SITE INFORMATION

Report Type: Closure Report

General Site Information:						
Site:	Lightning 24 Federal Com #1					
Company:	COG Operating LLC					
Section, Township and Range	Unit B	Sec 24	T25S	R26E		
Lease Number:	API-30-015-33001					
County:	Eddy County					
GPS:	32.12125° N			104.24445° W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	In Malaga at the intersection of Hwy 285 and Hwy 396, travel 8.8 miles west on Hwy 396, turn left onto lease rd. and travel 7.7 miles, turn right and travel 0.2 miles to location.					

Release Data:	
Date Released:	7/11/2012
Type Release:	Produced Water
Source of Contamination:	Steel Tank
Fluid Released:	100 bbls
Fluids Recovered:	80 bbls

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Official Communication:			
Name:	Pat Ellis		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	One Concho Center		1910 N. Big Spring
P.O. Box	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	20
50-99 ft	10	
>100 ft.	0	
WellHead Protection:	**Ranking Score**	**Site Data**
Water Source <1,000 ft., Private <200 ft.	20	
Water Source >1,000 ft., Private >200 ft.	0	0
Surface Body of Water:	**Ranking Score**	**Site Data**
<200 ft.	20	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0
Total Ranking Score:	**20**	

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

TETRA TECH

March 12, 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., Lightning 24 Federal Com #1 Tank Battery, Unit B, Section 24, Township 25 South, Range 26 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 Lightning 24 Federal Com #1 Tank Battery located in Unit B, Section 24, Township 25 South, Range 26 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.12125°, W 104.24445°. 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 11, 2012 and released approximately one hundred (100) barrels of produced water from a water tank with eighty (80) barrels of standing fluids recovered. The spill was entirely contained within the firewalls of the tank battery and measured approximately 15' X 55'. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 24. According to the NMOCD groundwater map, the average depth to groundwater in this area is approximately less than 50' below surface. The groundwater data is shown in Appendix B

Regulatory

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

based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 100 mg/kg.

Soil Assessment and Analytical Results

On August 30, 2012, Tetra Tech personnel inspected and sampled the spill area. Two (2) auger holes (AH-1 and AH-2) 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, the area of AH-2 samples exceeded the TPH RRAL with concentrations of 2,844 mg/kg at 0-3", but declined to 365 mg/kg at 3"-6" below surface. In addition, elevated chloride concentrations at 0-3" were detected with chloride concentrations of 8,980 mg/kg (AH-1) and 1,810 mg/kg (AH-2). However, the chloride concentrations declined with depth at 3"-6" to 1,430 mg/kg and 449 mg/kg, respectively.

Remedial Activities and Conclusion

On November 28, 2012, Tetra Tech personnel supervised the excavation of the spill area. The excavated areas and depths are highlighted in Table 1 and shown on Figure 4. The spill footprint and final excavation depths of the soil remediation were met as stated in the approved work plan.

According to the BLM, the spill breached the facility firewall and impacted an area south (pad) and north (off pad) of the facility. As shown in Figure 4, the area south of the tank battery was excavated to a depth of approximately 1.0'. Confirmation samples (CS-4, CS-5 and CS-6) were collected north of the facility for evaluation and showed no impact to the area.

Prior to excavating the area inside the tank battery a backhoe trench (T-1) was installed and samples were collected down to 10.0' below surface to define extents. The trench results (T-1) are shown in Table 1. Referring to Table 1, the chloride declined with depth, but was not vertically define showing bottom trench sample of 1,690 mg/kg at 10.0' below surface.

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For safety concerns, the area of AH-1 was excavated to a depth of 3.0' below surface and capped with a 40 mil liner. The area AH-2 was excavated to a depth of approximately 1.0' below surface. Once excavated to the appropriate depths, all of the excavated areas were backfilled with clean material to surface grade. Confirmation samples (CS-1, CS-2 and CS-3) were collected and approximately 100 cubic yards were removed and disposed of at the R360 facility.

On January 16, 2013. Tetra Tech personnel supervised the installation of one (1) soil boring to a total depth of 50.0' below surface. The soil boring (SB-1) was installed in the area of AH-1 (T-1) where the chlorides were not vertically defined. The sampling results are summarized in Table 1 and copies of the laboratory analysis and chain-of-custody documentation are included in Appendix C. Referring to Table1, the soil boring showed chloride concentrations significantly declining with depth at approximately 15.0' below surface.

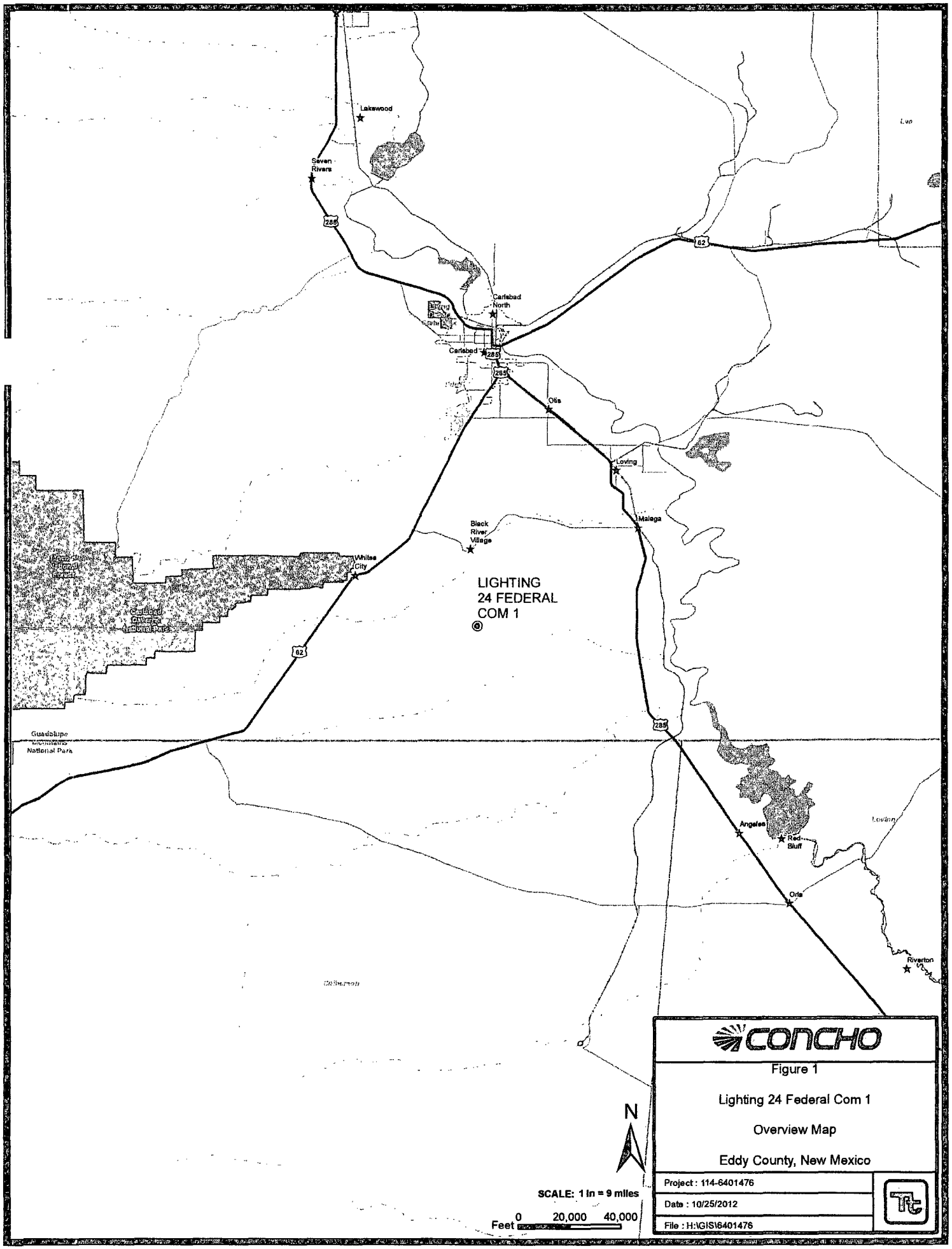
Based on the remediation activities performed at this location, COG requests closure for this site. The C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities performed at the site, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Ike Tavarez, PG
Senior Project Manager

