SITE INFORMATION

Report Type: Closure Report

General Site Information:						
Site:	**Folk Federal Flow Lines**					
Company:	**COG Operating LLC**					
Section, Township and Range	**Unit H**	**Sec 17**	**17S**	**29E**		
Lease Number:	**API-30-015-36862**					
County:	**Eddy County**					
GPS:	**32.83555° N**			**104.09180° W**		
Surface Owner:	**Federal**					
Mineral Owner:						
Directions:	From the intersection of Hwy 82 and Old Loco Rd. travel north on Old Loco Rd. for 1.4 miles, turn right (east) and travel 0.3 miles to the site (on north side of the road).					

Release Data:		
Date Released:	7/5/2012	RECEIVED
Type Release:	Produced Fluid	NOV 01 2012
Source of Contamination:	Burned Flowlines	
Fluid Released:	5 bbls oil 5bbls water	NMOCD ARTESIA
Fluids Recovered:	0 bbls The majority was consumed in a fire.	

Official Communication:			
Name:	Pat Ellis		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	550 W. Texas Ave. Ste. 1300		1910 N. Big Spring
P.O. Box			
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	
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

October 19, 2012

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

Re: Closure Report for the COG Operating LLC., Folk Federal Flow Lines, 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 Flow lines located in Unit H, Section 17, Township 17 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.83555°, W 104.09180°. 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 July 5, 2012, and released approximately ten (10) barrels of produced fluids from several flow lines that were burned due to a lighting strike. To alleviate the problem, COG personnel replaced the flow lines. Due to the fire, none of the standing fluids were recovered. The spill initiated in the pasture along the east and west side of the lease road affecting an area approximately 65' X 145' in the pasture. The initial 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 approximately 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 July 12, 2012, Tetra Tech personnel inspected and sampled the spill area. Three (3) auger holes (AH-1, AH-2 and AH-3) 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, none of the samples exceeded the RRAL for TPH and BTEX. The area of AH-3 was not defined and detected an elevated chloride concentration of 14,400 mg/kg at 1.0'. Deeper samples were not collected due to the dense caliche formation. The areas of AH-1 and AH-2 did not show a significant chloride impact to the area.

Remediation and Conclusion

Based on the approved work plan, Tetra Tech personnel supervised the excavation of the site. The excavated areas and depths are highlighted in Table 1 and shown on Figure 4. Approximately 320 cubic yards of soil were excavated and transported to the R360 facility for proper disposal.

On September 21, 2012, Tetra Tech installed two backhoe trenches (T-1 and T-2) in the areas of AH-3 to depths of 6.0' and 2.0' respectively, in

order to vertically define the impact in this area. The trenches chloride field screening results showed vertical delineation at 6.0' (T-1) and 2.0' (T-2) below surface. Based on the field screening results AH-1 was split into two excavation areas (AH-3 North and South). As discussed in the work plan, the area of AH-3 North excavated to a depth of 2.0' below surface, while AH-3 South was excavated further to a depth of 6.0' below surface.

Confirmation bottom hole samples and sidewall samples were collected and evaluated for chlorides. The bottom hole samples exhibited a chloride concentration of <20.0 mg/kg for AH-3 North (CS-1 Bottom) and 277 mg/kg for AH-3 South (CS-2 Bottom) at depths of 2.0' and 5.0' respectively. In addition, the highest chloride concentration in the sidewall samples was detected at 291 mg/kg in AH-3 South (CS-2 West Sidewall). The sampling results are shown in Table 1.

The excavation was then brought to grade with additional clean soil and the pasture was seeded with a BLM approved mixture. In addition the area was then ripped and windrows were installed in order to prevent erosion.

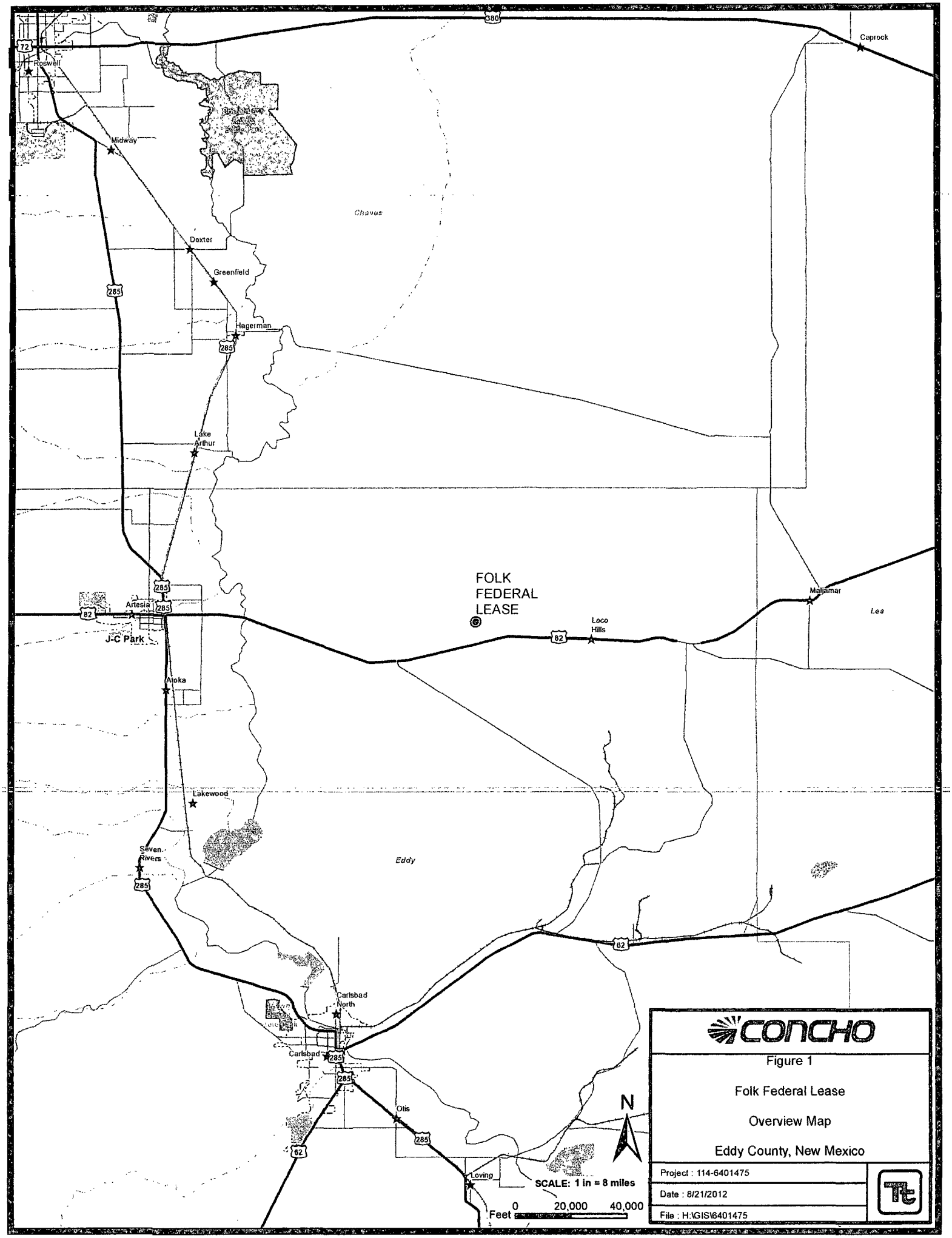
Based on the remedial activities performed, COG request closure of the site. A copy of the C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the remedial activities, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Ike Tavarez, PG
Senior Project Manager

