soil	2013-05-16	00:00	2013-05-17
329459	CS-3 (AH-6) 3'	soil	2013-05-16	00:00	2013-05-17
329460	CS-4 (AH-7) 1'	soil	2013-05-16	00:00	2013-05-17
329461	CS-4 (AH-7) 2'	soil	2013-05-16	00:00	2013-05-17
329462	CS-4 (AH-7) 3'	soil	2013-05-16	00:00	2013-05-17

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/Folk Federal B were received by TraceAnalysis, Inc. on 2013-05-17 and assigned to work order 13051704. Samples for work order 13051704 were received intact at a temperature of 3.7 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	86022	2013-05-17 at 11:50	101510	2013-05-18 at 15:02
TPH DRO - NEW	S 8015 D	86027	2013-05-19 at 19:00	101516	2013-05-20 at 08:13
TPH GRO	S 8015 D	86023	2013-05-18 at 14:45	101511	2013-05-19 at 11:36

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 13051704 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: 329451 - CS-1 (AH-4) 1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	101516	Date Analyzed:	2013-05-20	Analyzed By:	CW
Prep Batch:	86027	Sample Preparation:	2013-05-19	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			120	mg/Kg	1	100	120	55.1 - 135.7

Sample: 329451 - CS-1 (AH-4) 1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	101511	Date Analyzed:	2013-05-19	Analyzed By:	AH
Prep Batch:	86023	Sample Preparation:	2013-05-18	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.72	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.88	mg/Kg	1	2.00	94	70 - 130

Sample: 329452 - CS-1 (AH-4) 2'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	101516	Date Analyzed:	2013-05-20	Analyzed By:	CW
Prep Batch:	86027	Sample Preparation:	2013-05-19	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			114	mg/Kg	1	100	114	55.1 - 135.7

Sample: 329452 - CS-1 (AH-4) 2'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	101511	Date Analyzed:	2013-05-19	Analyzed By:	AH
Prep Batch:	86023	Sample Preparation:	2013-05-18	Prepared By:	AH

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs	1	**11.1**	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.65	mg/Kg	1	2.00	82	70 - 130
4-Bromofluorobenzene (4-BFB)			1.75	mg/Kg	1	2.00	88	70 - 130

Sample: 329453 - CS-1 (AH-4) 3'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	101516	Date Analyzed:	2013-05-20	Analyzed By:	CW
Prep Batch:	86027	Sample Preparation:	2013-05-19	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			93.3	mg/Kg	1	100	93	55.1 - 135.7

Sample: 329453 - CS-1 (AH-4) 3'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	101511	Date Analyzed:	2013-05-19	Analyzed By:	AH
Prep Batch:	86023	Sample Preparation:	2013-05-18	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.69	mg/Kg	1	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)			1.79	mg/Kg	1	2.00	90	70 - 130

Sample: 329454 - CS-2 (AH-5) 1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	101510	Date Analyzed:	2013-05-18	Analyzed By:	AH
Prep Batch:	86022	Sample Preparation:	2013-05-17	Prepared By:	AH

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)			1.98	mg/Kg	1	2.00	99	70 - 130
4-Bromofluorobenzene (4-BFB)			2.03	mg/Kg	1	2.00	102	70 - 130

Sample: 329454 - CS-2 (AH-5) 1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	101516	Date Analyzed:	2013-05-20	Analyzed By:	CW
Prep Batch:	86027	Sample Preparation:	2013-05-19	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			121	mg/Kg	1	100	121	55.1 - 135.7

Sample: 329454 - CS-2 (AH-5) 1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	101511	Date Analyzed:	2013-05-19	Analyzed By:	AH
Prep Batch:	86023	Sample Preparation:	2013-05-18	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.64	mg/Kg	1	2.00	82	70 - 130
4-Bromofluorobenzene (4-BFB)			1.72	mg/Kg	1	2.00	86	70 - 130

Sample: 329455 - CS-2 (AH-5) 2'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	101510	Date Analyzed:	2013-05-18	Analyzed By:	AH
Prep Batch:	86022	Sample Preparation:	2013-05-17	Prepared By:	AH

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)			1.86	mg/Kg	1	2.00	93	70 - 130
4-Bromofluorobenzene (4-BFB)			1.92	mg/Kg	1	2.00	96	70 - 130