cc: Pat Ellis – COG
cc: Jim Amos – BLM

Figures



CONCHO

Figure 1

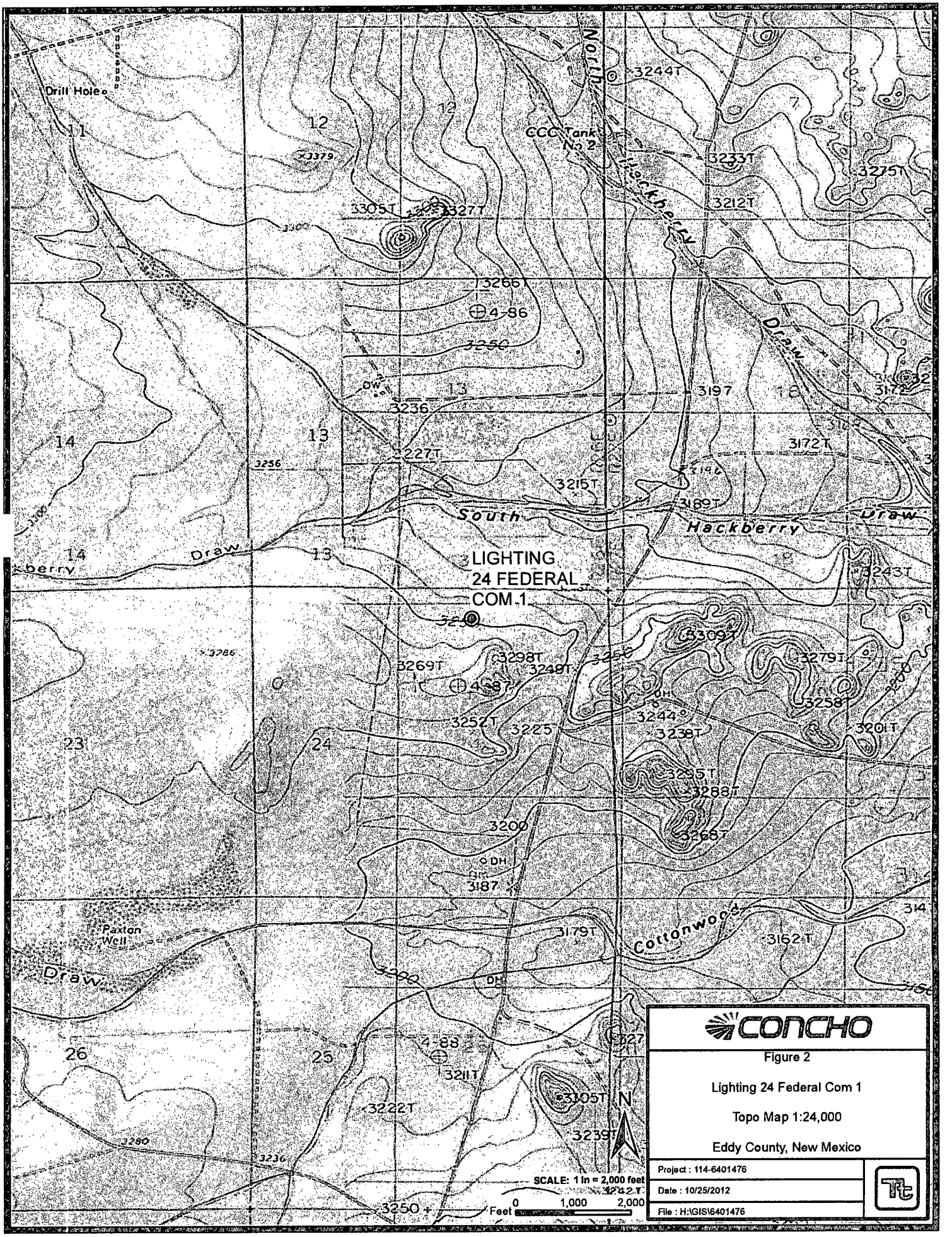
Lighting 24 Federal Com 1

Overview Map

Eddy County, New Mexico

Project : 114-6401476	
Data : 10/25/2012	
File : H:\GIS\6401476	

Drawn By: Isabel Marmolejo



CONCHO

Figure 2

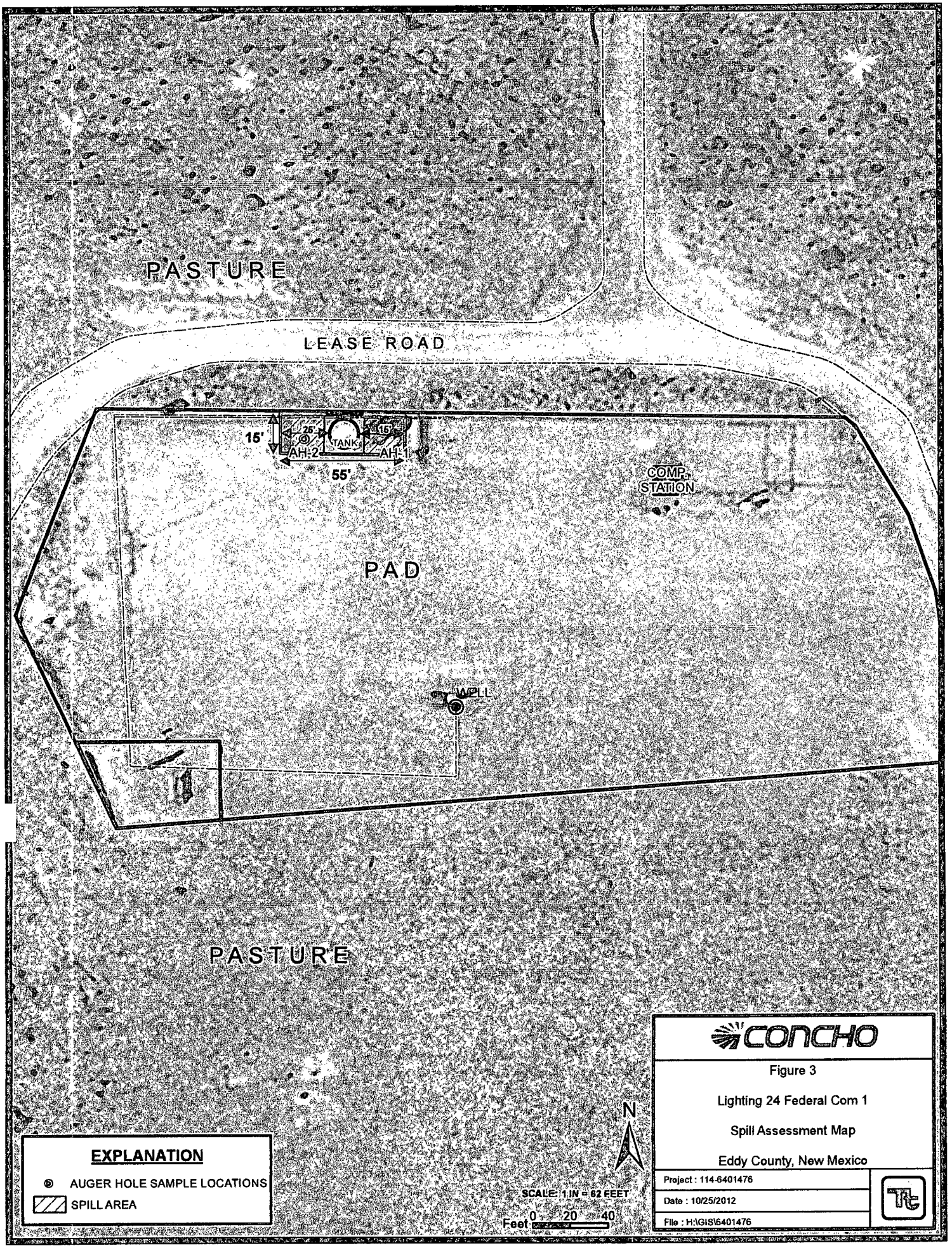
Lighting 24 Federal Com 1

Topo Map 1:24,000

Eddy County, New Mexico

Project : 114-6401476	
Date : 10/25/2012	
File : H:\GIS\6401476	

Drawn By: Isabel Marmolejo



EXPLANATION

- AUGER HOLE SAMPLE LOCATIONS
- SPILL AREA

CONCHO

Figure 3

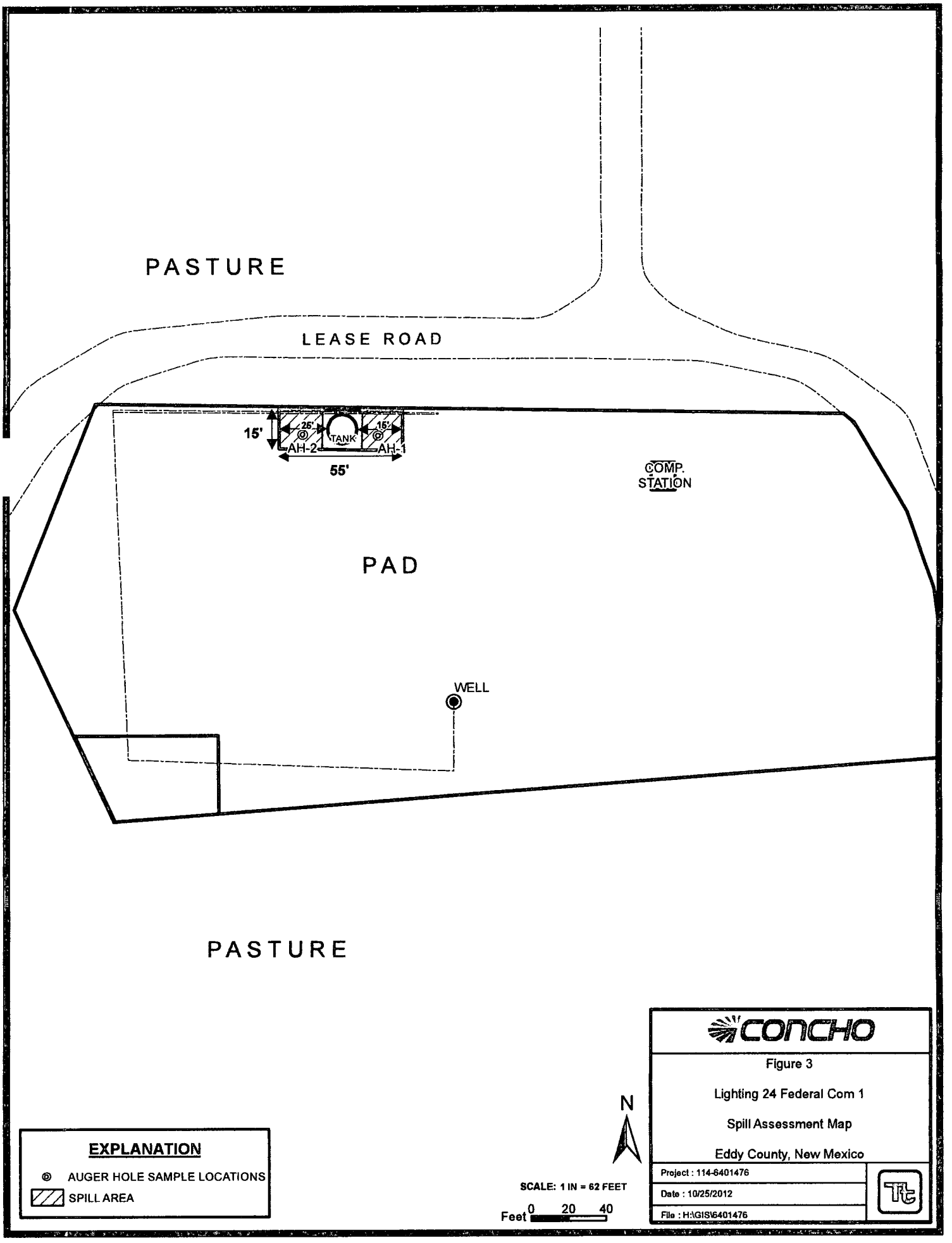
Lighting 24 Federal Com 1

Spill Assessment Map

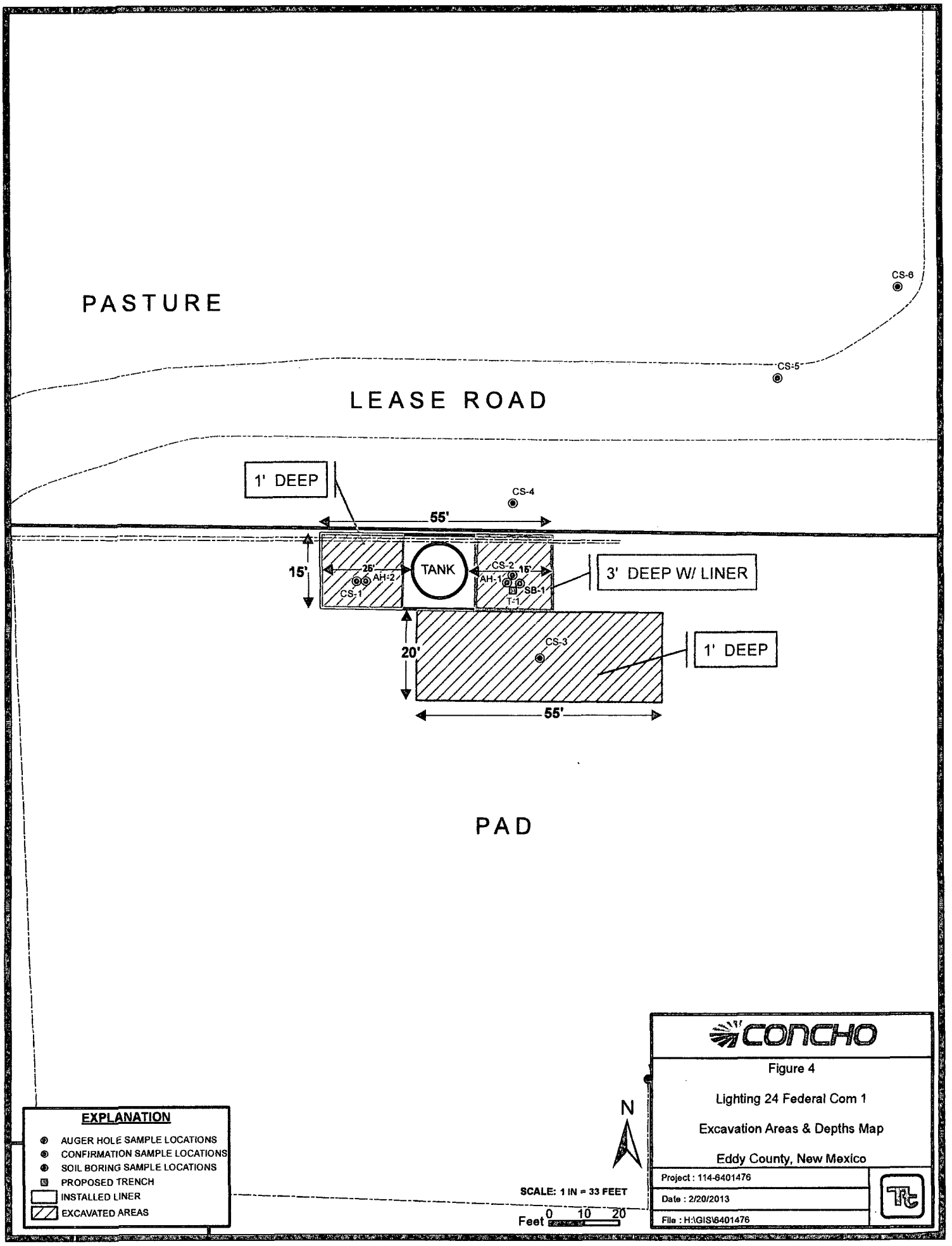
Eddy County, New Mexico

Project : 114-6401476	
Date : 10/25/2012	
File : H:\GIS\6401476	

Drawn By: Isabel Mennotejo



Drawn By: Isabel Marmolejo


PASTURE
CS-6
CS-5
LEASE ROAD
1' DEEP
CS-4
55'
15'
25'
AH-2
CS-1
TANK
CS-2
15'
AH-1
SB-1
T-1
3' DEEP W/ LINER
20'
CS-3
1' DEEP
55'
PAD
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
CONFIRMATION SAMPLE LOCATIONS
SOIL BORING SAMPLE LOCATIONS
PROPOSED TRENCH
INSTALLED LINER
EXCAVATED AREAS
N
SCALE: 1 IN = 33 FEET
Feet 0 10 20
CONCHO
Figure 4
Lighting 24 Federal Com 1
Excavation Areas & Depths Map
Eddy County, New Mexico
Project : 114-6401476
Date : 2/20/2013
File : H:\GIS\6401476
Drawn By: Isabel Mermolejo

Tables

Table 1
