HOBBS OCD

PJXK1535545413

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

JUL 01 2011

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

RECEIVED

4048 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 1300 Midland, Texas 79701**	Telephone No. **(432) 685-4332**
Facility Name MC Federal #4	Facility Type **Well**

Surface Owner: Federal	Mineral Owner	Lease No. API#30-025-34933

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
L	21	17S	32E	2310	South	330	West	Lea

Latitude N 32.819197° **Longitude** W 103.77899°

NATURE OF RELEASE

Type of Release: Produced Fluids	Volume of Release 9 bbls	Volume Recovered 8 bbls
Source of Release Flowline	Date and Hour of Occurrence 5/23/10	Date and Hour of Discovery 5/23/10
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

The cause of the release was due to a ruptured flowline. The flowline was immediately repaired and put back into service.

Describe Area Affected and Cleanup Action Taken.*

Tetra Tech inspected site and collected samples to define spills extent. Soil that exceeded RRAL was removed and hauled away for proper disposal. Site was then brought up to surface grade with clean backfill material. Tetra Tech prepared closure report and submitted to NMOCD for review.

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

Signature: Patrick L. Ellis	OIL CONSERVATION DIVISION	
Printed Name: Patrick L. Ellis	Approved by District Supervisor:	
Title: Environmental and Safety Supervisor	Approval Date:	Expiration Date:
E-mail Address: pellis@conchoresources.com	Conditions of Approval:	Attached ☐
Date: 6-2-11 Phone: (432) 686-3023		

* Attach Additional Sheets If Necessary

District I
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State of New Mexico
Energy Minerals and Natural Resources

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

HOBBS OCD
JUL 01 2011
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Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Repor

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	MC FEDERAL #4	Facility Type	Well

Surface Owner: Federal	Mineral Owner	Lease No. API# 30-025-34933

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
L	21	17S	32E	2310	FSL	330	FWL	Lea

Latitude 32.819197 **Longitude** 103.77899

NATURE OF RELEASE

Type of Release: Produced Fluids	Volume of Release: 9bbls	Volume Recovered: 8bbls
Source of Release: Flowline	Date and Hour of Occurrence: 5/23/2010	Date and Hour of Discovery: 5/23/2010
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The cause of the release was due to a ruptured flowline. The flowline was immediately repaired and put back into service.

Describe Area Affected and Cleanup Action Taken.*

The release from the flowline initially released 9bbls of produced fluids and we were able to recover 8bbls with a vacuum truck. The release caused a 4'x4' spill area on the lease road by the flowline, and a 10'x20' overspray area in the pasture to the northwest. Any produced water from the release will have an estimated chloride content of 135,548.9 mg/l. Any oil released from the spill has a oil gravity of 38. (The closest well location to the release is the MC FEDERAL #16, UNIT E, SEC.21-T17S-R32E, 1650 FNL 530 FWL, LEA COUNTY, NM, NMLC-029509B, API# 30-025-38739) 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 for approval prior to any significant remediation.

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: 05/25/2010 Phone: 432-212-2399	

* Attach Additional Sheets If Necessary

SITE INFORMATION

Report Type: Work Plan

General Site Information:		
Site:	MC Federal #4	
Company:	COG Operating LLC	
Section, Township and Range	T-17S R-32E Sec. 21 Unit L	
Lease Number:	30-025-34933	
County:	Lea County	
GPS:	32.819197° N	103.77899° W
Surface Owner:	Federal	
Mineral Owner:		
Directions:	From the intersection of Conoco Road and CR-126 (South of Maljamar, NM), travel west on Conoco road 0.3 miles, turn right 0.3 miles, turn left 0.5 miles to location.	

Release Data:	
Date Released:	5/23/2010
Type Release:	Produced Water
Source of Contamination:	Flowline failure
Fluid Released:	9 bbls
Fluids Recovered:	8 bbls

Official Communication:			
Name:	Pat Ellis		Kim Dorey
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) 631-0348
Fax:	(432) 684-7137		
Email:	pellis@conchoresources.com		kim.dorey@tetratech.com

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

Acceptable Soil RRALs (mg/kg)		
Benzene	*Total BTEX*	*TPH*
10	50	5,000

TETRA TECH

January 12, 2011

Mr. Geoffrey Leking
Environmental Engineer Specialist
Oil Conservation Division, District 1
1625 North French Drive
Hobbs, New Mexico 88240

Re: Work Plan for the COG Operating LLC., MC Federal #4 Flowline, Unit L, Section 21, Township 17 South, Range 32 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the MC Federal #4 Flow line, Unit L, Section 21, Township 17 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.819197°, W 103.77899°. 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 May 23, 2010, and released approximately nine (9) barrels of produced water due to flow line failure. To alleviate the problem, COG personnel repaired the flow line. Eight (8) barrels of standing fluids were recovered. The spill measured approximately 10' x 25' and was contained in a native low-lying area north of the lease road in the vicinity of the flow lines. The initial C-141 form is enclosed in Appendix C.