cc: Pat Ellis – COG
cc: Terry Gregston – BLM

FIGURES



CONCHO

Figure 1

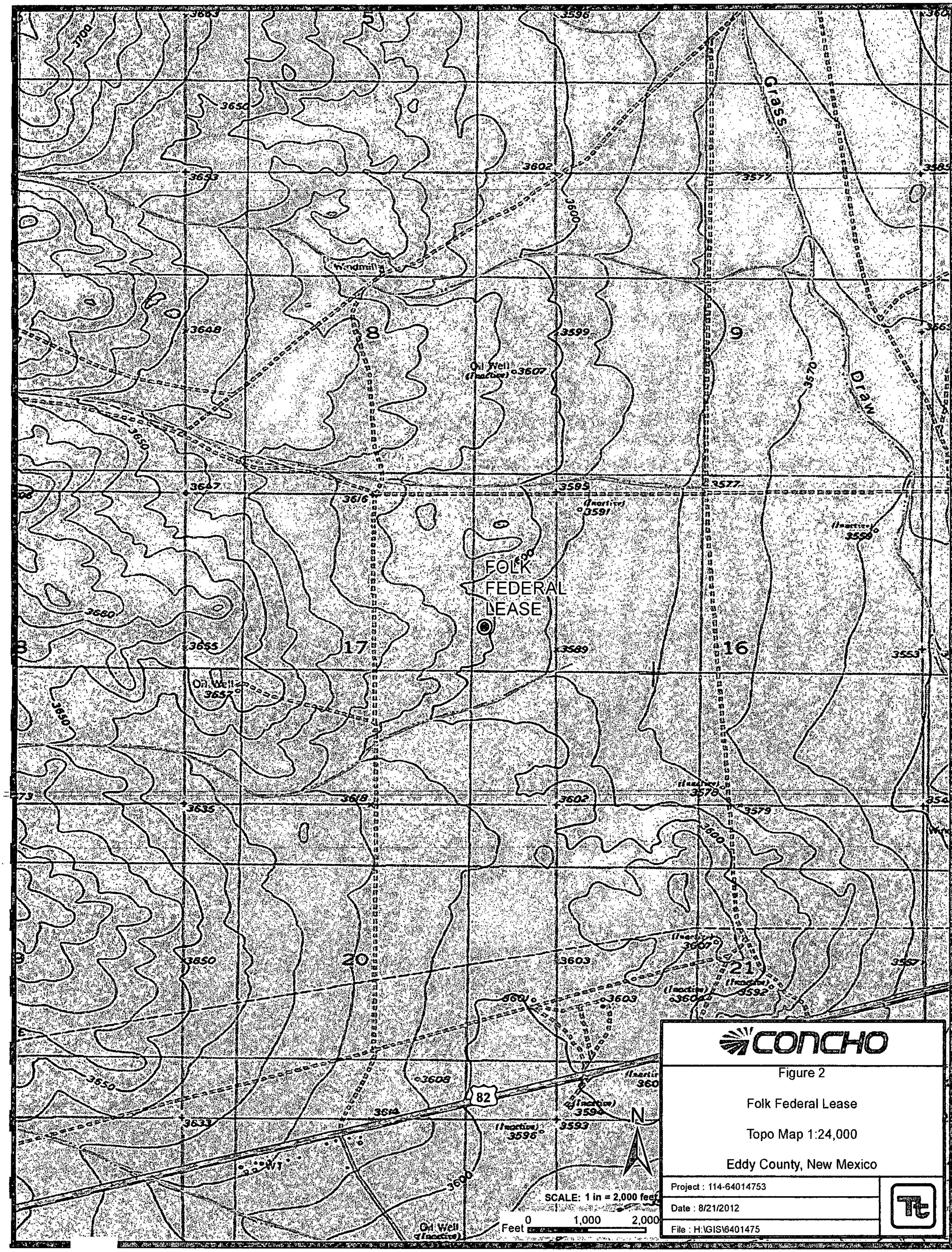
Folk Federal Lease

Overview Map

Eddy County, New Mexico

Project : 114-6401475	
Date : 8/21/2012	
File : H:\GIS\6401475	

Drawn By: Isabel Marmolejo



CONCHO

Figure 2

Folk Federal Lease

Topo Map 1:24,000

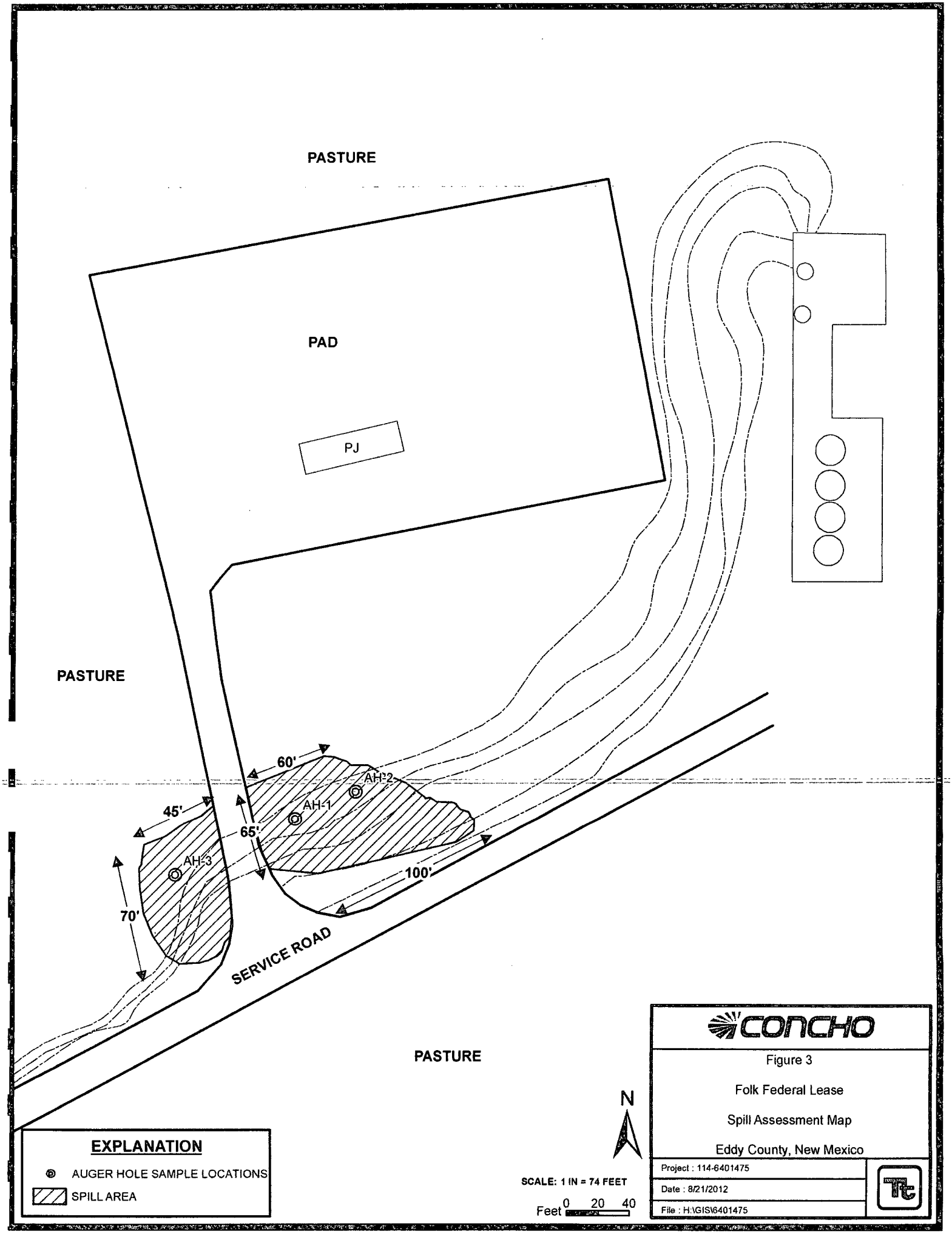
Eddy County, New Mexico

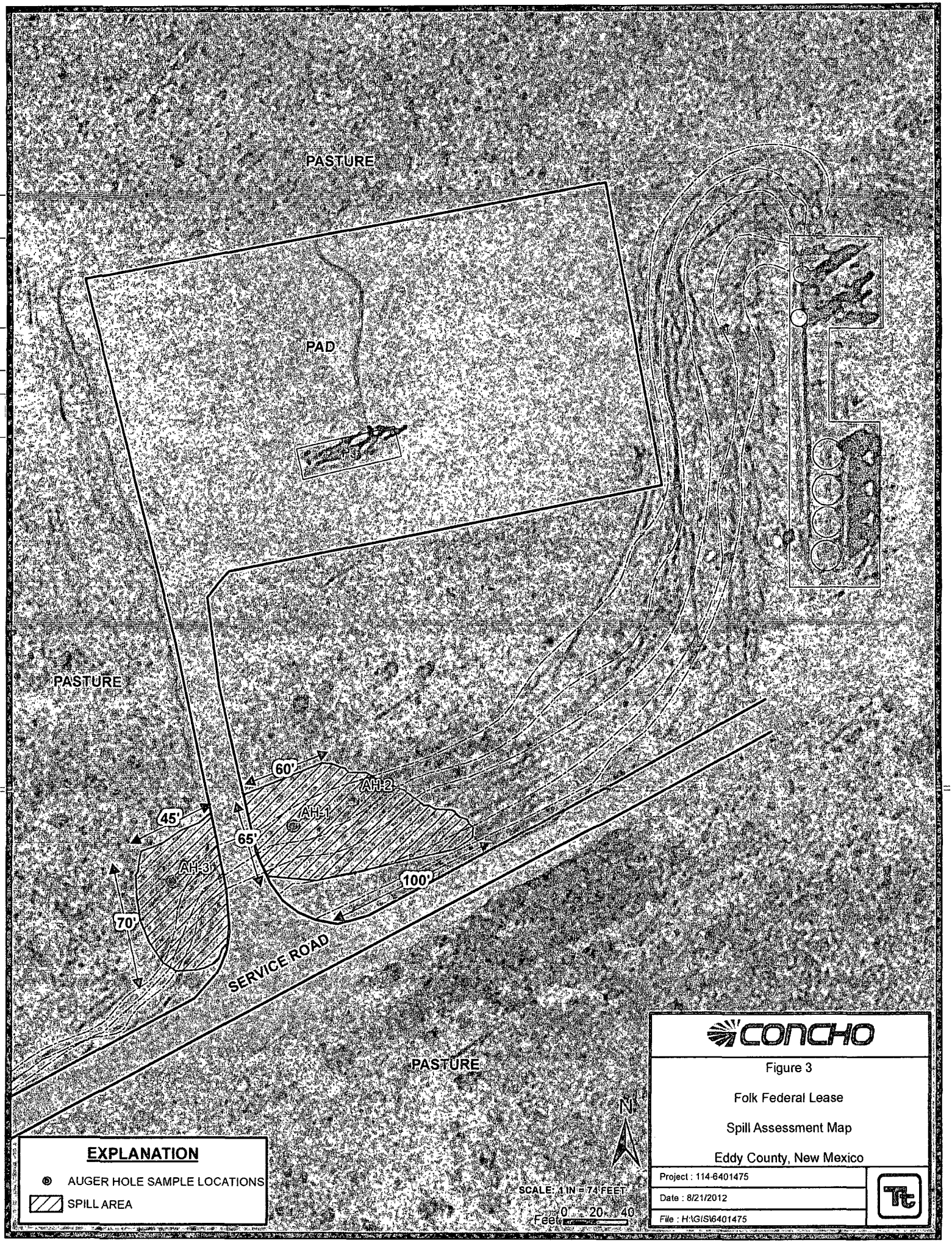
Project : 114-64014753

Date : 8/21/2012

File : H:\GIS\6401475

Drawn By: Isabel Marmolejo


PASTURE
PAD
PJ
PASTURE
60'
AH-2
AH-1
45'
65'
AH-3
100'
70'
SERVICE ROAD
PASTURE
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
SPILL AREA
N
SCALE: 1 IN = 74 FEET
Feet 0 20 40
CONCHO
Figure 3
Folk Federal Lease
Spill Assessment Map
Eddy County, New Mexico