COG Operating LLC.
Lightning 24 Federal Commingle #1
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	8/30/2012	0-3 (inch)		X	17.2	<50.0	17.2	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	8,980
	"	3-6 (inch)		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	1,430
Trench-1	11/29/2012	1		X	-	-	-	-	-	-	-	-	3,550
	"	3		X	-	-	-	-	-	-	-	-	658
	"	5	X		-	-	-	-	-	-	-	-	3,110
	"	7	X		-	-	-	-	-	-	-	-	9,070
	"	9	X		-	-	-	-	-	-	-	-	5,870
	"	10	X		-	-	-	-	-	-	-	-	1,690
CS-1	11/30/2012	3' Bottom Hole			-	-	-	-	-	-	-	-	73.7
SB-1	1/16/2013	4-5	X		-	-	-	-	-	-	-	-	5,430
	"	6-7	X		-	-	-	-	-	-	-	-	4,080
	"	9-10	X		-	-	-	-	-	-	-	-	2,260
	"	14-15	X		-	-	-	-	-	-	-	-	24.2
	"	19-20	X		-	-	-	-	-	-	-	-	745
	"	24-25	X		-	-	-	-	-	-	-	-	213
	"	29-30	X		-	-	-	-	-	-	-	-	<20.0
	"	39-40	X		-	-	-	-	-	-	-	-	145
	"	49-50	X		-	-	-	-	-	-	-	-	72.5

Table 1
COG Operating LLC.
Lightning 24 Federal Commingle #1
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-2	8/30/2012	0-3 (inch)		X	384	2,460	2,844	<1.00	<1.00	<1.00	7.84	7.84	1,810
	"	3-6 (inch)		X	<4.00	365	365	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	449
CS-2	11/30/2012	1' Bottom Hole			-	-	-	-	-	-	-	-	101
CS-3	12/4/2012	1' Bottom Hole (Pad)			-	-	-	-	-	-	-	-	115
CS-4	12/4/2012	0-1' (Pasture)			-	-	-	-	-	-	-	-	46.0
CS-5	12/4/2012	0-1' (Pasture)			-	-	-	-	-	-	-	-	<20.0
CS-6	12/4/2012	0-1' (Pasture)			-	-	-	-	-	-	-	-	32.2