Groundwater

The United States Geological Survey (USGS) Well Reports did not list any wells in Section 21. According to the NMOCD groundwater map, the average depth to groundwater in this area is greater than 175' below surface. The groundwater data is shown in Appendix A.

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 5,000 mg/kg.

Soil Assessment and Analytical Results

On August 17, 2010, Tetra Tech personnel inspected and sampled the spill area, which measured approximately 10' x 25'. Two (2) auger holes (AH-1 and AH-2) were installed using a stainless steel hand auger to assess the impacted soils. Select 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 B. The results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all of the submitted samples were below the RRAL for BTEX and TPH. Elevated chloride concentrations were detected in AH-1 and AH-2, with bottom hole samples of 4,540 mg/kg (3-3.5') and 2,200 mg/kg (2-2.5'), respectively. The spill was not vertically defined.

In order to delineate the chloride concentrations impact, a soil boring was installed utilizing an air rotary drilling rig. On November 11, 2010, Tetra Tech personnel supervised the installation of a borehole (BH-1) between AH-1 and AH-2 utilizing an air rotary drilling rig. Soil samples were collected to a depth of 25' to define the impact of the chloride concentrations. Referring to Table 1, chloride concentrations decreased with depth to 287 mg/kg at 7' bgs.

Work Plan

Based on the results, the spill did show a shallow impact to the soils. Tetra Tech proposes to supervise the removal of impacted to a depth of approximately 4' to 5' below surface. The proposed excavation depth is shown in Table 1. Once the areas are excavated to the appropriate depth,

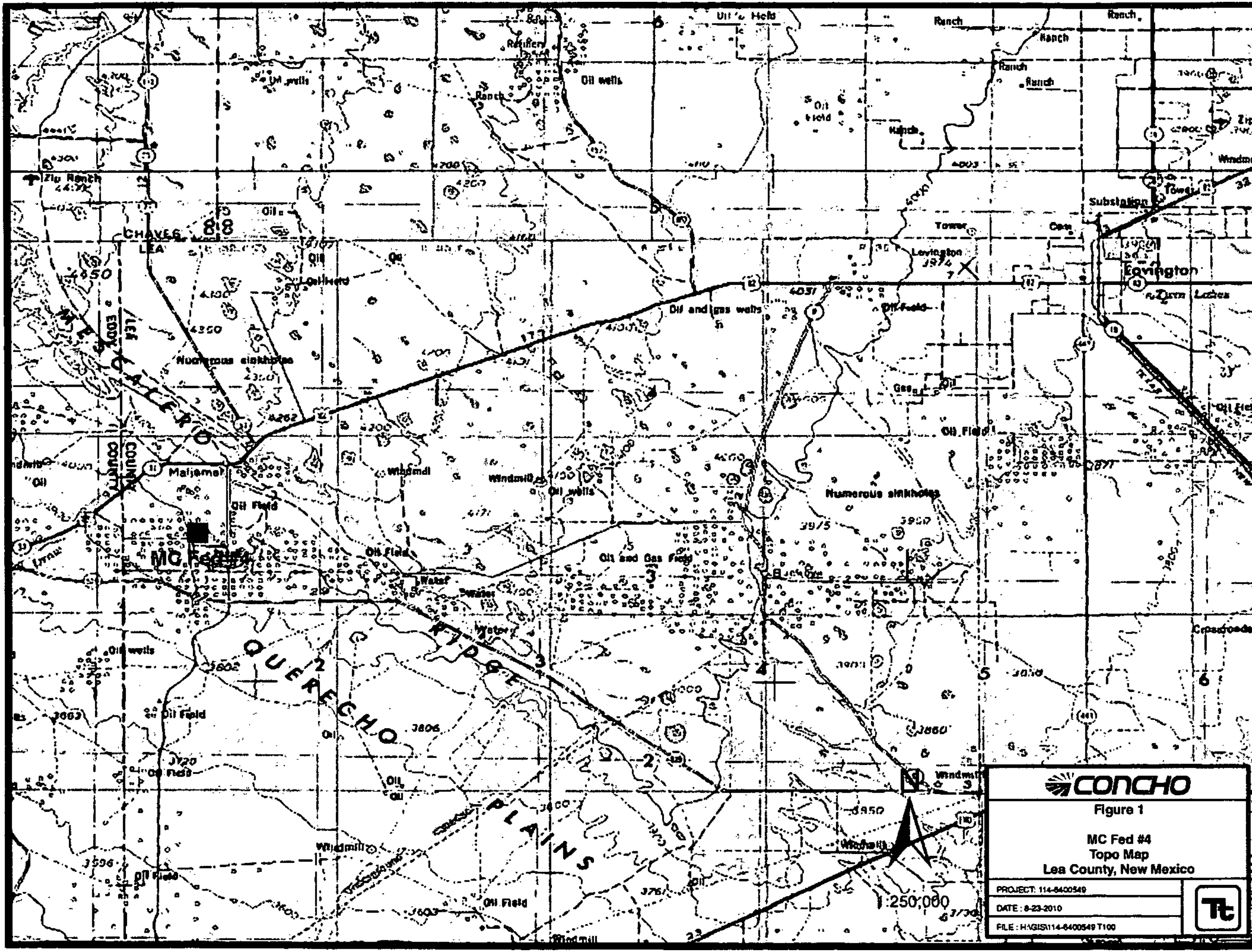
the excavation will be backfilled with clean soil. Since the impacted area is in the native sand dunes, the proposed excavation depths may not be reached due to wall cave ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safely concerns. As such, Tetra Tech will excavate the soils to the maximum extent practicable. Upon completion, a final closure report will be submitted to the NMOCD.