Project : 114-6401475
Date : 8/21/2012
File : H:\GIS\6401475
Drawn By: Isabel Marmolejo



CONCHO

Figure 3

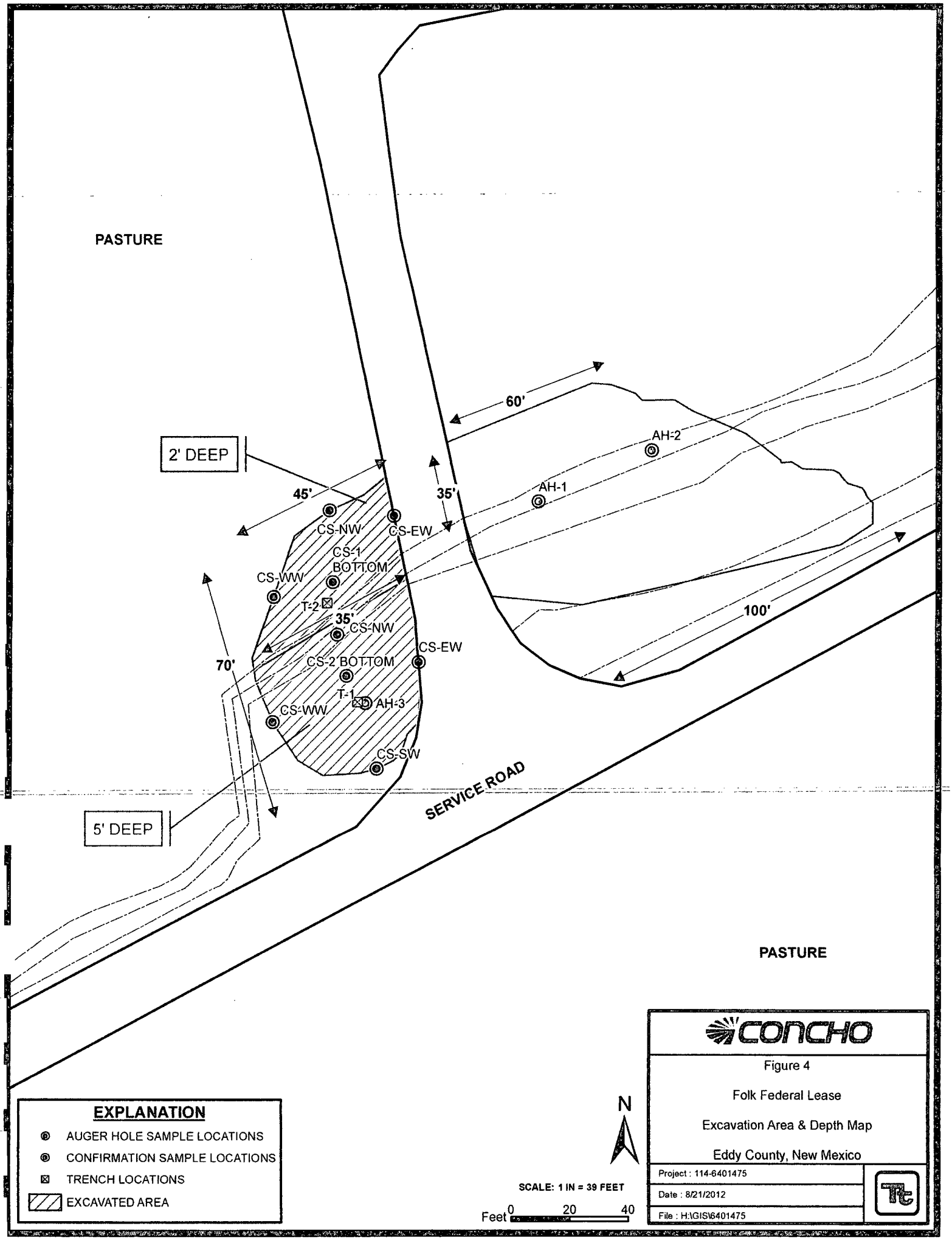
Folk Federal Lease

Spill Assessment Map

Eddy County, New Mexico

Project : 114-6401475	
Date : 8/21/2012	
File : H:\GIS\6401475	

Drawn By: Isabel Marmolejo


PASTURE
2' DEEP
45'
35'
60'
AH-2
AH-1
CS-NW
CS-EW
CS-1
BOTTOM
CS-WW
T-2
35'
CS-NW
CS-EW
70'
CS-2 BOTTOM
T-1
AH-3
CS-WW
CS-SW
100'
SERVICE ROAD
5' DEEP
PASTURE
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
CONFIRMATION SAMPLE LOCATIONS
TRENCH LOCATIONS
EXCAVATED AREA
N
SCALE: 1 IN = 39 FEET
Feet 0 20 40
CONCHO
Figure 4
Folk Federal Lease
Excavation Area & Depth Map
Eddy County, New Mexico
Project : 114-6401475
Date : 8/21/2012
File : H:\GIS\6401475
Drawn By: Isabel Marmolejo