(-) Not Analyzed

Exacavated Depths

Liner Installed

Photos

COG Operating LLC
Lightning 24 Federal Com #1
Eddy County, New Mexico

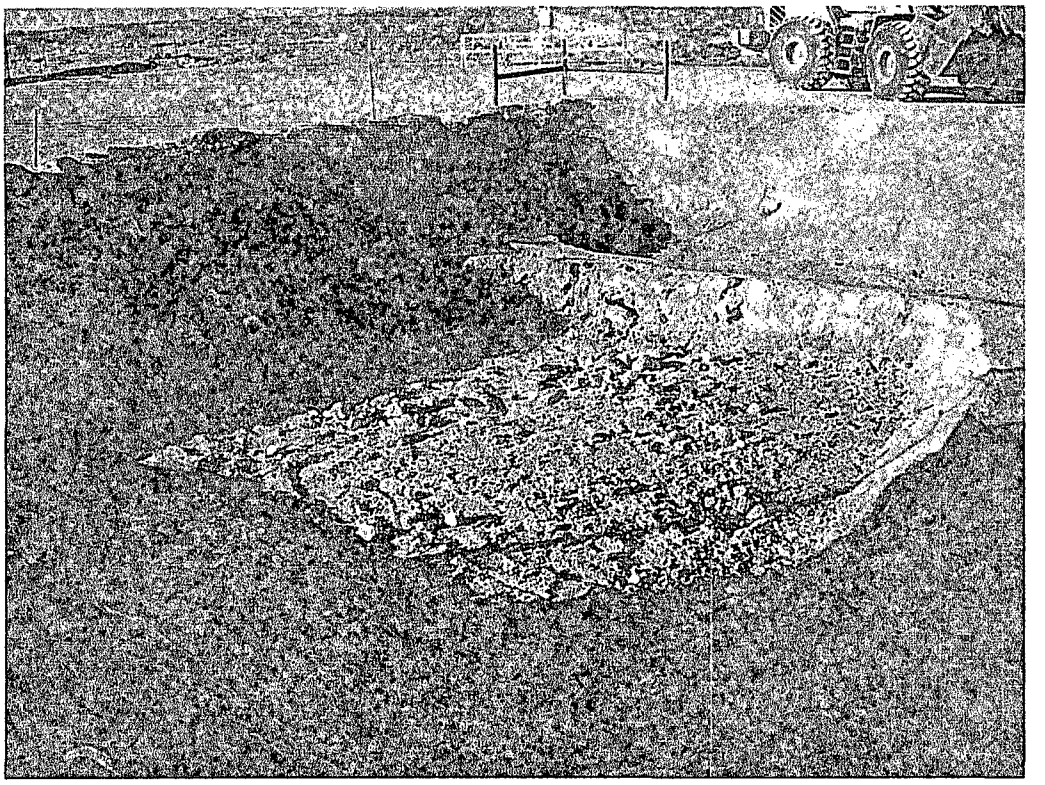
TETRA TECH

View Northwest – Area of T-1

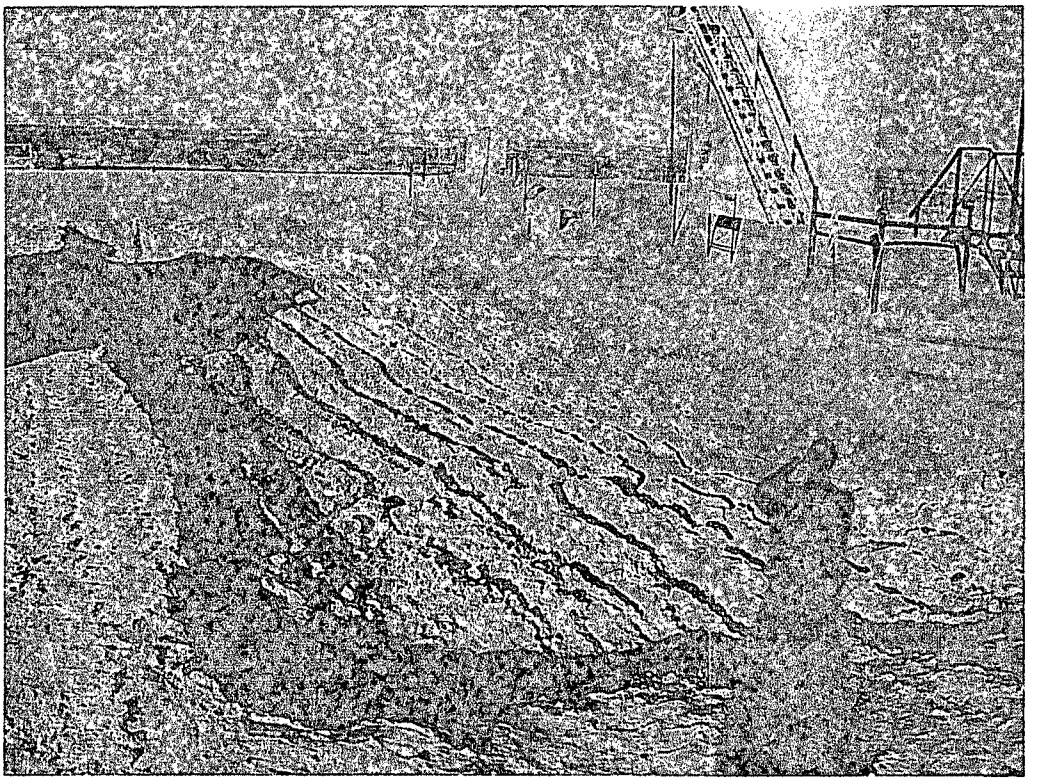
View Northwest – Area of AH-1, T-1 and CS-2

COG Operating LLC
Lightning 24 Federal Com #1
Eddy County, New Mexico

TETRA TECH



View Southwest – Area of AH-2 and CS-1

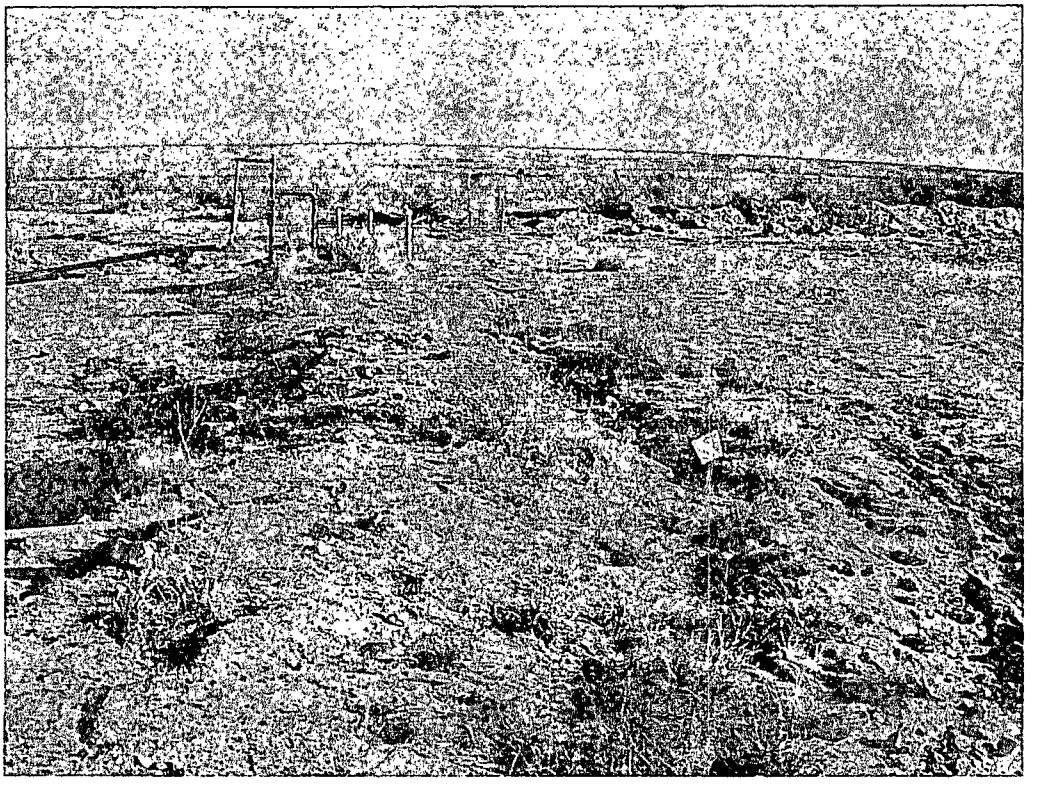


View West – Area of CS-3

COG Operating LLC
Lightning 24 Federal Com #1
Eddy County, New Mexico

TETRA TECH

View North – Area of CS-4



View Northeast – Area of CS-5 and CS-6

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
APR 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 Avenue, Midland, TX 79701**	Telephone No.	**(432) 230-0077**
Facility Name	**Lightning 24 Federal Com #1**	Facility Type	**Tank Battery**

Surface Owner: Federal	Mineral Owner	Lease No. (API#) 30-015-33001

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	24	25S	26E					Eddy

Latitude N 32.12125° **Longitude** W 104.24445 °

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 100 bbls	Volume Recovered 80 bbls
Source of Release: Steel Tank	Date and Hour of Occurrence 07/11/2012	Date and Hour of Discovery 07/11/2012 2:30p.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 07/11/2012 7:53 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

A steel tank developed a hole which then allowed for the release of fluids inside the facility. The tank has been out of service, cleaned, and prepped for repairs.

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 (Agent for COG)	Approved by District Supervisor:	
Title: Project Manager	Approval Date:	Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval:	Attached ☐
Date: 3-12-13 Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
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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	Lightning 24 Federal Com #1	Facility Type	Tank Battery

Surface Owner Federal	Mineral Owner	Lease No. (API#) 30-015-33001

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	24	25S	26E					Eddy

Latitude 32 07.270 **Longitude** 104 14.667

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 100bbls	Volume Recovered 80bbls
Source of Release Steel tank	Date and Hour of Occurrence 07/11/2012	Date and Hour of Discovery 07/11/2012 2:30 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 07/11/2012 7:53 p.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 steel tank developed a hole which then allowed for the release of fluids inside the facility. The tank has been taken out of service, cleaned, and prepped for repairs.

Describe Area Affected and Cleanup Action Taken.*

Initially 100bbls of produced water were released from the steel tank and we were able to recover 80bbls with a vacuum truck. All free fluid has been recovered. The release was completely contained inside the dike walls of the facility. Tetra Tech will sample the spill site area 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: HSE Coordinator	Approval Date:	Expiration Date:
E-mail Address: jrusso@conchoresources.com	Conditions of Approval:	Attached ☐
Date: 07/26/2012 Phone: 432-212-2399		

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Lightning 24 Federal Comm #1
Eddy County, New Mexico

24 South 25 East

6	5 14 209	4 440 44	3	2	1
7	8	9	10	11	12 27
18	17	16	15	14	13 7 163
19	20	21	22	23	24
30	29	28	27	26	25 540 57
31	32	33	34 150	35 500	36

24 South 26 East

6 63	5	4	3	2	1
7 250	8 450	9	10	11	12
18 650	17	16	15	14 30	13
19	20	21	22	23 38 37	24 26 30
30 70	29 46	28	27 30	26	25
31	32 111 109	33	34	35	36

24 South 27 East

6	5	4	3	2	1
7	8 26	9 43	10	11	12 27
18 34	17	16	15	14	13 31
19	20	21	22 70	23	24
30	29	28	27	26	25
31	32	33	34	35	36

25 South 25 East

6	5 30	4 46	3 20	2	1
7	8	9	10	11 43	12 39
18	17	16	15	14	13
19	20	21	22	23	24 70
30	29	28	27	26	25
31	32	33	34	35	36

25 South 26 East

6	5	4	3 45	2	1
7 60	8	9 45	10	11	12
18	17	16	15	14	13
19	20	21	22 118	23	24 SITE
30	29	28	27	26	25
31	32	33	34	35	36

25 South 27 East

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

26 South 25 East

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

26 South 26 East

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

26 South 27 East

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

- 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: January 25, 2013

Work Order: 13012204

Project Location: Eddy Co., NM
Project Name: COG/Lightning 24 Fed. Com. #1
Project Number: 114-6401476

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
318926	SB-1 4-5'	soil	2013-01-16	00:00	2013-01-21
318927	SB-1 6-7'	soil	2013-01-16	00:00	2013-01-21
318928	SB-1 9-10'	soil	2013-01-16	00:00	2013-01-21
318929	SB-1 14-15'	soil	2013-01-16	00:00	2013-01-21
318930	SB-1 19-20'	soil	2013-01-16	00:00	2013-01-21
318931	SB-1 24-25'	soil	2013-01-16	00:00	2013-01-21
318932	SB-1 29-30'	soil	2013-01-16	00:00	2013-01-21
318933	SB-1 39-40'	soil	2013-01-16	00:00	2013-01-21
318934	SB-1 49-50'	soil	2013-01-16	00:00	2013-01-21

Sample: 318926 - SB-1 4-5'

Param	Flag	Result	Units	RL
Chloride		**5430**	mg/Kg	4

Sample: 318927 - SB-1 6-7'

Param	Flag	Result	Units	RL
Chloride		**4080**	mg/Kg	4

Sample: 318928 - SB-1 9-10'

continued ...

sample 318928 continued ...