Sample: 329455 - CS-2 (AH-5) 2'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	101516	Date Analyzed:	2013-05-20	Analyzed By:	CW
Prep Batch:	86027	Sample Preparation:	2013-05-19	Prepared By:	CW

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

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		142	mg/Kg	1	100	142	55.1 - 135.7

Sample: 329455 - CS-2 (AH-5) 2'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	101511	Date Analyzed:	2013-05-19	Analyzed By:	AH
Prep Batch:	86023	Sample Preparation:	2013-05-18	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.67	mg/Kg	1	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)			1.75	mg/Kg	1	2.00	88	70 - 130

Sample: 329456 - CS-2 (AH-5) 3'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	101510	Date Analyzed:	2013-05-18	Analyzed By:	AH
Prep Batch:	86022	Sample Preparation:	2013-05-17	Prepared By:	AH

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

continued ...

sample 329456 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)			2.03	mg/Kg	1	2.00	102	70 - 130
4-Bromofluorobenzene (4-BFB)			2.08	mg/Kg	1	2.00	104	70 - 130

Sample: 329456 - CS-2 (AH-5) 3'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	101516	Date Analyzed:	2013-05-20	Analyzed By:	CW
Prep Batch:	86027	Sample Preparation:	2013-05-19	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			119	mg/Kg	1	100	119	55.1 - 135.7

Sample: 329456 - CS-2 (AH-5) 3'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	101511	Date Analyzed:	2013-05-19	Analyzed By:	AH
Prep Batch:	86023	Sample Preparation:	2013-05-18	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.60	mg/Kg	1	2.00	80	70 - 130
4-Bromofluorobenzene (4-BFB)			1.67	mg/Kg	1	2.00	84	70 - 130

Sample: 329457 - CS-3 (AH-6) 1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	101516	Date Analyzed:	2013-05-20	Analyzed By:	CW
Prep Batch:	86027	Sample Preparation:	2013-05-19	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			133	mg/Kg	1	100	133	55.1 - 135.7

Sample: 329457 - CS-3 (AH-6) 1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	101511	Date Analyzed:	2013-05-19	Analyzed By:	AH
Prep Batch:	86023	Sample Preparation:	2013-05-18	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.66	mg/Kg	1	2.00	83	70 - 130
4-Bromofluorobenzene (4-BFB)			1.74	mg/Kg	1	2.00	87	70 - 130

Sample: 329458 - CS-3 (AH-6) 2'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	101516	Date Analyzed:	2013-05-20	Analyzed By:	CW
Prep Batch:	86027	Sample Preparation:	2013-05-19	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	385	mg/Kg	1	100	385	55.1 - 135.7

Sample: 329458 - CS-3 (AH-6) 2'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	101511	Date Analyzed:	2013-05-19	Analyzed By:	AH
Prep Batch:	86023	Sample Preparation:	2013-05-18	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.71	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.79	mg/Kg	1	2.00	90	70 - 130

Sample: 329459 - CS-3 (AH-6) 3'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	101516	Date Analyzed:	2013-05-20	Analyzed By:	CW
Prep Batch:	86027	Sample Preparation:	2013-05-19	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			99.4	mg/Kg	1	100	99	55.1 - 135.7

Sample: 329459 - CS-3 (AH-6) 3'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	101511	Date Analyzed:	2013-05-19	Analyzed By:	AH
Prep Batch:	86023	Sample Preparation:	2013-05-18	Prepared By:	AH

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

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

Sample: 329460 - CS-4 (AH-7) 1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	101510	Date Analyzed:	2013-05-18	Analyzed By:	AH
Prep Batch:	86022	Sample Preparation:	2013-05-17	Prepared By:	AH

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)			1.91	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			1.98	mg/Kg	1	2.00	99	70 - 130

Sample: 329460 - CS-4 (AH-7) 1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	101516	Date Analyzed:	2013-05-20	Analyzed By:	CW
Prep Batch:	86027	Sample Preparation:	2013-05-19	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			99.7	mg/Kg	1	100	100	55.1 - 135.7