TABLES

Table 1
COG Operating LLC.
Folk Federal Flow Lines
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	7/31/2012	0-1	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	722
	"	1-1.5	X		-	-	-	-	-	-	-	-	125
	"	2-2.5	X		-	-	-	-	-	-	-	-	<20.0
	"	2.5-3	X		-	-	-	-	-	-	-	-	81.9
AH-2	7/31/2012	0-1	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<20.0
AH-3	7/31/2012	0-1		X	5.93	170	176	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	14,400
CS-1 Bottom	9/25/2012	2	X		-	-	-	-	-	-	-	-	<20.0
CS-1 North Sidewall	9/25/2012	-	X		-	-	-	-	-	-	-	-	<20.0
CS-1 East Sidewall	9/25/2012	-	X		-	-	-	-	-	-	-	-	115
CS-1 West Sidewall	9/25/2012	-	X		-	-	-	-	-	-	-	-	43.0
CS-2 Bottom	9/25/2012	5	X		-	-	-	-	-	-	-	-	277
CS-2 North Sidewall	9/25/2012	-	X		-	-	-	-	-	-	-	-	167
CS-2 East Sidewall	9/25/2012	-	X		-	-	-	-	-	-	-	-	<20.0
CS-2 South Sidewall	9/25/2012	-	X		-	-	-	-	-	-	-	-	<20.0
CS-2 West Sidewall	9/25/2012	-	X		-	-	-	-	-	-	-	-	291
T-1	9/21/2012	6	X		-	-	-	-	-	-	-	-	80.7

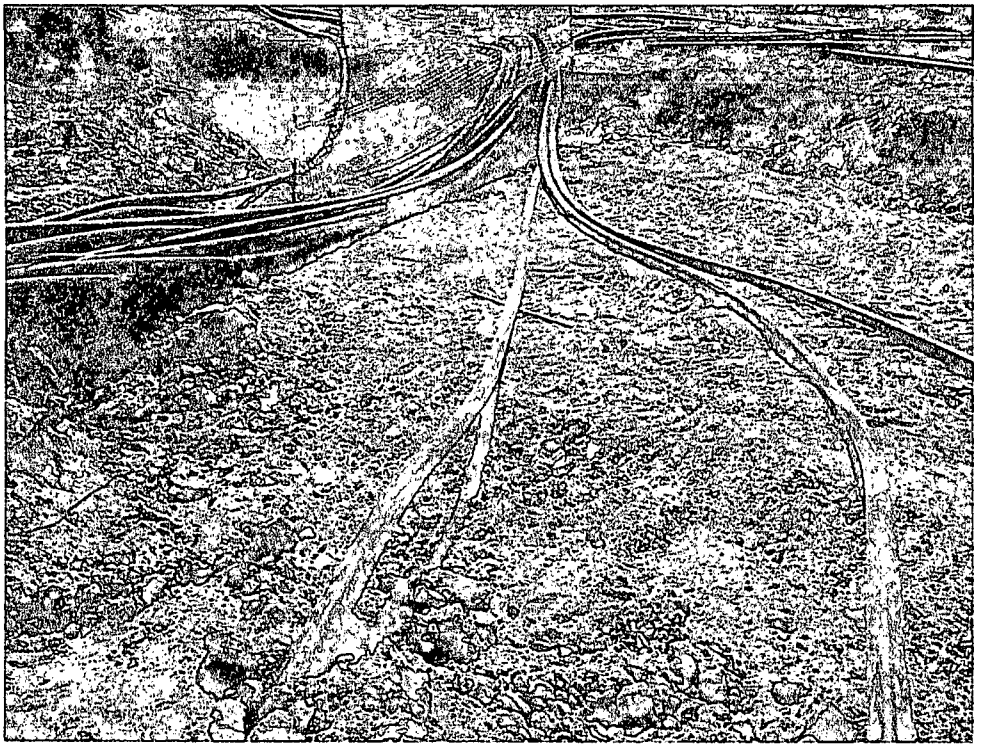
(-) Not Analyzed

Excavated Depths

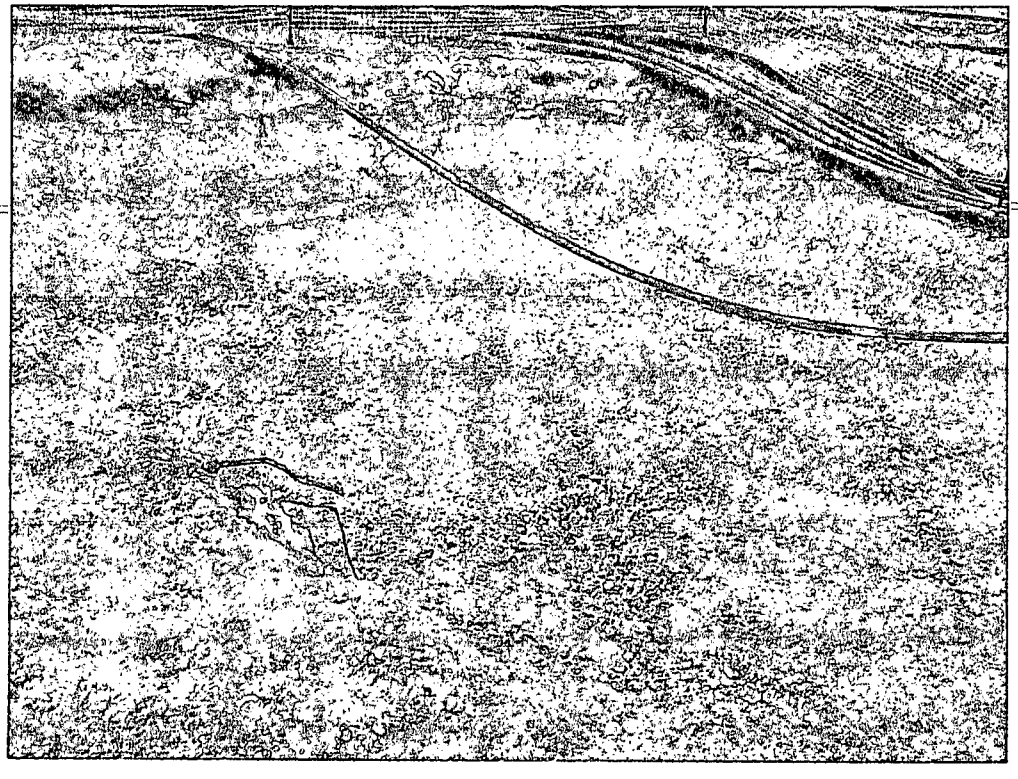
PHOTOGRAPHS

COG Operating LLC
Folk Federal Lease
Eddy County, New Mexico

TETRA TECH



View Southeast – Excavation of AH-3.