If you have any questions or require any additional information regarding this work plan, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Kim Dorey
Staff Geologist

cc: Pat Ellis – COG
cc: Terry Gregston – BLM
cc: Jim Amos - BLM

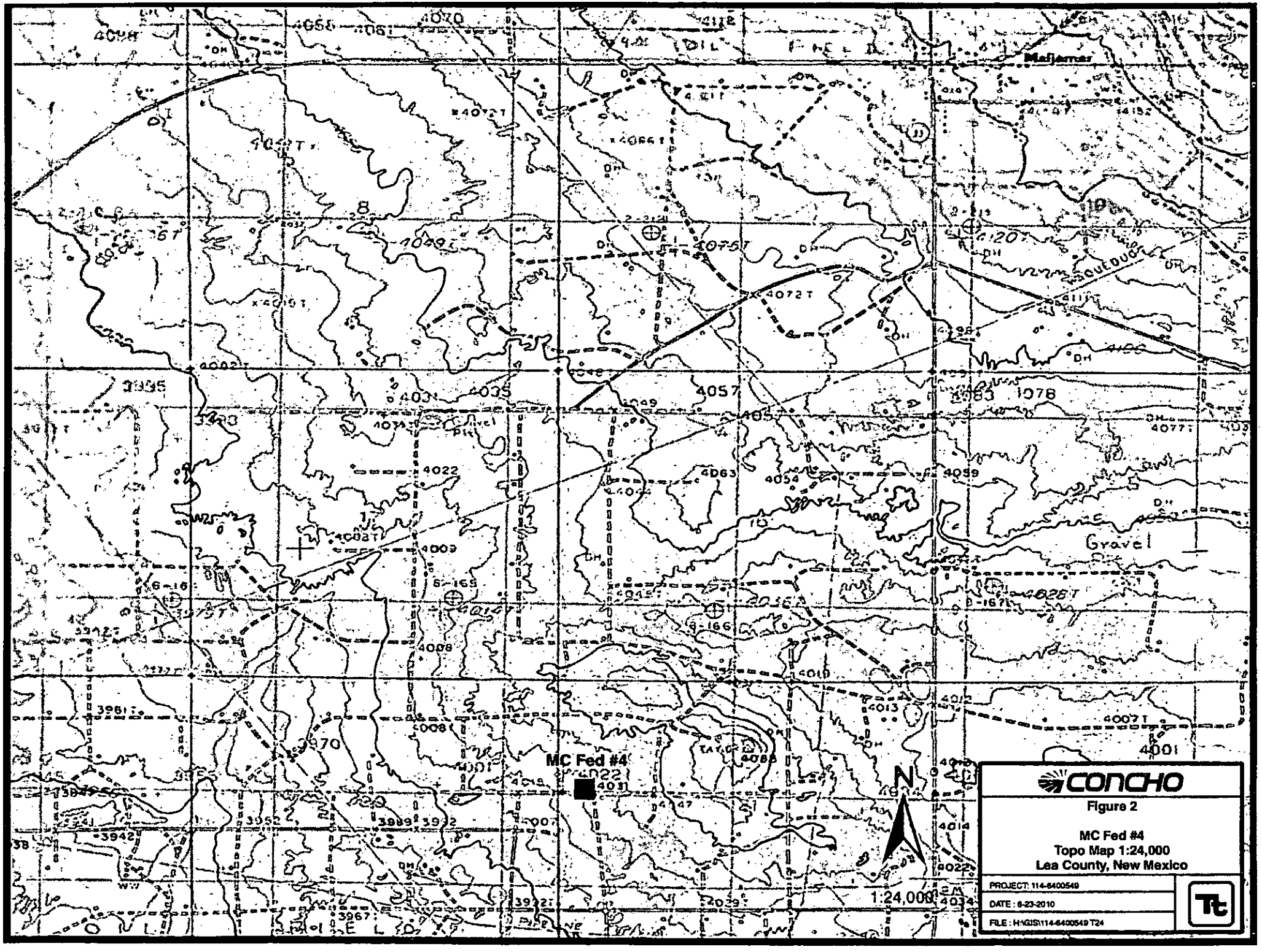


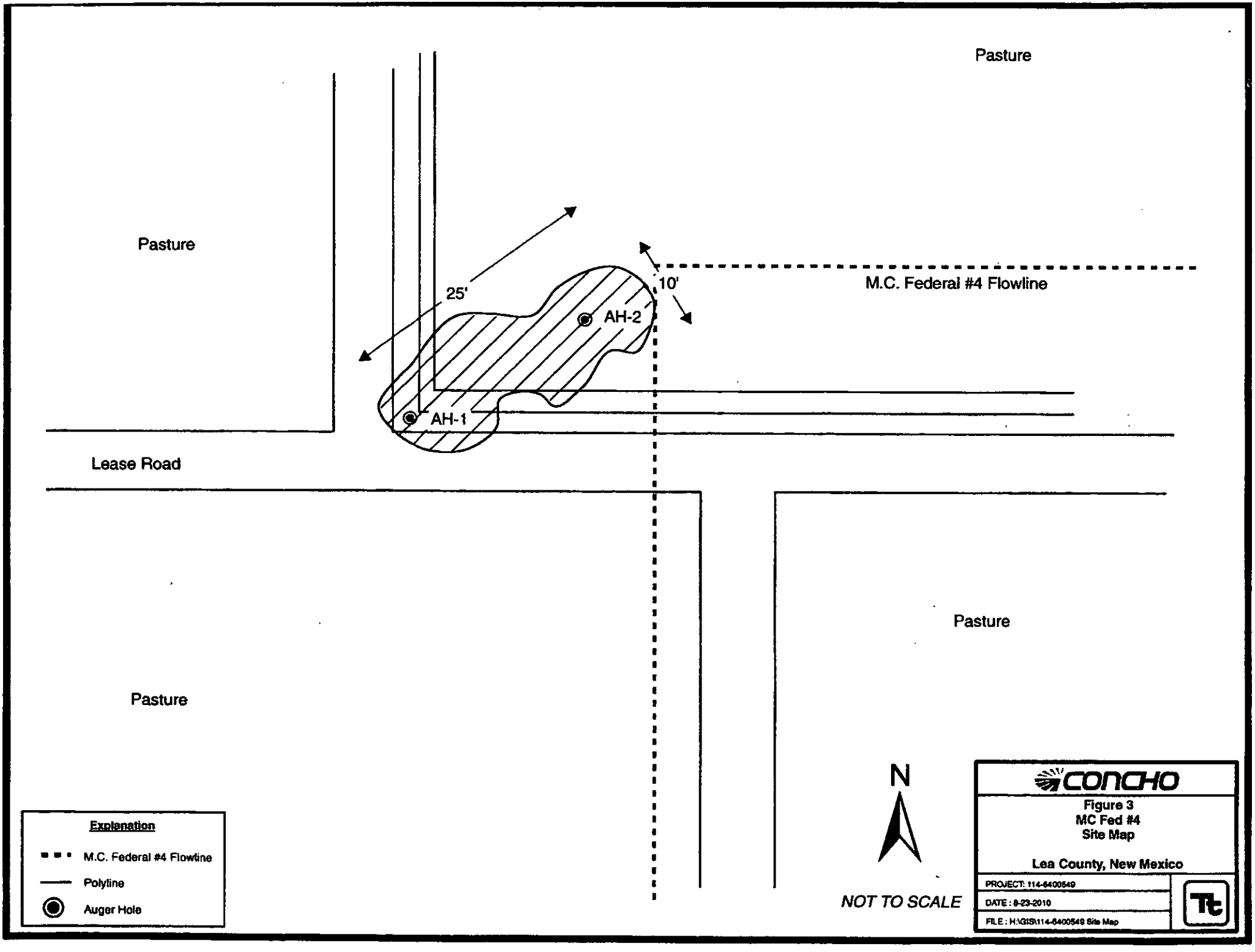
CONCHO

Figure 1

MC Fed #4
Topo Map
Lea County, New Mexico

PROJECT: 114-6400549
DATE: 8-23-2010
FILE: H:\GIS\114-6400549 T100


MC Fed #4
N
1:24,000
CONCHO
Figure 2
MC Fed #4
Topo Map 1:24,000
Lea County, New Mexico
PROJECT: 114-6400549
DATE : 8-23-2010
FILE : H:\GIS\114-6400549 T24


Pasture
Pasture
25'
10'
M.C. Federal #4 Flowline
AH-2
AH-1
Lease Road
Pasture
Pasture
Explanation
M.C. Federal #4 Flowline
Polyline
Auger Hole
N
NOT TO SCALE
CONCHO
Figure 3
MC Fed #4
Site Map
Lea County, New Mexico
PROJECT: 114-6400549
DATE : 8-23-2010
FILE : H:\GIS\114-6400549 Site Map