Sample: 329460 - CS-4 (AH-7) 1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	101511	Date Analyzed:	2013-05-19	Analyzed By:	AH
Prep Batch:	86023	Sample Preparation:	2013-05-18	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.70	mg/Kg	1	2.00	85	70 - 130
4-Bromofluorobenzene (4-BFB)			1.77	mg/Kg	1	2.00	88	70 - 130

Sample: 329461 - CS-4 (AH-7) 2'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	101510	Date Analyzed:	2013-05-18	Analyzed By:	AH
Prep Batch:	86022	Sample Preparation:	2013-05-17	Prepared By:	AH

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)			1.91	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			2.02	mg/Kg	1	2.00	101	70 - 130

Sample: 329461 - CS-4 (AH-7) 2'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	101516	Date Analyzed:	2013-05-20	Analyzed By:	CW
Prep Batch:	86027	Sample Preparation:	2013-05-19	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			128	mg/Kg	1	100	128	55.1 - 135.7

Sample: 329461 - CS-4 (AH-7) 2'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	101511	Date Analyzed:	2013-05-19	Analyzed By:	AH
Prep Batch:	86023	Sample Preparation:	2013-05-18	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.64	mg/Kg	1	2.00	82	70 - 130
4-Bromofluorobenzene (4-BFB)			1.75	mg/Kg	1	2.00	88	70 - 130

Sample: 329462 - CS-4 (AH-7) 3'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	101510	Date Analyzed:	2013-05-18	Analyzed By:	AH
Prep Batch:	86022	Sample Preparation:	2013-05-17	Prepared By:	AH

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)			1.94	mg/Kg	1	2.00	97	70 - 130
4-Bromofluorobenzene (4-BFB)			2.00	mg/Kg	1	2.00	100	70 - 130

Sample: 329462 - CS-4 (AH-7) 3'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	101516	Date Analyzed:	2013-05-20	Analyzed By:	CW
Prep Batch:	86027	Sample Preparation:	2013-05-19	Prepared By:	CW

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

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		228	mg/Kg	1	100	228	55.1 - 135.7

Sample: 329462 - CS-4 (AH-7) 3'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	101511	Date Analyzed:	2013-05-19	Analyzed By:	AH
Prep Batch:	86023	Sample Preparation:	2013-05-18	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.64	mg/Kg	1	2.00	82	70 - 130
4-Bromofluorobenzene (4-BFB)			1.71	mg/Kg	1	2.00	86	70 - 130

Method Blanks

Method Blank (1) QC Batch: 101510

QC Batch:	101510	Date Analyzed:	2013-05-18	Analyzed By:	AH
Prep Batch:	86022	QC Preparation:	2013-05-17	Prepared By:	AH

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00810	mg/Kg	0.02
Toluene		1	<0.00750	mg/Kg	0.02
Ethylbenzene		1	<0.00730	mg/Kg	0.02
Xylene		1	<0.00700	mg/Kg	0.02

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

Method Blank (1) QC Batch: 101511

QC Batch:	101511	Date Analyzed:	2013-05-19	Analyzed By:	AH
Prep Batch:	86023	QC Preparation:	2013-05-18	Prepared By:	AH

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.72	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.69	mg/Kg	1	2.00	84	70 - 130

Method Blank (1) QC Batch: 101516

QC Batch:	101516	Date Analyzed:	2013-05-20	Analyzed By:	CW
Prep Batch:	86027	QC Preparation:	2013-05-19	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			135	mg/Kg	1	100	135	55.1 - 135.7

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 101510 | Date Analyzed: 2013-05-18 | Analyzed By: AH
Prep Batch: 86022 | QC Preparation: 2013-05-17 | Prepared By: AH

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.03	mg/Kg	1	2.00	<0.00810	102	70 - 130
Toluene		1	2.10	mg/Kg	1	2.00	<0.00750	105	70 - 130
Ethylbenzene		1	2.09	mg/Kg	1	2.00	<0.00730	104	70 - 130
Xylene		1	6.13	mg/Kg	1	6.00	<0.00700	102	70 - 130