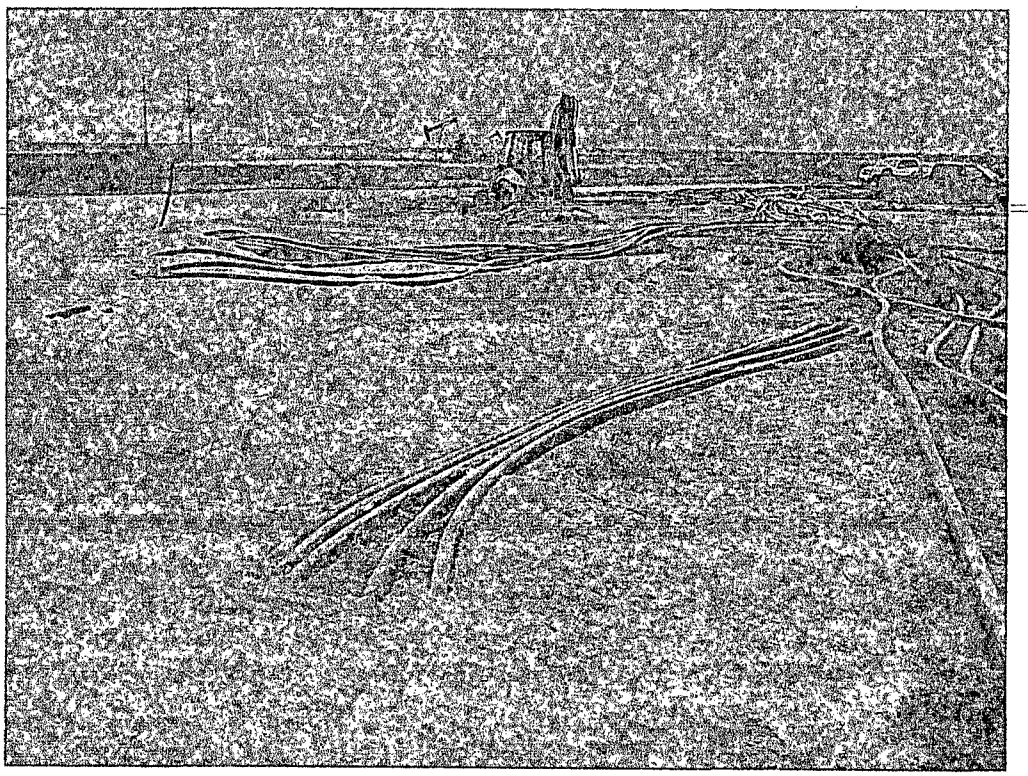


View East – Deeper excavation of AH-3.

COG Operating LLC
Folk Federal Lease
Eddy County, New Mexico

TETRA TECH

View Southeast – backfill



View Southeast – Area of AH-3

APPENDIX A

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	COG OPERATING LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Folk Federal Lease	Facility Type	Flowlines

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

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 32.83623 **Longitude** 104.09164

NATURE OF RELEASE

Type of Release Produced fluid	Volume of Release 5bbls oil 5bbls water	Volume Recovered 0bbls Majority consumed in fire
Source of Release Burned flowlines	Date and Hour of Occurrence 07/05/2012	Date and Hour of Discovery 07/05/2012 3:30 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 07/06/2012 10:46 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.*

A lighting storm caused a fire on our Folk Federal lease burning several flowlines, which caused the release of fluid. We are in the process of replacing all impacted flowlines.

Describe Area Affected and Cleanup Action Taken.*

Initially approximately 10bbls were released from the burned flowlines on our Folk Federal Lease due to a lighting fire. We were unable to recover any of the fluid from the flowlines because the majority of the fluid was consumed in the fire. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation workplan 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: HSE Coordinator	Approval Date:	Expiration Date:
E-mail Address: jrusso@conchoresources.com	Conditions of Approval:	Attached ☐
Date: 07/12/2012 Phone: 432-212-2399		

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
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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
NOV 01 2012
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	**550 W. Texas, Suite 100 Midland, Texas 79701**	Telephone No.	**(432) 230-0077**
Facility Name	**Folk Federal Lease**	Facility Type	**Flowlines**

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

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 32.83623° **Longitude** W 104.09164°

NATURE OF RELEASE

Type of Release: Produced Fluid	Volume of Release 5 bbls oil 5 bbls water	Volume Recovered 0 bbls oil Majority consumed in fire
Source of Release: Burned flowlines	Date and Hour of Occurrence 07/05/2012	Date and Hour of Discovery 07/05/2012 3:30 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 07/06/2012 10:46 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.*

A lightning storm caused a fire on our Folk Federal lease burning several flowlines, which caused the release of fluid. The impacted flowlines were replaced.

Describe Area Affected and Cleanup Action Taken.*

Tetra Tech personnel inspected the site and collected samples to define the spills extent. Soil that exceeded RRAL was removed and hauled away for proper disposal. The site was then brought up to surface grade with clean backfill material. Tetra Tech prepared a closure report and submitted 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: 10-15-12 Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

APPENDIX B

Water Well Data
Average Depth to Groundwater (ft)
COG - Folk Federal Lease, 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	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	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 53	35	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	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	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 85	36

18 South 29 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 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 Lea, County, NM (Report 6)
- Geology and Groundwater Resources of Eddy County, NM (Report 3)

208 Abandoned Waterwell

APPENDIX C

Summary Report

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

Report Date: August 10, 2012

Work Order: 12080310

Project Location: Eddy Co., NM
Project Name: COG/Folk Federal Flow Lines
Project Number: 114-6401475

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
305709	AH-1 0-1'	soil	2012-07-31	00:00	2012-08-02
305710	AH-1 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305711	AH-1 2-2.5'	soil	2012-07-31	00:00	2012-08-02
305712	AH-1 2.5-3'	soil	2012-07-31	00:00	2012-08-02
305713	AH-2 0-1'	soil	2012-07-31	00:00	2012-08-02
305714	AH-3 0-1'	soil	2012-07-31	00:00	2012-08-02

	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)
305709 - AH-1 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
305713 - AH-2 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
305714 - AH-3 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	**170**	**5.93**

Sample: 305709 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**722**	mg/Kg	4

Sample: 305710 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**125**	mg/Kg	4

Sample: 305711 - AH-1 2-2.5'

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

Sample: 305712 - AH-1 2.5-3'

Param	Flag	Result	Units	RL
Chloride		**81.9**	mg/Kg	4

Sample: 305713 - AH-2 0-1'

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

Sample: 305714 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		**14400**	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: August 10, 2012

Work Order: 12080310

Project Location: Eddy Co., NM
Project Name: COG/Folk Federal Flow Lines
Project Number: 114-6401475

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
305709	AH-1 0-1'	soil	2012-07-31	00:00	2012-08-02
305710	AH-1 1-1.5'	soil	2012-07-31	00:00	2012-08-02
305711	AH-1 2-2.5'	soil	2012-07-31	00:00	2012-08-02
305712	AH-1 2.5-3'	soil	2012-07-31	00:00	2012-08-02
305713	AH-2 0-1'	soil	2012-07-31	00:00	2012-08-02
305714	AH-3 0-1'	soil	2012-07-31	00:00	2012-08-02

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 Flow Lines were received by TraceAnalysis, Inc. on 2012-08-02 and assigned to work order 12080310. Samples for work order 12080310 were received intact at a temperature of 4.7 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	79433	2012-08-07 at 15:57	93704	2012-08-07 at 15:57
Chloride (Titration)	SM 4500-Cl B	79384	2012-08-05 at 10:03	93635	2012-08-05 at 20:04
Chloride (Titration)	SM 4500-Cl B	79384	2012-08-05 at 10:03	93636	2012-08-05 at 20:12
TPH DRO - NEW	S 8015 D	79440	2012-08-07 at 08:00	93713	2012-08-08 at 08:36
TPH GRO	S 8015 D	79433	2012-08-07 at 15:57	93705	2012-08-07 at 15:57

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 12080310 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: 305709 - AH-1 0-1'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	93704	Date Analyzed:	2012-08-07	Analyzed By:	ZLM
Prep Batch:	79433	Sample Preparation:	2012-08-07	Prepared By:	ZLM

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)			1.90	mg/Kg	1	2.00	95	70 - 130
4-Bromofluorobenzene (4-BFB)			1.92	mg/Kg	1	2.00	96	70 - 130

Sample: 305709 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93635	Date Analyzed:	2012-08-05	Analyzed By:	AR
Prep Batch:	79384	Sample Preparation:	2012-08-05	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**722**	mg/Kg	5	4.00

Sample: 305709 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	93713	Date Analyzed:	2012-08-08	Analyzed By:	CW
Prep Batch:	79440	Sample Preparation:	2012-08-07	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			127	mg/Kg	1	100	127	49.3 - 157.5

Sample: 305709 - AH-1 0-1'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	93705	Date Analyzed:	2012-08-07	Analyzed By:	ZLM
Prep Batch:	79433	Sample Preparation:	2012-08-07	Prepared By:	ZLM

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.00	mg/Kg	1	2.00	100	70 - 130
4-Bromofluorobenzene (4-BFB)			2.04	mg/Kg	1	2.00	102	70 - 130

Sample: 305710 - AH-1 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93635	Date Analyzed:	2012-08-05	Analyzed By:	AR
Prep Batch:	79384	Sample Preparation:	2012-08-05	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**125**	mg/Kg	5	4.00

Sample: 305711 - AH-1 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93635	Date Analyzed:	2012-08-05	Analyzed By:	AR
Prep Batch:	79384	Sample Preparation:	2012-08-05	Prepared By:	AR

continued ...

sample 305711 continued ...