Param	Flag	Result	Units	RL

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

Sample: 318929 - SB-1 14-15'

Param	Flag	Result	Units	RL
Chloride		**24.2**	mg/Kg	4

Sample: 318930 - SB-1 19-20'

Param	Flag	Result	Units	RL
Chloride		**745**	mg/Kg	4

Sample: 318931 - SB-1 24-25'

Param	Flag	Result	Units	RL
Chloride		**213**	mg/Kg	4

Sample: 318932 - SB-1 29-30'

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

Sample: 318933 - SB-1 39-40'

Param	Flag	Result	Units	RL
Chloride		**145**	mg/Kg	4

Sample: 318934 - SB-1 49-50'

Param	Flag	Result	Units	RL
Chloride		**72.5**	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: January 25, 2013

Work Order: 13012204

Project Location: Eddy Co., NM
Project Name: COG/Lightning 24 Fed. Com. #1
Project Number: 114-6401476

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
318926	SB-1 4-5'	soil	2013-01-16	00:00	2013-01-21
318927	SB-1 6-7'	soil	2013-01-16	00:00	2013-01-21
318928	SB-1 9-10'	soil	2013-01-16	00:00	2013-01-21
318929	SB-1 14-15'	soil	2013-01-16	00:00	2013-01-21
318930	SB-1 19-20'	soil	2013-01-16	00:00	2013-01-21
318931	SB-1 24-25'	soil	2013-01-16	00:00	2013-01-21
318932	SB-1 29-30'	soil	2013-01-16	00:00	2013-01-21
318933	SB-1 39-40'	soil	2013-01-16	00:00	2013-01-21
318934	SB-1 49-50'	soil	2013-01-16	00:00	2013-01-21

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.

Michael Abel

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

Report Contents

Case Narrative

Samples for project COG/Lightning 24 Fed. Com. #1 were received by TraceAnalysis, Inc. on 2013-01-21 and assigned to work order 13012204. Samples for work order 13012204 were received intact at a temperature of 5.8 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	83284	2013-01-22 at 09:31	98381	2013-01-24 at 15:55

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 13012204 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: 318926 - SB-1 4-5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	98381	Date Analyzed:	2013-01-24	Analyzed By:	AR
Prep Batch:	83284	Sample Preparation:	2013-01-22	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**5430**	mg/Kg	10	4.00

Sample: 318927 - SB-1 6-7'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	98381	Date Analyzed:	2013-01-24	Analyzed By:	AR
Prep Batch:	83284	Sample Preparation:	2013-01-22	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**4080**	mg/Kg	10	4.00

Sample: 318928 - SB-1 9-10'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	98381	Date Analyzed:	2013-01-24	Analyzed By:	AR
Prep Batch:	83284	Sample Preparation:	2013-01-22	Prepared By:	AR

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

Sample: 318929 - SB-1 14-15'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	98381	Date Analyzed:	2013-01-24	Analyzed By:	AR
Prep Batch:	83284	Sample Preparation:	2013-01-22	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**24.2**	mg/Kg	5	4.00

Sample: 318930 - SB-1 19-20'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	98381	Date Analyzed:	2013-01-24	Analyzed By:	AR
Prep Batch:	83284	Sample Preparation:	2013-01-22	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**745**	mg/Kg	10	4.00

Sample: 318931 - SB-1 24-25'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	98381	Date Analyzed:	2013-01-24	Analyzed By:	AR
Prep Batch:	83284	Sample Preparation:	2013-01-22	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**213**	mg/Kg	5	4.00

Sample: 318932 - SB-1 29-30'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	98381	Date Analyzed:	2013-01-24	Analyzed By:	AR
Prep Batch:	83284	Sample Preparation:	2013-01-22	Prepared By:	AR

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

Sample: 318933 - SB-1 39-40'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	98381	Date Analyzed:	2013-01-24	Analyzed By:	AR
Prep Batch:	83284	Sample Preparation:	2013-01-22	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**145**	mg/Kg	5	4.00

Sample: 318934 - SB-1 49-50'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	98381	Date Analyzed:	2013-01-24	Analyzed By:	AR
Prep Batch:	83284	Sample Preparation:	2013-01-22	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**72.5**	mg/Kg	5	4.00

Method Blanks

Method Blank (1) QC Batch: 98381

QC Batch:	98381	Date Analyzed:	2013-01-24	Analyzed By:	AR
Prep Batch:	83284	QC Preparation:	2013-01-22	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: 98381 | Date Analyzed: 2013-01-24 | Analyzed By: AR
Prep Batch: 83284 | QC Preparation: 2013-01-22 | 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			2500	mg/Kg	1	2500	<3.85	100	85 - 115	5	20

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

Matrix Spike (MS-1) Spiked Sample: 318934

QC Batch: 98381 | Date Analyzed: 2013-01-24 | Analyzed By: AR
Prep Batch: 83284 | QC Preparation: 2013-01-22 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2770	mg/Kg	5	2500	72.5	108	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2880	mg/Kg	5	2500	72.5	112	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: 98381 | Date Analyzed: 2013-01-24 | 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	2013-01-24

Standard (CCV-2)

QC Batch: 98381 | Date Analyzed: 2013-01-24 | 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	2013-01-24

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

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.

1301a207

Analysis Request of Chain of Custody Record

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

PAGE: 1 OF: 2

CLIENT NAME: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6401476

PROJECT NAME: Lightning 24 Federal Com #1 Eddy Co NM

LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
318924	1/16		S	X		SB-1 0-1'	1					
925						2-3'						
926						4-5'						
927						6-7'						
928						9-10'						
929						14-15'						
930						19-20'						
931						24-25'						
932						29-30'						
933						39-40'						

ANALYSIS REQUEST (Circle or Specify Method No.)

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

RELINQUISHED BY: (Signature)	Date:	RECEIVED BY: (Signature) Jeanne Fitch	Date: 01-21-13 Time: 1600
RELINQUISHED BY: (Signature) Jeanne Fitch	Date: 01-21-13 Time: 1640	RECEIVED BY: (Signature)	Date: 1/21/13 Time: 16:40
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:

SAMPLED BY: (Print & Initial) TF — Date: 1-16-13 Time:

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

TETRA TECH CONTACT PERSON: Ike — 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: 5.8°

REMARKS: Midland . af

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

12/28/07

Analysis Request of Chain of Custody Record

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

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME:	SITE MANAGER:
COG	Ike Tavarez

PROJECT NO.:	PROJECT NAME:
114-62014776	Lightning 24 Federal Com #1 Eddy Co NM

LAB I.D. NUMBER	DATE 2013	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chlorides	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
934	1/16		S		X	SB-1 49-50'	1																	X				

RELINQUISHED BY: (Signature)	Date: / Time:	RECEIVED BY: (Signature)	Date: 01-21-13 Time: 1600
RELINQUISHED BY: (Signature) Jeanne Fitch	Date: 01-21-13 Time: 1640	RECEIVED BY: (Signature)	Date: 1/22/13 Time: 10:45
RELINQUISHED BY: (Signature)	Date: / Time:	RECEIVED BY: (Signature)	Date: / Time:

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

SAMPLED BY: (Print & Initial) TF	Date: 1-16-13 Time:
SAMPLE SHIPPED BY: (Circle) FEDEX HAND DELIVERED BUS UPS	AIRBILL #: OTHER:
TETRA TECH CONTACT PERSON: Ike	Results by:
	RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:	REMARKS:

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

Summary Report

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

Report Date: December 21, 2012

Work Order: 12121111

Project Location: NM
Project Name: COG/Lightning 24 Fed. Com. #1
Project Number: 114-6401476

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
316387	Trench-1 1' (AH-1)	soil	2012-11-29	00:00	2012-12-11
316388	Trench-1 3' (AH-1)	soil	2012-11-29	00:00	2012-12-11
316389	Trench-1 5' (AH-1)	soil	2012-11-29	00:00	2012-12-11
316390	Trench-1 7' (AH-1)	soil	2012-11-29	00:00	2012-12-11
316391	Trench-1 9' (AH-1)	soil	2012-11-29	00:00	2012-12-11
316392	Trench-1 10' (AH-1)	soil	2012-11-29	00:00	2012-12-11
316393	CS-1 3' Bottom Hole (AH-1)	soil	2012-11-30	00:00	2012-12-11
316394	CS-2 1' Bottom Hole (AH-2)	soil	2012-11-30	00:00	2012-12-11
316395	CS-3 1' Bottom Hole (Pad)	soil	2012-12-04	00:00	2012-12-11
316396	CS-4 0-1' (Pasture)	soil	2012-12-04	00:00	2012-12-11
316397	CS-5 0-1' (Pasture)	soil	2012-12-04	00:00	2012-12-11
316398	CS-6 0-1' (Pasture)	soil	2012-12-04	00:00	2012-12-11

Sample: 316387 - Trench-1 1' (AH-1)

Param	Flag	Result	Units	RL
Chloride		**3550**	mg/Kg	4

Sample: 316388 - Trench-1 3' (AH-1)