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.02	mg/Kg	1	2.00	<0.00810	101	70 - 130	0	20
Toluene		1	2.10	mg/Kg	1	2.00	<0.00750	105	70 - 130	0	20
Ethylbenzene		1	2.10	mg/Kg	1	2.00	<0.00730	105	70 - 130	0	20
Xylene		1	6.15	mg/Kg	1	6.00	<0.00700	102	70 - 130	0	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.97	1.98	mg/Kg	1	2.00	98	99	70 - 130
4-Bromofluorobenzene (4-BFB)	2.01	2.02	mg/Kg	1	2.00	100	101	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 101511 | Date Analyzed: 2013-05-19 | Analyzed By: AH
Prep Batch: 86023 | QC Preparation: 2013-05-18 | Prepared By: AH

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	18.1	mg/Kg	1	20.0	<2.32	90	70 - 130

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

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	20.1	mg/Kg	1	20.0	<2.32	100	70 - 130	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)	1.75	1.78	mg/Kg	1	2.00	88	89	70 - 130
4-Bromofluorobenzene (4-BFB)	1.78	1.81	mg/Kg	1	2.00	89	90	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 101516 | Date Analyzed: 2013-05-20 | Analyzed By: CW
Prep Batch: 86027 | QC Preparation: 2013-05-19 | Prepared By: CW

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	259	mg/Kg	1	250	<10.2	104	66.9 - 119.9

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
DRO		1	237	mg/Kg	1	250	<10.2	95	66.9 - 119.9	9	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	Qsr	Qsr	154	139	mg/Kg	1	100	154	139	76.8 - 140.2

Matrix Spike (xMS-1) Spiked Sample: 329451

QC Batch: 101510 | Date Analyzed: 2013-05-18 | Analyzed By: AH
Prep Batch: 86022 | QC Preparation: 2013-05-17 | Prepared By: AH

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.03	mg/Kg	1	2.00	<0.00810	102	70 - 130

continued ...

matrix spikes continued ...

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Toluene		1	2.15	mg/Kg	1	2.00	<0.00750	108	70 - 130
Ethylbenzene		1	2.24	mg/Kg	1	2.00	<0.00730	112	70 - 130
Xylene		1	6.57	mg/Kg	1	6.00	<0.00700	110	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.94	mg/Kg	1	2.00	<0.00810	97	70 - 130	4	20
Toluene		1	2.10	mg/Kg	1	2.00	<0.00750	105	70 - 130	2	20
Ethylbenzene		1	2.18	mg/Kg	1	2.00	<0.00730	109	70 - 130	3	20
Xylene		1	6.41	mg/Kg	1	6.00	<0.00700	107	70 - 130	2	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.88	1.94	mg/Kg	1	2	94	97	70 - 130
4-Bromofluorobenzene (4-BFB)	1.98	2.00	mg/Kg	1	2	99	100	70 - 130

Matrix Spike (MS-1) Spiked Sample: 329451

QC Batch: 101511 | Date Analyzed: 2013-05-19 | Analyzed By: AH
Prep Batch: 86023 | QC Preparation: 2013-05-18 | Prepared By: AH

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	Qm	Qm	1	12.3	mg/Kg	1	20.0	2.44	49	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	Qm	Qm	1	14.0	mg/Kg	1	20.0	2.44	58	70 - 130	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)	1.69	1.68	mg/Kg	1	2	84	84	70 - 130
4-Bromofluorobenzene (4-BFB)	1.93	1.86	mg/Kg	1	2	96	93	70 - 130

Matrix Spike (MS-1) Spiked Sample: 329451

QC Batch: 101516 | Date Analyzed: 2013-05-20 | Analyzed By: CW
Prep Batch: 86027 | QC Preparation: 2013-05-19 | Prepared By: CW

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	298	mg/Kg	1	250	<10.2	119	36.1 - 147.2

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	309	mg/Kg	1	250	<10.2	124	36.1 - 147.2	4	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	Qsr	Qsr	159	164	mg/Kg	1	100	159	164	78.3 - 131.6

Calibration Standards

Standard (CCV-1)

QC Batch: 101510 | Date Analyzed: 2013-05-18 | Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.101	101	80 - 120	2013-05-18
Toluene		1	mg/kg	0.100	0.104	104	80 - 120	2013-05-18
Ethylbenzene		1	mg/kg	0.100	0.103	103	80 - 120	2013-05-18
Xylene		1	mg/kg	0.300	0.303	101	80 - 120	2013-05-18

Standard (CCV-2)