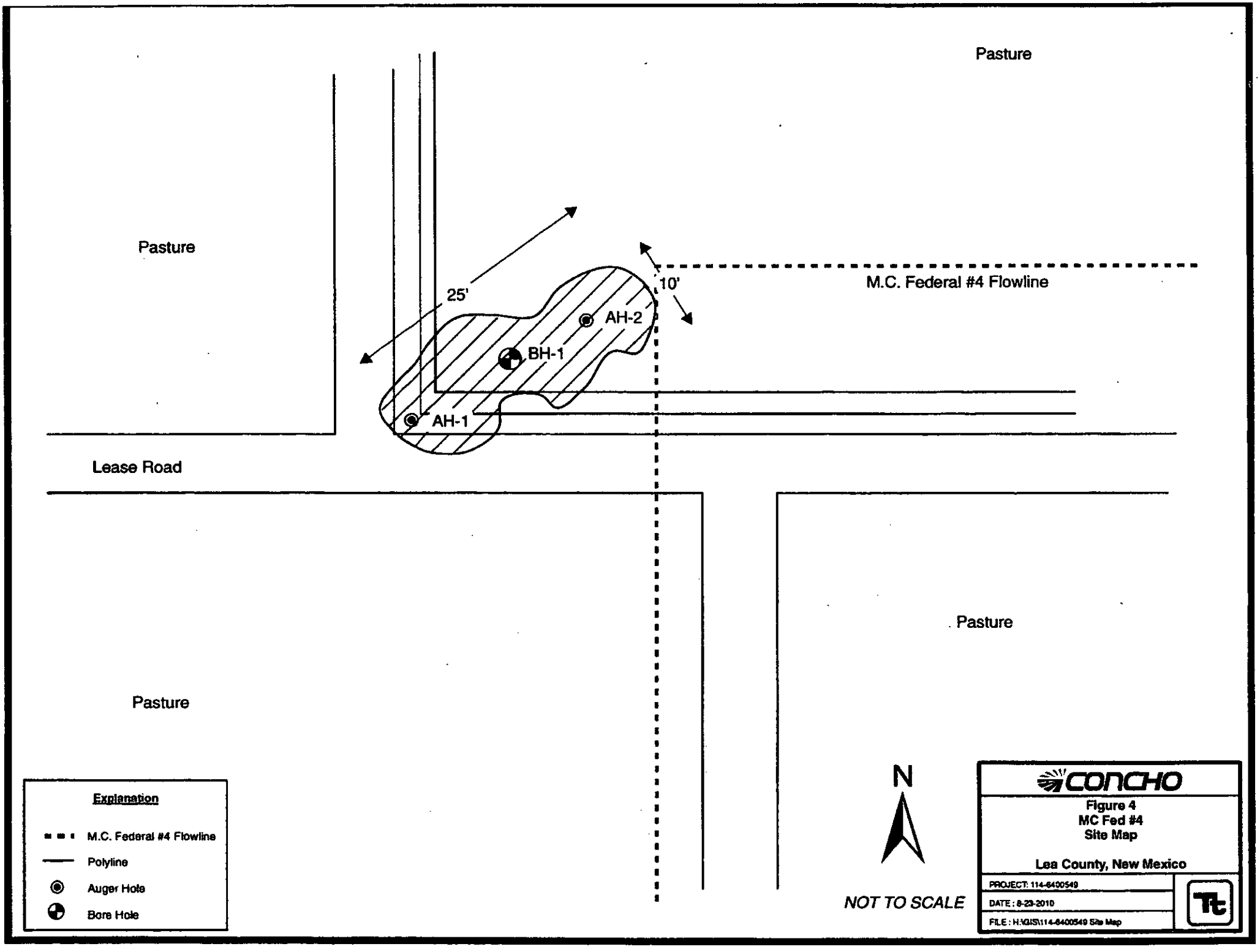

Pasture
Pasture
25'
10'
M.C. Federal #4 Flowline
AH-2
BH-1
AH-1
Lease Road
Pasture
Pasture
Explanation
M.C. Federal #4 Flowline
Polyline
Auger Hole
Bore Hole
N
NOT TO SCALE
CONCHO
Figure 4
MC Fed #4
Site Map
Lea County, New Mexico
PROJECT: 114-6400549
DATE : 8-23-2010
FILE : H:\GIS\114-6400549 Site Map

Table 1
COG Operating LLC.
MC Federal #4
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	DRO	GRO	Total					
AH-1	8/17/10	0-1'	N/A	X		<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	341
	"	1-1.5'	N/A	X		-	-	-	-	-	-	-	239
	"	2-2.5'	N/A	X		-	-	-	-	-	-	-	2,820
	"	3-3.5'	N/A	X		-	-	-	-	-	-	-	4,540
SB-1	11/11/10	0-1'	N/A	X		-	-	-	-	-	-	-	256
	"	3'	N/A	X		-	-	-	-	-	-	-	271
	"	5'	N/A	X		-	-	-	-	-	-	-	1,310
	"	7'	N/A	X		-	-	-	-	-	-	-	287
	"	10'	N/A	X		-	-	-	-	-	-	-	445
	"	15'	N/A	X		-	-	-	-	-	-	-	312
	"	20'	N/A	X		-	-	-	-	-	-	-	<200
	"	25'	N/A	X		-	-	-	-	-	-	-	<200
AH-2	8/17/10	0-1'	N/A	X		-	-	-	-	-	-	-	266
	"	1-1.5'	N/A	X		-	-	-	-	-	-	-	789
	"	2-2.5'	N/A	X		-	-	-	-	-	-	-	2,200

BEB Below Excavation Bottom

(--) Not Analyzed

☐ Proposed excavation depths

Water Well Data
Average Depth to Groundwater (ft)
COG - MC Federal #4 Tank Battery
Lea County, New Mexico

16 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12 268
18	17	16	15	14	13 113
19	20	21	22	23	24
30	29	28	27	26	25
31 290	32	33	34	35	36

17 South 31 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	34 271	35	36