Param	Flag	Result	Units	RL
Chloride		**658**	mg/Kg	4

Sample: 316389 - Trench-1 5' (AH-1)

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

Sample: 316390 - Trench-1 7' (AH-1)

Param	Flag	Result	Units	RL
Chloride		**9070**	mg/Kg	4

Sample: 316391 - Trench-1 9' (AH-1)

Param	Flag	Result	Units	RL
Chloride		**5870**	mg/Kg	4

Sample: 316392 - Trench-1 10' (AH-1)

Param	Flag	Result	Units	RL
Chloride		**1690**	mg/Kg	4

Sample: 316393 - CS-1 3' Bottom Hole (AH-1)

Param	Flag	Result	Units	RL
Chloride		**73.7**	mg/Kg	4

Sample: 316394 - CS-2 1' Bottom Hole (AH-2)

Param	Flag	Result	Units	RL
Chloride		**101**	mg/Kg	4

Sample: 316395 - CS-3 1' Bottom Hole (Pad)

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

Sample: 316396 - CS-4 0-1' (Pasture)

Param	Flag	Result	Units	RL
Chloride		**46.0**	mg/Kg	4

Sample: 316397 - CS-5 0-1' (Pasture)

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

Sample: 316398 - CS-6 0-1' (Pasture)

Param	Flag	Result	Units	RL
Chloride		**32.2**	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: December 21, 2012

Work Order: 12121111

Project Location: NM
Project Name: COG/Lightning 24 Fed. Com. #1
Project Number: 114-6401476

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
316387	Trench-1 1' (AH-1)	soil	2012-11-29	00:00	2012-12-11
316388	Trench-1 3' (AH-1)	soil	2012-11-29	00:00	2012-12-11
316389	Trench-1 5' (AH-1)	soil	2012-11-29	00:00	2012-12-11
316390	Trench-1 7' (AH-1)	soil	2012-11-29	00:00	2012-12-11
316391	Trench-1 9' (AH-1)	soil	2012-11-29	00:00	2012-12-11
316392	Trench-1 10' (AH-1)	soil	2012-11-29	00:00	2012-12-11
316393	CS-1 3' Bottom Hole (AH-1)	soil	2012-11-30	00:00	2012-12-11
316394	CS-2 1' Bottom Hole (AH-2)	soil	2012-11-30	00:00	2012-12-11
316395	CS-3 1' Bottom Hole (Pad)	soil	2012-12-04	00:00	2012-12-11
316396	CS-4 0-1' (Pasture)	soil	2012-12-04	00:00	2012-12-11
316397	CS-5 0-1' (Pasture)	soil	2012-12-04	00:00	2012-12-11
316398	CS-6 0-1' (Pasture)	soil	2012-12-04	00:00	2012-12-11

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/Lightning 24 Fed. Com. #1 were received by TraceAnalysis, Inc. on 2012-12-11 and assigned to work order 12121111. Samples for work order 12121111 were received intact at a temperature of 1.2 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	82663	2012-12-19 at 09:02	97585	2012-12-19 at 16:46
Chloride (Titration)	SM 4500-Cl B	82663	2012-12-19 at 09:02	97586	2012-12-19 at 16:59

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 12121111 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: 316387 - Trench-1 1' (AH-1)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97585	Date Analyzed:	2012-12-19	Analyzed By:	AR
Prep Batch:	82663	Sample Preparation:	2012-12-19	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**3550**	mg/Kg	10	4.00

Sample: 316388 - Trench-1 3' (AH-1)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97585	Date Analyzed:	2012-12-19	Analyzed By:	AR
Prep Batch:	82663	Sample Preparation:	2012-12-19	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**658**	mg/Kg	5	4.00

Sample: 316389 - Trench-1 5' (AH-1)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97585	Date Analyzed:	2012-12-19	Analyzed By:	AR
Prep Batch:	82663	Sample Preparation:	2012-12-19	Prepared By:	AR

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

Sample: 316390 - Trench-1 7' (AH-1)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97585	Date Analyzed:	2012-12-19	Analyzed By:	AR
Prep Batch:	82663	Sample Preparation:	2012-12-19	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**9070**	mg/Kg	10	4.00

Sample: 316391 - Trench-1 9' (AH-1)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97585	Date Analyzed:	2012-12-19	Analyzed By:	AR
Prep Batch:	82663	Sample Preparation:	2012-12-19	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**5870**	mg/Kg	10	4.00

Sample: 316392 - Trench-1 10' (AH-1)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97586	Date Analyzed:	2012-12-19	Analyzed By:	AR
Prep Batch:	82663	Sample Preparation:	2012-12-19	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1690**	mg/Kg	10	4.00

Sample: 316393 - CS-1 3' Bottom Hole (AH-1)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97586	Date Analyzed:	2012-12-19	Analyzed By:	AR
Prep Batch:	82663	Sample Preparation:	2012-12-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**73.7**	mg/Kg	5	4.00

Sample: 316394 - CS-2 1' Bottom Hole (AH-2)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97586	Date Analyzed:	2012-12-19	Analyzed By:	AR
Prep Batch:	82663	Sample Preparation:	2012-12-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**101**	mg/Kg	5	4.00

Sample: 316395 - CS-3 1' Bottom Hole (Pad)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97586	Date Analyzed:	2012-12-19	Analyzed By:	AR
Prep Batch:	82663	Sample Preparation:	2012-12-19	Prepared By:	AR

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

Sample: 316396 - CS-4 0-1' (Pasture)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97586	Date Analyzed:	2012-12-19	Analyzed By:	AR
Prep Batch:	82663	Sample Preparation:	2012-12-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**46.0**	mg/Kg	5	4.00

Sample: 316397 - CS-5 0-1' (Pasture)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97586	Date Analyzed:	2012-12-19	Analyzed By:	AR
Prep Batch:	82663	Sample Preparation:	2012-12-19	Prepared By:	AR

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

Sample: 316398 - CS-6 0-1' (Pasture)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	97586	Date Analyzed:	2012-12-19	Analyzed By:	AR
Prep Batch:	82663	Sample Preparation:	2012-12-19	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**32.2**	mg/Kg	5	4.00

Method Blanks

Method Blank (1) QC Batch: 97585

QC Batch:	97585	Date Analyzed:	2012-12-19	Analyzed By:	AR
Prep Batch:	82663	QC Preparation:	2012-12-19	Prepared By:	AR

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

Method Blank (1) QC Batch: 97586

QC Batch:	97586	Date Analyzed:	2012-12-19	Analyzed By:	AR
Prep Batch:	82663	QC Preparation:	2012-12-19	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: 97585 | Date Analyzed: 2012-12-19 | Analyzed By: AR
Prep Batch: 82663 | QC Preparation: 2012-12-19 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2620	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			2730	mg/Kg	1	2500	<3.85	109	85 - 115	4	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 97586 | Date Analyzed: 2012-12-19 | Analyzed By: AR
Prep Batch: 82663 | QC Preparation: 2012-12-19 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2700	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			2580	mg/Kg	1	2500	<3.85	103	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: 316391

QC Batch: 97585 | Date Analyzed: 2012-12-19 | Analyzed By: AR
Prep Batch: 82663 | QC Preparation: 2012-12-19 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			8060	mg/Kg	10	2500	5870	88	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			8190	mg/Kg	10	2500	5870	93	78.9 - 121	2	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: 316398

QC Batch: 97586 | Date Analyzed: 2012-12-19 | Analyzed By: AR
Prep Batch: 82663 | QC Preparation: 2012-12-19 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2830	mg/Kg	5	2500	32.2	112	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2670	mg/Kg	5	2500	32.2	106	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: 97585 | Date Analyzed: 2012-12-19 | 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	2012-12-19

Standard (CCV-2)

QC Batch: 97585 | Date Analyzed: 2012-12-19 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.9	100	85 - 115	2012-12-19

Standard (CCV-1)

QC Batch: 97586 | Date Analyzed: 2012-12-19 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.9	100	85 - 115	2012-12-19

Standard (CCV-2)

QC Batch: 97586 | Date Analyzed: 2012-12-19 | 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	2012-12-19

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

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.

1010 1111

Analysis Request of Chain of Custody Record

PAGE: 1 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: COG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-C4014476

PROJECT NAME: COG / Lighting 24 Fed Com # 1 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
316387	11-29		S		X	Trench-1 1' (AH-1)	1				X													X				
388						Trench-1 3' (AH-1)																						
389						Trench-1 5' (AH-1)																						
390						Trench-1 7' (AH-1)																						
391						Trench-1 9' (AH-1)																						
392	↓					Trench-1 10' (AH-1)																						
393	11-30					CS-1 3' Bottom Hole (AH-1)																						
394	11-30					CS-2 1' Bottom Hole (AH-2)																						
395	12-4					CS-3 1' Bottom Hole (Pad)																						
396	12-4		↓		↓	CS-4 0-1 (Pasture)	↓				↓													↓				

RELINQUISHED BY: (Signature) Robert Hamby — Date: 12-7-12 Time: 1800
RECEIVED BY: (Signature) Jason Fitch — Date: 12-11-12 Time: 0900
SAMPLED BY: (Print & Initial) Robert Grubbs Jr. — Date: 12-5-12 Time: 1300

RELINQUISHED BY: (Signature) Jason Fitch — Date: 12-11-12 Time: 1008
RECEIVED BY: (Signature) — Date: 12/11/12 Time: 10:08
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: Ronda PHONE: DATE: TIME:
RECEIVED BY: (Signature)
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 1.2°

REMARKS: Midland 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.