QC Batch: 101510 | Date Analyzed: 2013-05-18 | Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0974	97	80 - 120	2013-05-18
Toluene		1	mg/kg	0.100	0.100	100	80 - 120	2013-05-18
Ethylbenzene		1	mg/kg	0.100	0.0994	99	80 - 120	2013-05-18
Xylene		1	mg/kg	0.300	0.292	97	80 - 120	2013-05-18

Standard (CCV-3)

QC Batch: 101510 | Date Analyzed: 2013-05-18 | Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0987	99	80 - 120	2013-05-18
Toluene		1	mg/kg	0.100	0.102	102	80 - 120	2013-05-18
Ethylbenzene		1	mg/kg	0.100	0.101	101	80 - 120	2013-05-18
Xylene		1	mg/kg	0.300	0.294	98	80 - 120	2013-05-18

Standard (CCV-1)

QC Batch: 101511 Date Analyzed: 2013-05-19 Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.905	90	80 - 120	2013-05-19

Standard (CCV-2)

QC Batch: 101511 Date Analyzed: 2013-05-19 Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.887	89	80 - 120	2013-05-19

Standard (CCV-3)

QC Batch: 101511 Date Analyzed: 2013-05-19 Analyzed By: AH

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.916	92	80 - 120	2013-05-19

Standard (CCV-1)

QC Batch: 101516 Date Analyzed: 2013-05-20 Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	236	94	80 - 120	2013-05-20

Standard (CCV-2)

QC Batch: 101516 Date Analyzed: 2013-05-20 Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	265	106	80 - 120	2013-05-20

Standard (CCV-3)

QC Batch: 101516 Date Analyzed: 2013-05-20 Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	243	97	80 - 120	2013-05-20

Appendix

Report Definitions

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

Laboratory Certifications

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

Attachments

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

1305170d

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 2

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:	SITE MANAGER:
COG	IKE TAVAREZ

PROJECT NO.:	PROJECT NAME:
112C04996	COG - FOLK FED B TB Eddy Co, 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. 8080/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
329451	5/16		S		X	CS-1 (AH-4) 1'	1				X			X																
452						CS-1 (AH-4) 2'	1				X			X																	
453						CS-1 (AH-4) 3'	1				X			X																	
454						CS-2 (AH-5) 1'	1				X		X	X																	
455						CS-2 (AH-5) 2'	1				X		X	X																	
456						CS-2 (AH-5) 3'	1				X		X	X																	
457						CS-3 (AH-6) 1'	1				X			X																	
458						CS-3 (AH-6) 2'	1				X			X																	
459						CS-3 (AH-6) 3'	1				X			X																	
460						CS-4 (AH-7) 1'	1				X		X	X																	

RELINQUISHED BY: (Signature)	Date: 5-17-13 Time: 0855	RECEIVED BY: (Signature)	Date: 5/17/13 Time: 8:55
SAMPLED BY: (Print & Initial) MARCUS KUJAWSKI / MK	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: IKE TAVAREZ	Results by: RUSH Charges Authorized: Yes No		
RECEIVING LABORATORY: TRACE ADDRESS: CITY: MIDLAND STATE: TX ZIP: CONTACT: PHONE:	RECEIVED BY: (Signature) DATE: TIME:		
SAMPLE CONDITION WHEN RECEIVED: 3.7°	REMARKS: Rush / Need results by 10:00 AM Monday (verbals) (5-20-13) Mail all		

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

13051704

Analysis Request of Chain of Custody Record

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

PAGE: 2 OF: 2

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 112C04996

PROJECT NAME: COG - Folk Fed B TB
Eddy Co, 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
468	5/16		S		X	CS-4 (AH-7) 2'	1				X		X	X															
469	5/16		S		X	CS-4 (AH-7) 3'	1				X		X	X															

RELINQUISHED BY: (Signature) — Date: 5-16-13 Time: 0515
RECEIVED BY: (Signature) — Date: 5/17/13 Time: 8:15
SAMPLED BY: (Print & Initial) Marcus Kujawski MK — 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: Ike Tavarez
Results by:

RECEIVING LABORATORY: TRACE
ADDRESS:
CITY: MIDLAND STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.7°
REMARKS: Rush Need results by 10:00 am Monday (Verbals) (5/20/13)

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