18 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12 400
18	17	16	15	14 317	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35 261	36

16 South 32 East

6	5	4	3 65	2 265	1 265
7	8	9	10	11	12 215
18	17	16 221	15	14	13 215
19 220	20	21 210	22	23 210	24
30	29	28	27	26 243	25
31	32	33	34	35	36 260

17 South 32 East

6	5	4 82	3 175	2 60	1 225
7	8	9	10	11 70 88	12 120
18	17	16	15	14	13
19	20	21 SITE	22	23	24
30 180	29	28	27	26	25
31	32	33	34	35	36

18 South 32 East

6	5	4 65	3	2	1
7 460 82	8	9	10	11	12
18	17	16 84	15	14	13
19	20 164	21	22 429	23	24
30	29	28	27	26	25
31	32	33	34 117	35	36

16 South 33 East

6	5 180	4 150	3 130	2 148	1 142
7	8 200	9	10 182	11	12 142
18	17 182	16 180	15 175	14 143	13 110
19	20	21	22	23 120	24
30 191	29	28 190	27 130	26 143	25 120
31 190	32 168	33	34 160	35	36

17 South 33 East

6 90	5	4	3 155	2 158	1 150
7 167	8 173	9 161	10	11	12
18 188	17 180	16	15	14	13 165
19	20 190	21	22	23 115	24
30	29	28	27	26	25
31	32	33	34	35 155	36

18 South 33 East

6	5	4	3	2	1
7	8 100	9	10 82	11	12 143 140
18	17 85	16	15	14 36	13 60
19 >140	20	21	22	23	24 195
30 35	29	28	27	26	25
31	32	33	34 177	35	36

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

Summary Report

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

Report Date: August 27, 2010

Work Order: 10081830

Project Location: Lea County, NM
Project Name: COG/MC Fed. #4 (Flowline)
Project Number: 114-6400549