Analysis Request of Chain of Custody Record

PAGE: 2 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:
114-6401476	COG/Lightning 24 Fed Com #1 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
	Pal2																											
397	12-4		S		X	CS-5 0-1 Pasture	1				X													X				
398	12-4		S		X	CS-6 0-1 Pasture	1				X													X				

RELINQUISHED BY: (Signature) Robert Grubbs Jr	Date: 12-8-12 Time: 1805	RECEIVED BY: (Signature) Jesse Fitch	Date: 12-11-12 Time: 0904	SAMPLED BY: (Print & Initial) Robert Grubbs Jr	Date: 12-5-12 Time: 1305
RELINQUISHED BY: (Signature) Jesse Fitch	Date: 12-11-12 Time: 1008	RECEIVED BY: (Signature)	Date: Time: 10:08	SAMPLE SHIPPED BY: (Circle) FEDEX ~~HAND DELIVERED~~ BUS 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: Rhonda PHONE:		RECEIVED BY: (Signature) DATE: TIME:			RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 1.2°

REMARKS:

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

Summary Report

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

Report Date: September 19, 2012

Work Order: 12091209

Project Location: NM
Project Name: COG/Lightning 24 Fed. Com. #1
Project Number: 114-6401476

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
308999	AH-1 0-3 in.	soil	2012-08-30	00:00	2012-09-11
309000	AH-1 3-6 in.	soil	2012-08-30	00:00	2012-09-11
309001	AH-2 0-3 in.	soil	2012-08-30	00:00	2012-09-11
309002	AH-2 3-6 in.	soil	2012-08-30	00:00	2012-09-11

	BTEX				TPH DRO - NEW	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
308999 - AH-1 0-3 in.	<0.0200	<0.0200	<0.0200	<0.0200	<50.0 Qs	**17.2**
309000 - AH-1 3-6 in.	<0.0200	<0.0200	<0.0200	<0.0200	<50.0 Qs	<4.00
309001 - AH-2 0-3 in.	<1.00 [1]	<1.00	<1.00	**7.84**	**2460** Qs	**384**
309002 - AH-2 3-6 in.	<0.0200	<0.0200	<0.0200	<0.0200	**365** Qs	<4.00

Sample: 308999 - AH-1 0-3 in.

Param	Flag	Result	Units	RL
Chloride	Qs	**8980**	mg/Kg	5

Sample: 309000 - AH-1 3-6 in.

Param	Flag	Result	Units	RL
Chloride		**1430**	mg/Kg	5

Sample: 309001 - AH-2 0-3 in.

[1]Sample dilution due to surfactants.

Param	Flag	Result	Units	RL
Chloride		**1810**	mg/Kg	5

Sample: 309002 - AH-2 3-6 in.

Param	Flag	Result	Units	RL
Chloride		**449**	mg/Kg	5

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: September 19, 2012

Work Order: 12091209

Project Location: NM
Project Name: COG/Lightning 24 Fed. Com. #1
Project Number: 114-6401476

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
308999	AH-1 0-3 in.	soil	2012-08-30	00:00	2012-09-11
309000	AH-1 3-6 in.	soil	2012-08-30	00:00	2012-09-11
309001	AH-2 0-3 in.	soil	2012-08-30	00:00	2012-09-11
309002	AH-2 3-6 in.	soil	2012-08-30	00:00	2012-09-11

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/Lightning 24 Fed. Com. #1 were received by TraceAnalysis, Inc. on 2012-09-11 and assigned to work order 12091209. Samples for work order 12091209 were received intact 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
BTEX	S 8021B	80319	2012-09-13 at 07:34	94773	2012-09-13 at 07:34
Chloride (Titration)	SM 4500-Cl B	80440	2012-09-18 at 09:00	94929	2012-09-18 at 11:00
Chloride (Titration)	SM 4500-Cl B	80442	2012-09-18 at 09:00	94931	2012-09-18 at 11:00
TPH DRO - NEW	S 8015 D	80328	2012-09-13 at 11:00	94787	2012-09-14 at 10:06
TPH GRO	S 8015 D	80319	2012-09-13 at 07:34	94774	2012-09-13 at 07:34

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 12091209 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: 308999 - AH-1 0-3 in.

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	94773	Date Analyzed:	2012-09-13	Analyzed By:	JS
Prep Batch:	80319	Sample Preparation:	2012-09-13	Prepared By:	JS

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.14	mg/Kg	1	2.00	107	70 - 130
4-Bromofluorobenzene (4-BFB)			2.36	mg/Kg	1	2.00	118	70 - 130

Sample: 308999 - AH-1 0-3 in.

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	94929	Date Analyzed:	2012-09-18	Analyzed By:	LM
Prep Batch:	80440	Sample Preparation:	2012-09-18	Prepared By:	LM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs		**8980**	mg/Kg	100	5.00

Sample: 308999 - AH-1 0-3 in.

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	94787	Date Analyzed:	2012-09-14	Analyzed By:	CM
Prep Batch:	80328	Sample Preparation:	2012-09-13	Prepared By:	CM

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			98.6	mg/Kg	1	100	99	70 - 130

Sample: 308999 - AH-1 0-3 in.

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	94774	Date Analyzed:	2012-09-13	Analyzed By:	JS
Prep Batch:	80319	Sample Preparation:	2012-09-13	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**17.2**	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.26	mg/Kg	1	2.00	113	70 - 130
4-Bromofluorobenzene (4-BFB)			2.50	mg/Kg	1	2.00	125	70 - 130

Sample: 309000 - AH-1 3-6 in.

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	94773	Date Analyzed:	2012-09-13	Analyzed By:	JS
Prep Batch:	80319	Sample Preparation:	2012-09-13	Prepared By:	JS

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)			2.06	mg/Kg	1	2.00	103	70 - 130
4-Bromofluorobenzene (4-BFB)			2.36	mg/Kg	1	2.00	118	70 - 130

Sample: 309000 - AH-1 3-6 in.

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	94931	Date Analyzed:	2012-09-18	Analyzed By:	LM
Prep Batch:	80442	Sample Preparation:	2012-09-18	Prepared By:	LM

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**1430**		mg/Kg	50	5.00

Sample: 309000 - AH-1 3-6 in.

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	94787	Date Analyzed:	2012-09-14	Analyzed By:	CM
Prep Batch:	80328	Sample Preparation:	2012-09-13	Prepared By:	CM

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			106	mg/Kg	1	100	106	70 - 130

Sample: 309000 - AH-1 3-6 in.

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	94774	Date Analyzed:	2012-09-13	Analyzed By:	JS
Prep Batch:	80319	Sample Preparation:	2012-09-13	Prepared By:	JS

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.24	mg/Kg	1	2.00	112	70 - 130
4-Bromofluorobenzene (4-BFB)			2.12	mg/Kg	1	2.00	106	70 - 130

Sample: 309001 - AH-2 0-3 in.

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	94773	Date Analyzed:	2012-09-13	Analyzed By:	JS
Prep Batch:	80319	Sample Preparation:	2012-09-13	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene [1]	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	**7.84**	mg/Kg	50	0.0200

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		3.21	mg/Kg	50	2.00	160	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		1.25	mg/Kg	50	2.00	62	70 - 130

Sample: 309001 - AH-2 0-3 in.

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	94931	Date Analyzed:	2012-09-18	Analyzed By:	LM
Prep Batch:	80442	Sample Preparation:	2012-09-18	Prepared By:	LM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1810**	mg/Kg	50	5.00

Sample: 309001 - AH-2 0-3 in.

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	94787	Date Analyzed:	2012-09-14	Analyzed By:	CM
Prep Batch:	80328	Sample Preparation:	2012-09-13	Prepared By:	CM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Qs	1	**2460**	mg/Kg	10	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		446	mg/Kg	10	100	446	70 - 130

Sample: 309001 - AH-2 0-3 in.

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	94774	Date Analyzed:	2012-09-13	Analyzed By:	JS
Prep Batch:	80319	Sample Preparation:	2012-09-13	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
GRO		1		**384**	mg/Kg	50	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.86	mg/Kg	50	2.00	93	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	26.8	mg/Kg	50	2.00	1340	70 - 130

Sample: 309002 - AH-2 3-6 in.

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	94773	Date Analyzed:	2012-09-13	Analyzed By:	JS
Prep Batch:	80319	Sample Preparation:	2012-09-13	Prepared By:	JS

Parameter	Flag	Cert	Result	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)			2.18	mg/Kg	1	2.00	109	70 - 130
4-Bromofluorobenzene (4-BFB)			2.30	mg/Kg	1	2.00	115	70 - 130

Sample: 309002 - AH-2 3-6 in.

Laboratory:	Lubbock				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	94931	Date Analyzed:	2012-09-18	Analyzed By:	LM
Prep Batch:	80442	Sample Preparation:	2012-09-18	Prepared By:	LM

continued ...

sample 309002 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**449**	mg/Kg	20	5.00

Sample: 309002 - AH-2 3-6 in.

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	94787	Date Analyzed:	2012-09-14	Analyzed By:	CM
Prep Batch:	80328	Sample Preparation:	2012-09-13	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	1	**365**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			126	mg/Kg	1	100	126	70 - 130

Sample: 309002 - AH-2 3-6 in.