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

Sample: 305712 - AH-1 2.5-3'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93635	Date Analyzed:	2012-08-05	Analyzed By:	AR
Prep Batch:	79384	Sample Preparation:	2012-08-05	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**81.9**	mg/Kg	5	4.00

Sample: 305713 - AH-2 0-1'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	93704	Date Analyzed:	2012-08-07	Analyzed By:	ZLM
Prep Batch:	79433	Sample Preparation:	2012-08-07	Prepared By:	ZLM

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)			1.97	mg/Kg	1	2.00	98	70 - 130
4-Bromofluorobenzene (4-BFB)			2.02	mg/Kg	1	2.00	101	70 - 130

Sample: 305713 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93636	Date Analyzed:	2012-08-05	Analyzed By:	AR
Prep Batch:	79384	Sample Preparation:	2012-08-05	Prepared By:	AR

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

Sample: 305713 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	93713	Date Analyzed:	2012-08-08	Analyzed By:	CW
Prep Batch:	79440	Sample Preparation:	2012-08-07	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			135	mg/Kg	1	100	135	49.3 - 157.5

Sample: 305713 - AH-2 0-1'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	93705	Date Analyzed:	2012-08-07	Analyzed By:	ZLM
Prep Batch:	79433	Sample Preparation:	2012-08-07	Prepared By:	ZLM

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.08	mg/Kg	1	2.00	104	70 - 130
4-Bromofluorobenzene (4-BFB)			2.19	mg/Kg	1	2.00	110	70 - 130

Sample: 305714 - AH-3 0-1'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	93704	Date Analyzed:	2012-08-07	Analyzed By:	ZLM
Prep Batch:	79433	Sample Preparation:	2012-08-07	Prepared By:	ZLM

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)			1.87	mg/Kg	1	2.00	94	70 - 130
4-Bromofluorobenzene (4-BFB)			1.88	mg/Kg	1	2.00	94	70 - 130

Sample: 305714 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93636	Date Analyzed:	2012-08-05	Analyzed By:	AR
Prep Batch:	79384	Sample Preparation:	2012-08-05	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**14400**	mg/Kg	10	4.00

Sample: 305714 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	93713	Date Analyzed:	2012-08-08	Analyzed By:	CW
Prep Batch:	79440	Sample Preparation:	2012-08-07	Prepared By:	CW

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		2	**170**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			138	mg/Kg	1	100	138	49.3 - 157.5

Sample: 305714 - AH-3 0-1'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	93705	Date Analyzed:	2012-08-07	Analyzed By:	ZLM
Prep Batch:	79433	Sample Preparation:	2012-08-07	Prepared By:	ZLM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	B	1	**5.93**	mg/Kg	1	4.00

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)			2.20	mg/Kg	1	2.00	110	70 - 130

Method Blanks

Method Blank (1) QC Batch: 93635

QC Batch: 93635 | Date Analyzed: 2012-08-05 | Analyzed By: AR
Prep Batch: 79384 | QC Preparation: 2012-08-05 | Prepared By: AR

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

Method Blank (1) QC Batch: 93636

QC Batch: 93636 | Date Analyzed: 2012-08-05 | Analyzed By: AR
Prep Batch: 79384 | QC Preparation: 2012-08-05 | Prepared By: AR

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

Method Blank (1) QC Batch: 93704

QC Batch: 93704 | Date Analyzed: 2012-08-07 | Analyzed By: ZLM
Prep Batch: 79433 | QC Preparation: 2012-08-07 | Prepared By: ZLM

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.75	mg/Kg	1	2.00	88	70 - 130
4-Bromofluorobenzene (4-BFB)			1.74	mg/Kg	1	2.00	87	70 - 130

Method Blank (1) QC Batch: 93705

QC Batch:	93705	Date Analyzed:	2012-08-07	Analyzed By:	ZLM
Prep Batch:	79433	QC Preparation:	2012-08-07	Prepared By:	ZLM

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	1.14	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.04	mg/Kg	1	2.00	102	70 - 130
4-Bromofluorobenzene (4-BFB)			1.76	mg/Kg	1	2.00	88	70 - 130

Method Blank (1) QC Batch: 93713

QC Batch:	93713	Date Analyzed:	2012-08-08	Analyzed By:	CW
Prep Batch:	79440	QC Preparation:	2012-08-07	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			130	mg/Kg	1	100	130	52 - 160.8

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 93635 | Date Analyzed: 2012-08-05 | Analyzed By: AR
Prep Batch: 79384 | QC Preparation: 2012-08-05 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2500	mg/Kg	1	2500	<3.85	100	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			2570	mg/Kg	1	2500	<3.85	103	85 - 115	3	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 93636 | Date Analyzed: 2012-08-05 | Analyzed By: AR
Prep Batch: 79384 | QC Preparation: 2012-08-05 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2400	mg/Kg	1	2500	<3.85	96	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2480	mg/Kg	1	2500	<3.85	99	85 - 115	3	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 93704 | Date Analyzed: 2012-08-07 | Analyzed By: ZLM
Prep Batch: 79433 | QC Preparation: 2012-08-07 | Prepared By: ZLM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.81	mg/Kg	1	2.00	<0.00365	90	75.4 - 120
Toluene		1	1.75	mg/Kg	1	2.00	<0.00816	88	74.9 - 120
Ethylbenzene		1	1.72	mg/Kg	1	2.00	<0.00560	86	78.1 - 120
Xylene		1	5.18	mg/Kg	1	6.00	<0.00460	86	77.3 - 120

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.76	mg/Kg	1	2.00	<0.00365	88	75.4 - 120	3	20
Toluene		1	1.72	mg/Kg	1	2.00	<0.00816	86	74.9 - 120	2	20
Ethylbenzene		1	1.73	mg/Kg	1	2.00	<0.00560	86	78.1 - 120	1	20
Xylene		1	5.19	mg/Kg	1	6.00	<0.00460	86	77.3 - 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)	1.73	1.66	mg/Kg	1	2.00	86	83	70 - 130
4-Bromofluorobenzene (4-BFB)	1.81	1.74	mg/Kg	1	2.00	90	87	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 93705 | Date Analyzed: 2012-08-07 | Analyzed By: ZLM
Prep Batch: 79433 | QC Preparation: 2012-08-07 | Prepared By: ZLM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	19.2	mg/Kg	1	20.0	1.14	96	68.9 - 120

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	20.1	mg/Kg	1	20.0	1.14	100	68.9 - 120	5	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.93	2.02	mg/Kg	1	2.00	96	101	70 - 130
4-Bromofluorobenzene (4-BFB)	2.09	1.91	mg/Kg	1	2.00	104	96	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 93713 | Date Analyzed: 2012-08-08 | Analyzed By: CW
Prep Batch: 79440 | QC Preparation: 2012-08-07 | Prepared By: CW

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		2	292	mg/Kg	1	250	<14.5	117	62 - 128.3

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		2	307	mg/Kg	1	250	<14.5	123	62 - 128.3	5	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	142	150	mg/Kg	1	100	142	150	58.6 - 149.6

Matrix Spike (MS-1) Spiked Sample: 305712

QC Batch: 93635 | Date Analyzed: 2012-08-05 | Analyzed By: AR
Prep Batch: 79384 | QC Preparation: 2012-08-05 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2690	mg/Kg	5	2500	81.9	104	79.4 - 120.6

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2760	mg/Kg	5	2500	81.9	107	79.4 - 120.6	3	20

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

Matrix Spike (MS-1) Spiked Sample: 305732

QC Batch: 93636 | Date Analyzed: 2012-08-05 | Analyzed By: AR
Prep Batch: 79384 | QC Preparation: 2012-08-05 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			7320	mg/Kg	10	2500	4820	100	79.4 - 120.6

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			7530	mg/Kg	10	2500	4820	108	79.4 - 120.6	3	20