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
241709	AH-1 0-1'	soil	2010-08-17	00:00	2010-08-18
241710	AH-1 1-1.5'	soil	2010-08-17	00:00	2010-08-18
241711	AH-1 2-2.5'	soil	2010-08-17	00:00	2010-08-18
241712	AH-1 3-3.5'	soil	2010-08-17	00:00	2010-08-18
241713	AH-2 0-1'	soil	2010-08-17	00:00	2010-08-18
241714	AH-2 1-1.5'	soil	2010-08-17	00:00	2010-08-18
241715	AH-2 2-2.5'	soil	2010-08-17	00:00	2010-08-18

	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)
241709 - AH-1 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00

Sample: 241709 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**341**	mg/Kg	4.00

Sample: 241710 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**239**	mg/Kg	4.00

Sample: 241711 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**2820**	mg/Kg	4.00

Sample: 241712 - AH-1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**4540**	mg/Kg	4.00

Sample: 241713 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		**266**	mg/Kg	4.00

Sample: 241714 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**789**	mg/Kg	4.00

Sample: 241715 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**2200**	mg/Kg	4.00

SITE INFORMATION

Report Type: Closure Report

General Site Information:		
Site:	MC Federal #4	
Company:	COG Operating LLC	
Section, Township and Range	T-17S R-32E Sec. 21 Unit L	
Lease Number:	30-025-34933	
County:	Lea County. New Mexico	
GPS:	32.819197° N	103.77899° W
Surface Owner:	Federal	
Mineral Owner:		
Directions:	From the intersection of Conoc Road and CR-126 (South of Maljamar, NM), travel west on Conoco road 0.3 miles, turn right 0.3 miles, turn left 0.5 miles to location.	

Release Data:	
Date Released:	5/23/2010
Type Release:	Produced Water
Source of Contamination:	Flowline failure
Fluid Released:	9 bbls
Fluids Recovered:	8 bbls

Official Communication:			
Name:	Pat Ellis		Aaron Hale
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) 631-0348
Fax:	(432) 684-7137		
Email:	pellis@conchoresources.com		aaron.hale@tetratech.com

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

Acceptable Soil RRAL (mg/kg)		
Benzene	***Total BTEX***	***TPH***
10	50	5,000

HOBBS OCD

JUL 01 2011

RECEIVED

TETRA TECH

May 25, 2011

HOBBS OCD

JUL 01 2011

RECEIVED

Mr. Geoffrey Leking
Environmental Engineer Specialist
Oil Conservation Division, District 1
1625 North French Drive
Hobbs, New Mexico 88240

Re: Closure Report for the COG Operating LLC., MC Federal #4 Flowline, Unit L, Section 21, Township 17 South, Range 32 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the MC Federal #4 Flow line, Unit L, Section 21, Township 17 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.819197°, W 103.77899°. 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 May 23, 2010, and released approximately nine (9) barrels of produced water due to flow line failure. To alleviate the problem, COG personnel repaired the flow line. Eight (8) barrels of standing fluids were recovered. The spill measured approximately 10' x 25' and was contained in a native low-lying area north of the lease road in the vicinity of the flow lines. The initial C-141 form is enclosed in Appendix C.

Groundwater

The United States Geological Survey (USGS) Well Reports did not list any wells in Section 21. According to the NMOCD groundwater map, the average depth to groundwater in this area is greater than 175' below surface. The groundwater data is shown in Appendix 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 5,000 mg/kg.

Soil Assessment and Analytical Results

On August 17, 2010, Tetra Tech personnel inspected and sampled the spill area, which measured approximately 10' x 25'. Two (2) auger holes (AH-1 and AH-2) were installed using a stainless steel hand auger to assess the impacted soils. Select 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 B. The results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all of the submitted samples were below the RRAL for BTEX and TPH. Elevated chloride concentrations were detected in AH-1 and AH-2, with bottom hole samples of 4,540 mg/kg (3-3.5') and 2,200 mg/kg (2-2.5'), respectively. The spill was not vertically defined.

In order to delineate the chloride concentrations impact, a soil boring was installed utilizing an air rotary drilling rig. On November 11, 2010, Tetra Tech personnel supervised the installation of a borehole (BH-1) between AH-1 and AH-2 utilizing an air rotary drilling rig. Soil samples were collected to a depth of 25' to define the impact of the chloride concentrations. Referring to Table 1, chloride concentrations decreased with depth to 287 mg/kg at 7' bgs.