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	94774	Date Analyzed:	2012-09-13	Analyzed By:	JS
Prep Batch:	80319	Sample Preparation:	2012-09-13	Prepared By:	JS

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.29	mg/Kg	1	2.00	114	70 - 130
4-Bromofluorobenzene (4-BFB)			2.24	mg/Kg	1	2.00	112	70 - 130

Method Blanks

Method Blank (1) QC Batch: 94773

QC Batch: 94773 | Date Analyzed: 2012-09-13 | Analyzed By: JS
Prep Batch: 80319 | QC Preparation: 2012-09-13 | Prepared By: JS

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.02	mg/Kg	1	2.00	101	70 - 130
4-Bromofluorobenzene (4-BFB)			1.99	mg/Kg	1	2.00	100	70 - 130

Method Blank (1) QC Batch: 94774

QC Batch: 94774 | Date Analyzed: 2012-09-13 | Analyzed By: JS
Prep Batch: 80319 | QC Preparation: 2012-09-13 | Prepared By: JS

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.18	mg/Kg	1	2.00	109	70 - 130
4-Bromofluorobenzene (4-BFB)			1.99	mg/Kg	1	2.00	100	70 - 130

Method Blank (1) QC Batch: 94787

QC Batch: 94787 | Date Analyzed: 2012-09-14 | Analyzed By: CM
Prep Batch: 80328 | QC Preparation: 2012-09-13 | Prepared By: CM

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<15.3	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			108	mg/Kg	1	100	108	70 - 130

Method Blank (1) QC Batch: 94929

QC Batch: 94929 | Date Analyzed: 2012-09-18 | Analyzed By: LM
Prep Batch: 80440 | QC Preparation: 2012-09-18 | Prepared By: LM

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.05	mg/Kg	5

Method Blank (1) QC Batch: 94931

QC Batch: 94931 | Date Analyzed: 2012-09-18 | Analyzed By: LM
Prep Batch: 80442 | QC Preparation: 2012-09-18 | Prepared By: LM

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.05	mg/Kg	5

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 94773 | Date Analyzed: 2012-09-13 | Analyzed By: JS
Prep Batch: 80319 | QC Preparation: 2012-09-13 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.91	mg/Kg	1	2.00	<0.00365	96	75.4 - 120
Toluene		1	1.94	mg/Kg	1	2.00	<0.00816	97	74.9 - 120
Ethylbenzene		1	2.09	mg/Kg	1	2.00	<0.00560	104	78.1 - 120
Xylene		1	6.26	mg/Kg	1	6.00	<0.00460	104	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	1.94	mg/Kg	1	2.00	<0.00365	97	75.4 - 120	2	20
Toluene		1	1.96	mg/Kg	1	2.00	<0.00816	98	74.9 - 120	1	20
Ethylbenzene		1	2.11	mg/Kg	1	2.00	<0.00560	106	78.1 - 120	1	20
Xylene		1	6.31	mg/Kg	1	6.00	<0.00460	105	77.3 - 120	1	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.85	1.95	mg/Kg	1	2.00	92	98	70 - 130
4-Bromofluorobenzene (4-BFB)	1.94	1.98	mg/Kg	1	2.00	97	99	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 94774 | Date Analyzed: 2012-09-13 | Analyzed By: JS
Prep Batch: 80319 | QC Preparation: 2012-09-13 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	20.5	mg/Kg	1	20.0	<0.359	102	68.9 - 120

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	20.6	mg/Kg	1	20.0	<0.359	103	68.9 - 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)	2.02	2.02	mg/Kg	1	2.00	101	101	70 - 130
4-Bromofluorobenzene (4-BFB)	2.07	2.02	mg/Kg	1	2.00	104	101	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 94787 | Date Analyzed: 2012-09-14 | Analyzed By: CM
Prep Batch: 80328 | QC Preparation: 2012-09-13 | Prepared By: CM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	243	mg/Kg	1	250	<15.3	97	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	237	mg/Kg	1	250	<15.3	95	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
n-Tricosane	106	104	mg/Kg	1	100	106	104	70 - 130

Matrix Spike (xMS-1) Spiked Sample:

QC Batch: 94773 | Date Analyzed: 2012-09-13 | Analyzed By: JS
Prep Batch: 80319 | QC Preparation: 2012-09-13 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.97	mg/Kg	1	2.00	<0.00365	98	37.6 - 142

continued ...

matrix spikes continued ...

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Toluene		1	2.16	mg/Kg	1	2.00	<0.00816	108	38.6 - 153
Ethylbenzene		1	2.38	mg/Kg	1	2.00	<0.00560	119	36.7 - 172
Xylene		1	7.08	mg/Kg	1	6.00	<0.00460	118	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	2.09	mg/Kg	1	2.00	<0.00365	104	37.6 - 142	6	20
Toluene		1	2.32	mg/Kg	1	2.00	<0.00816	116	38.6 - 153	7	20
Ethylbenzene		1	2.54	mg/Kg	1	2.00	<0.00560	127	36.7 - 172	6	20
Xylene		1	7.61	mg/Kg	1	6.00	<0.00460	127	36.7 - 173	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
Trifluorotoluene (TFT)	2.12	2.18	mg/Kg	1	2	106	109	70 - 130
4-Bromofluorobenzene (4-BFB)	2.18	2.29	mg/Kg	1	2	109	114	70 - 130

Matrix Spike (MS-1) Spiked Sample: 309005

QC Batch: 94774 | Date Analyzed: 2012-09-13 | Analyzed By: JS
Prep Batch: 80319 | QC Preparation: 2012-09-13 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	21.3	mg/Kg	1	20.0	<0.359	106	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	20.0	mg/Kg	1	20.0	<0.359	100	68.9 - 120	6	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.08	1.90	mg/Kg	1	2	104	95	70 - 130
4-Bromofluorobenzene (4-BFB)	2.40	2.29	mg/Kg	1	2	120	114	70 - 130

Matrix Spike (MS-1) Spiked Sample: 308982

QC Batch: 94787 | Date Analyzed: 2012-09-14 | Analyzed By: CM
Prep Batch: 80328 | QC Preparation: 2012-09-13 | Prepared By: CM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	Qs	Qs	1	21800	mg/Kg	10	250	19100	1080	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	Qs	Qs	1	20100	mg/Kg	10	250	19100	400	70 - 130	8	20

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

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	Qsr	Qsr	621	590	mg/Kg	10	100	621	590	70 - 130

Matrix Spike (MS-1) Spiked Sample: 308999

QC Batch: 94929 | Date Analyzed: 2012-09-18 | Analyzed By: LM
Prep Batch: 80440 | QC Preparation: 2012-09-18 | Prepared By: LM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	Qs	Qs	11100	mg/Kg	500	500	8985.51	423	80 - 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
Chloride			11600	mg/Kg	500	500	8985.51	523	80 - 120	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: 309312

QC Batch: 94931 | Date Analyzed: 2012-09-18 | Analyzed By: LM
Prep Batch: 80442 | QC Preparation: 2012-09-18 | Prepared By: LM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			511	mg/Kg	10	500	<30.5	102	80 - 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
Chloride			506	mg/Kg	10	500	<30.5	101	80 - 120	1	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: 94773 | Date Analyzed: 2012-09-13 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0998	100	80 - 120	2012-09-13
Toluene		1	mg/kg	0.100	0.102	102	80 - 120	2012-09-13
Ethylbenzene		1	mg/kg	0.100	0.108	108	80 - 120	2012-09-13
Xylene		1	mg/kg	0.300	0.322	107	80 - 120	2012-09-13

Standard (CCV-2)

QC Batch: 94773 | Date Analyzed: 2012-09-13 | Analyzed By: JS

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	2012-09-13
Toluene		1	mg/kg	0.100	0.101	101	80 - 120	2012-09-13
Ethylbenzene		1	mg/kg	0.100	0.107	107	80 - 120	2012-09-13
Xylene		1	mg/kg	0.300	0.320	106	80 - 120	2012-09-13

Standard (CCV-3)

QC Batch: 94773 | Date Analyzed: 2012-09-13 | Analyzed By: JS

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	2012-09-13
Toluene		1	mg/kg	0.100	0.0994	99	80 - 120	2012-09-13
Ethylbenzene		1	mg/kg	0.100	0.105	105	80 - 120	2012-09-13
Xylene		1	mg/kg	0.300	0.310	103	80 - 120	2012-09-13

Standard (CCV-1)

QC Batch: 94774 | Date Analyzed: 2012-09-13 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.05	105	80 - 120	2012-09-13

Standard (CCV-2)

QC Batch: 94774 | Date Analyzed: 2012-09-13 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.974	97	80 - 120	2012-09-13

Standard (CCV-3)

QC Batch: 94774 | Date Analyzed: 2012-09-13 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.948	95	80 - 120	2012-09-13

Standard (CCV-1)

QC Batch: 94787 | Date Analyzed: 2012-09-14 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	258	103	80 - 120	2012-09-14

Standard (CCV-2)

QC Batch: 94787 | Date Analyzed: 2012-09-14 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	240	96	80 - 120	2012-09-14

Standard (CCV-3)

QC Batch: 94787 Date Analyzed: 2012-09-14 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	220	88	80 - 120	2012-09-14

Standard (ICV-1)

QC Batch: 94929 Date Analyzed: 2012-09-18 Analyzed By: LM

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-09-18

Standard (CCV-1)

QC Batch: 94929 Date Analyzed: 2012-09-18 Analyzed By: LM

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	2012-09-18

Standard (ICV-1)

QC Batch: 94931 Date Analyzed: 2012-09-18 Analyzed By: LM

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.8	100	85 - 115	2012-09-18

Standard (CCV-1)

QC Batch: 94931 Date Analyzed: 2012-09-18 Analyzed By: LM

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	2012-09-18

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

Standard Flags

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

Result Comments

1 Sample dilution due to surfactants.

Attachments

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

1209 1209

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.: 114-6401476

PROJECT NAME: COG- Lightning 24 Fed Com #1

ANALYSIS REQUEST (Circle or Specify Method No.)

PRESERVATIVE METHOD

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	BTEX 8021B	TPH TX1005 (Ext. to C35) 8015 MOD.	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
308999	8/30		S		X	AH-1 0-3"	1				X		X	X											X				
000	8/30		S		X	AH-1 3"-6"	1				X		X	X											X				
001	8/30		S		X	AH-2 0-3"	1				X		X	X											X				
002	8/30		S		X	AH-2 3"-6"	1				X		X	X											X				

RELINQUISHED BY: (Signature) [signature] Date: 9-11-12 Time: 1645

RECEIVED BY: (Signature) A Hernandez Date: 9/11/12 Time: 16:45

SAMPLED BY: (Print & Initial) Marcus Kujawski / Ryan Rizzi Date: Time:

RELINQUISHED BY: (Signature) J. Hernandez Date: 9/12/12 Time: 15:00

RECEIVED BY: (Signature) Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS AIRBILL #: [illegible] HAND DELIVERED UPS ZP1139713 OTHER: Lonestar

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) [signature] Trace Analysis
DATE: 9-13-12 TIME: 9:15

SAMPLE CONDITION WHEN RECEIVED: 2.1 3.1/3.1 AH

REMARKS: Lubbock area

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