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

Matrix Spike (MS-1) Spiked Sample: 305596

QC Batch: 93704 | Date Analyzed: 2012-08-07 | Analyzed By: ZLM
Prep Batch: 79433 | QC Preparation: 2012-08-07 | Prepared By: ZLM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.80	mg/Kg	1	2.00	<0.00365	90	37.6 - 142
Toluene		1	1.91	mg/Kg	1	2.00	<0.00816	96	38.6 - 153
Ethylbenzene		1	2.04	mg/Kg	1	2.00	<0.00560	102	36.7 - 172
Xylene		1	6.10	mg/Kg	1	6.00	<0.00460	102	36.7 - 173

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.64	mg/Kg	1	2.00	<0.00365	82	37.6 - 142	9	20
Toluene		1	1.72	mg/Kg	1	2.00	<0.00816	86	38.6 - 153	10	20
Ethylbenzene		1	1.83	mg/Kg	1	2.00	<0.00560	92	36.7 - 172	11	20
Xylene		1	5.50	mg/Kg	1	6.00	<0.00460	92	36.7 - 173	10	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)	1.93	1.75	mg/Kg	1	2	96	88	70 - 130
4-Bromofluorobenzene (4-BFB)	1.94	1.81	mg/Kg	1	2	97	90	70 - 130

Matrix Spike (MS-1) Spiked Sample: 305596

QC Batch: 93705 | Date Analyzed: 2012-08-07 | Analyzed By: ZLM
Prep Batch: 79433 | QC Preparation: 2012-08-07 | Prepared By: ZLM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	14.9	mg/Kg	1	20.0	<0.359	74	68.9 - 120

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	15.6	mg/Kg	1	20.0	<0.359	78	68.9 - 120	5	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.77	1.75	mg/Kg	1	2	88	88	70 - 130
4-Bromofluorobenzene (4-BFB)	1.98	2.11	mg/Kg	1	2	99	106	70 - 130

Matrix Spike (MS-1) Spiked Sample: 305604

QC Batch: 93713 | Date Analyzed: 2012-08-08 | Analyzed By: CW
Prep Batch: 79440 | QC Preparation: 2012-08-07 | Prepared By: CW

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		2	943	mg/Kg	1	250	751	77	45.5 - 127

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		2	1010	mg/Kg	1	250	751	104	45.5 - 127	7	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	158	169	mg/Kg	1	100	158	169	45.4 - 145.8

Calibration Standards

Standard (CCV-1)

QC Batch: 93635 | Date Analyzed: 2012-08-05 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.5	100	85 - 115	2012-08-05

Standard (CCV-2)

QC Batch: 93635 | Date Analyzed: 2012-08-05 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-08-05

Standard (CCV-1)

QC Batch: 93636 | Date Analyzed: 2012-08-05 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-08-05

Standard (CCV-2)

QC Batch: 93636 | Date Analyzed: 2012-08-05 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.7	100	85 - 115	2012-08-05

Standard (CCV-1)

QC Batch: 93704 | Date Analyzed: 2012-08-07 | Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0928	93	80 - 120	2012-08-07
Toluene		1	mg/kg	0.100	0.0906	91	80 - 120	2012-08-07
Ethylbenzene		1	mg/kg	0.100	0.0891	89	80 - 120	2012-08-07
Xylene		1	mg/kg	0.300	0.268	89	80 - 120	2012-08-07

Standard (CCV-2)

QC Batch: 93704 | Date Analyzed: 2012-08-07 | Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0884	88	80 - 120	2012-08-07
Toluene		1	mg/kg	0.100	0.0860	86	80 - 120	2012-08-07
Ethylbenzene		1	mg/kg	0.100	0.0857	86	80 - 120	2012-08-07
Xylene		1	mg/kg	0.300	0.254	85	80 - 120	2012-08-07

Standard (CCV-3)

QC Batch: 93704 | Date Analyzed: 2012-08-07 | Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0842	84	80 - 120	2012-08-07
Toluene		1	mg/kg	0.100	0.0816	82	80 - 120	2012-08-07
Ethylbenzene		1	mg/kg	0.100	0.0826	83	80 - 120	2012-08-07
Xylene		1	mg/kg	0.300	0.246	82	80 - 120	2012-08-07

Standard (CCV-1)

QC Batch: 93705 | Date Analyzed: 2012-08-07 | Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.06	106	80 - 120	2012-08-07

Standard (CCV-2)

QC Batch: 93705 Date Analyzed: 2012-08-07 Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.827	83	80 - 120	2012-08-07

Standard (CCV-3)

QC Batch: 93705 Date Analyzed: 2012-08-07 Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.860	86	80 - 120	2012-08-07

Standard (CCV-1)

QC Batch: 93713 Date Analyzed: 2012-08-08 Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	291	116	80 - 120	2012-08-08

Standard (CCV-2)

QC Batch: 93713 Date Analyzed: 2012-08-08 Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	276	110	80 - 120	2012-08-08

Standard (CCV-3)

QC Batch: 93713 Date Analyzed: 2012-08-08 Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		2	mg/Kg	250	280	112	80 - 120	2012-08-08

Appendix

Report Definitions

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

Laboratory Certifications

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

Standard Flags

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

Attachments

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

10w 20-

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6401475

PROJECT NAME: COG / Folk Federal Flow Lines. Eddy Co NM.

LAB I.D. NUMBER	DATE 2012	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
305709	7/31		S		X	AH1 0-1	1				X		X	X											X				
710						1-1.5	1				X														X				
711						2-2.5	1				X														X				
712						~~2.5~~ 2.5-3	1				X														X				
713						AH2 0-1	1				X		X	X											X				
714						AH3 0-1	1				X		X	X											X				

RELINQUISHED BY: (Signature) Date: 8/2/12 Time: 8:41 — RECEIVED BY: (Signature) Date: 8/2/12 Time: 8:41

SAMPLED BY: (Print & Initial) Brandon BH Date: 7/31/12 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: STATE: ZIP:
CONTACT: PHONE: DATE: TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 4°

REMARKS: Run deeper samples if TPH exceeds 5,000 mg/kg.

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

Run deeper samples if benzene exceeds 10 mg/kg or total BTEX exceeds 50 mg/kg.

10/00 ? IC

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 1

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6401475

PROJECT NAME: COG / Folk Federal Flow Lines. Eddy Co NM.

LAB I.D. NUMBER	DATE 2012	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
305709	7/31		S		X	AH1 0-1	1				X		X	X											X				
710						1-1.5	1				X														X				
711						2-2.5	1				X														X				
712						~~3-3.5~~ TH 2.5-3	1				X														X				
713						AH2 0-1	1				X		X	X											X				
714						AH3 0-1	1				X		X	X											X				

RELINQUISHED BY: (Signature) Date: 8/2/12 Time: 8:44 — RECEIVED BY: (Signature) Date: 8/2/12 Time: 8:44

SAMPLED BY: (Print & Initial) Brandon TH Date: 7/31/12 Time:

RELINQUISHED BY: (Signature) Date: 8/3/12 Time: 11:20 — RECEIVED BY: (Signature) Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS OTHER: — AIRBILL #: 2N975 15

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

TETRA TECH CONTACT PERSON: Ike Tavarez — Results by:

RECEIVING LABORATORY: — RECEIVED BY: (Signature)
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE: DATE: 8/7/12 TIME: 9:30

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 4 | 4.3 | 4.2

REMARKS: Run deeper samples if TPH exceeds 5,000 mg/kg Midland - DRO/GRO Lubbock - GRO/BTEX

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

Run deeper samples if benzene exceeds 10 mg/kg or total BTEX exceeds 50 mg/kg.

Summary Report

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

Report Date: October 19, 2012

Work Order: 12101104

Project Location: Eddy Co., NM
Project Name: COG/Folk Federal Flow Lines
Project Number: 114-6401475

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
311573	CS-1 Bottom 2'	soil	2012-09-25	00:00	2012-10-11
311574	CS-1 North Sidewall	soil	2012-09-25	00:00	2012-10-11
311575	CS-1 East Sidewall	soil	2012-09-25	00:00	2012-10-11
311576	CS-1 West Sidewall	soil	2012-09-25	00:00	2012-10-11
311577	CS-2 Bottom 5'	soil	2012-09-25	00:00	2012-10-11
311578	CS-2 North Sidewall	soil	2012-09-25	00:00	2012-10-11
311579	CS-2 East Sidewall	soil	2012-09-25	00:00	2012-10-11
311580	CS-2 South Sidewall	soil	2012-09-25	00:00	2012-10-11
311581	CS-2 West Sidewall	soil	2012-09-25	00:00	2012-10-11
311582	T-1 6' (CS-2) AH-3	soil	2012-09-21	00:00	2012-10-11

Sample: 311573 - CS-1 Bottom 2'

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

Sample: 311574 - CS-1 North Sidewall

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

Sample: 311575 - CS-1 East Sidewall

Param	Flag	Result	Units	RL
Chloride		**115**	mg/Kg	4

Sample: 311576 - CS-1 West Sidewall

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

Sample: 311577 - CS-2 Bottom 5'

Param	Flag	Result	Units	RL
Chloride		**277**	mg/Kg	4

Sample: 311578 - CS-2 North Sidewall

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

Sample: 311579 - CS-2 East Sidewall

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

Sample: 311580 - CS-2 South Sidewall

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

Sample: 311581 - CS-2 West Sidewall

Param	Flag	Result	Units	RL
Chloride		**291**	mg/Kg	4

Sample: 311582 - T-1 6' (CS-2) AH-3

Param	Flag	Result	Units	RL
Chloride		**80.7**	mg/Kg	4

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: October 19, 2012

Work Order: 12101104

Project Location: Eddy Co., NM
Project Name: COG/Folk Federal Flow Lines
Project Number: 114-6401475

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
311573	CS-1 Bottom 2'	soil	2012-09-25	00:00	2012-10-11
311574	CS-1 North Sidewall	soil	2012-09-25	00:00	2012-10-11
311575	CS-1 East Sidewall	soil	2012-09-25	00:00	2012-10-11
311576	CS-1 West Sidewall	soil	2012-09-25	00:00	2012-10-11
311577	CS-2 Bottom 5'	soil	2012-09-25	00:00	2012-10-11
311578	CS-2 North Sidewall	soil	2012-09-25	00:00	2012-10-11
311579	CS-2 East Sidewall	soil	2012-09-25	00:00	2012-10-11
311580	CS-2 South Sidewall	soil	2012-09-25	00:00	2012-10-11
311581	CS-2 West Sidewall	soil	2012-09-25	00:00	2012-10-11
311582	T-1 6' (CS-2) AH-3	soil	2012-09-21	00:00	2012-10-11

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 Flow Lines were received by TraceAnalysis, Inc. on 2012-10-11 and assigned to work order 12101104. Samples for work order 12101104 were received intact without headspace and at a temperature of 2.1 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	81144	2012-10-16 at 11:19	95848	2012-10-17 at 15:49
Chloride (Titration)	SM 4500-Cl B	81144	2012-10-16 at 11:19	95849	2012-10-17 at 15:49

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 12101104 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: 311573 - CS-1 Bottom 2'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95848	Date Analyzed:	2012-10-17	Analyzed By:	AR
Prep Batch:	81144	Sample Preparation:	2012-10-16	Prepared By:	AR

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

Sample: 311574 - CS-1 North Sidewall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95848	Date Analyzed:	2012-10-17	Analyzed By:	AR
Prep Batch:	81144	Sample Preparation:	2012-10-16	Prepared By:	AR

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

Sample: 311575 - CS-1 East Sidewall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95848	Date Analyzed:	2012-10-17	Analyzed By:	AR
Prep Batch:	81144	Sample Preparation:	2012-10-16	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**115**	mg/Kg	5	4.00

Sample: 311576 - CS-1 West Sidewall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95848	Date Analyzed:	2012-10-17	Analyzed By:	AR
Prep Batch:	81144	Sample Preparation:	2012-10-16	Prepared By:	AR

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

Sample: 311577 - CS-2 Bottom 5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95848	Date Analyzed:	2012-10-17	Analyzed By:	AR
Prep Batch:	81144	Sample Preparation:	2012-10-16	Prepared By:	AR

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

Sample: 311578 - CS-2 North Sidewall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95848	Date Analyzed:	2012-10-17	Analyzed By:	AR
Prep Batch:	81144	Sample Preparation:	2012-10-16	Prepared By:	AR

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

Sample: 311579 - CS-2 East Sidewall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95848	Date Analyzed:	2012-10-17	Analyzed By:	AR
Prep Batch:	81144	Sample Preparation:	2012-10-16	Prepared By:	AR

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

Sample: 311580 - CS-2 South Sidewall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95848	Date Analyzed:	2012-10-17	Analyzed By:	AR
Prep Batch:	81144	Sample Preparation:	2012-10-16	Prepared By:	AR

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

Sample: 311581 - CS-2 West Sidewall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95848	Date Analyzed:	2012-10-17	Analyzed By:	AR
Prep Batch:	81144	Sample Preparation:	2012-10-16	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**291**	mg/Kg	5	4.00

Sample: 311582 - T-1 6' (CS-2) AH-3

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95849	Date Analyzed:	2012-10-17	Analyzed By:	AR
Prep Batch:	81144	Sample Preparation:	2012-10-16	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**80.7**	mg/Kg	5	4.00

Method Blanks

Method Blank (1) QC Batch: 95848

QC Batch:	95848	Date Analyzed:	2012-10-17	Analyzed By:	AR
Prep Batch:	81144	QC Preparation:	2012-10-16	Prepared By:	AR

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

Method Blank (1) QC Batch: 95849

QC Batch:	95849	Date Analyzed:	2012-10-17	Analyzed By:	AR
Prep Batch:	81144	QC Preparation:	2012-10-16	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: 95848 | Date Analyzed: 2012-10-17 | Analyzed By: AR
Prep Batch: 81144 | QC Preparation: 2012-10-16 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2630	mg/Kg	1	2500	<3.85	105	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			2580	mg/Kg	1	2500	<3.85	103	85 - 115	2	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 95849 | Date Analyzed: 2012-10-17 | Analyzed By: AR
Prep Batch: 81144 | QC Preparation: 2012-10-16 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2710	mg/Kg	1	2500	<3.85	108	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	3	20

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

Matrix Spike (MS-1) Spiked Sample: 311581

QC Batch: 95848 | Date Analyzed: 2012-10-17 | Analyzed By: AR
Prep Batch: 81144 | QC Preparation: 2012-10-16 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2750	mg/Kg	5	2500	291	98	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2830	mg/Kg	5	2500	291	102	78.9 - 121	3	20

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

Matrix Spike (MS-1) Spiked Sample: 311639

QC Batch: 95849 | Date Analyzed: 2012-10-17 | Analyzed By: AR
Prep Batch: 81144 | QC Preparation: 2012-10-16 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3430	mg/Kg	5	2500	954	99	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			3280	mg/Kg	5	2500	954	93	78.9 - 121	4	20

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

Calibration Standards

Standard (CCV-1)

QC Batch: 95848 | Date Analyzed: 2012-10-17 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-10-17

Standard (CCV-2)

QC Batch: 95848 | Date Analyzed: 2012-10-17 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.3	99	85 - 115	2012-10-17

Standard (CCV-1)

QC Batch: 95849 | Date Analyzed: 2012-10-17 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-10-17

Standard (CCV-2)

QC Batch: 95849 | Date Analyzed: 2012-10-17 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.6	100	85 - 115	2012-10-17

10/11/07

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.: 114-6410475

PROJECT NAME: COG / Folk Fed Flow line Eddy Co, NM

ANALYSIS REQUEST (Circle or Specify Method No.)

PRESERVATIVE METHOD

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	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
31573	9/25		S		X	CS-1 Bottom 2'	1				X													X				
574						CS-1 North Sidewall																						
575						CS-1 East Sidewall																						
576						CS-1 West Sidewall																						
577						CS-2 Bottom 5'																						
578						CS-2 North Sidewall																						
579						CS-2 East Sidewall																						
580						CS-2 South Sidewall																						
581						CS-2 West Sidewall																						
582	9/21		S		X	T-2 T-1 1' (CS-2) AH-3	1				X													X				

RELINQUISHED BY: (Signature) Date: 10/11/12 Time: 0556 — RECEIVED BY: (Signature) Date: 10/11/12 Time: 9:30

SAMPLED BY: (Print & Initial) JT Date: 9/25/12 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° Ice

REMARKS: Mail all

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