Remedial Work and Closure Request

Tetra Tech personnel oversaw the excavation of the site on March 28 and March 29, 2011 . The soil remediation was performed according to the approved work plan. The excavation area measured approximately 45'

x 45' with a bottom hole depth of approximately 4.5-5.5'. The excavation areas and final depths are shown on Figure 4 and Table 1.

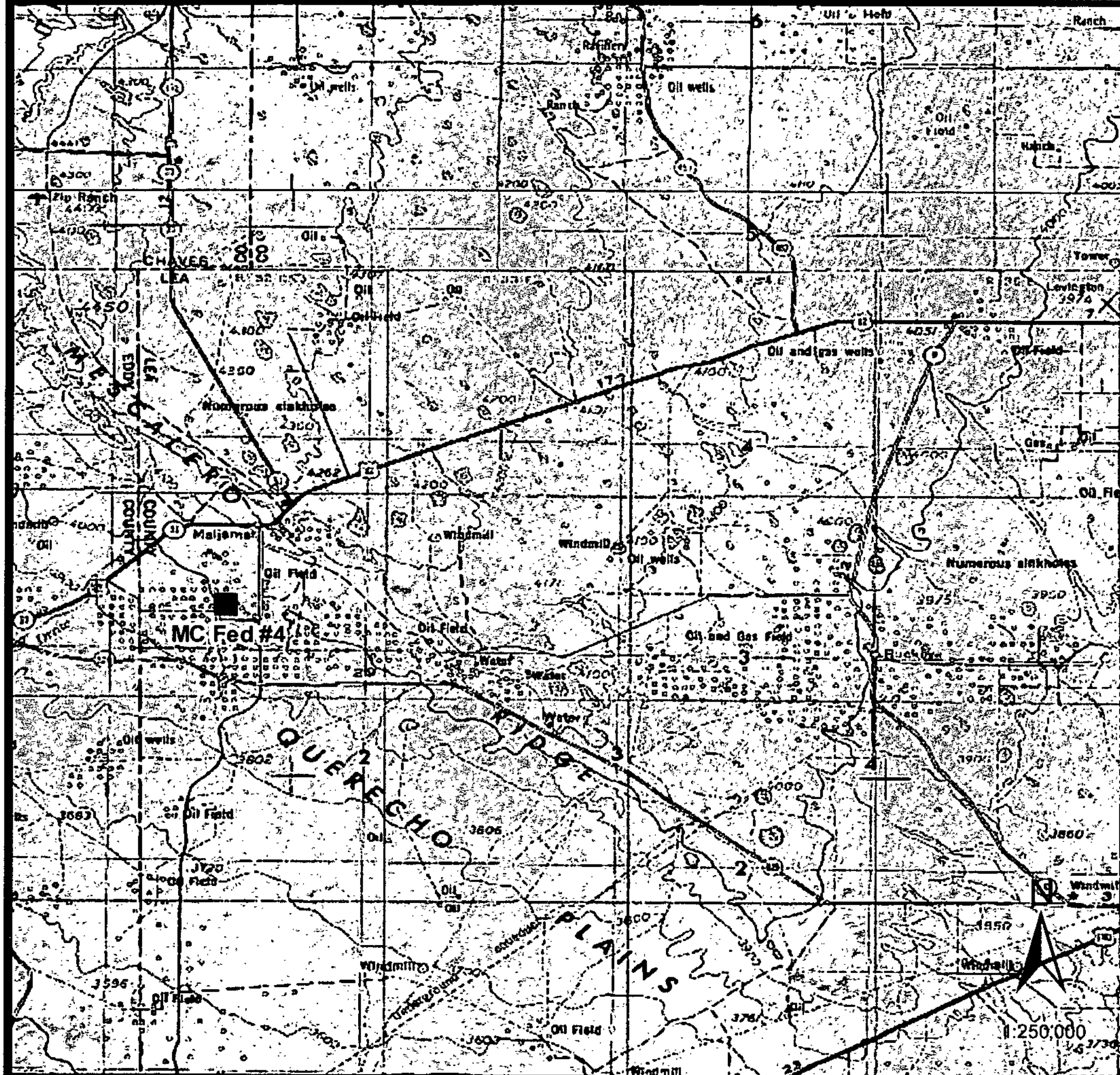
The excavated areas were backfilled with clean material and brought up to surface grade. Approximately 260 yards^3 were removed and hauled to CRI Inc. for proper disposal.

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

Respectfully submitted,
TETRA TECH

Kim Dorey
Staff II Geologist

cc: Pat Ellis – COG
cc: Terry Gregston – BLM
cc: Jim Amos - BLM

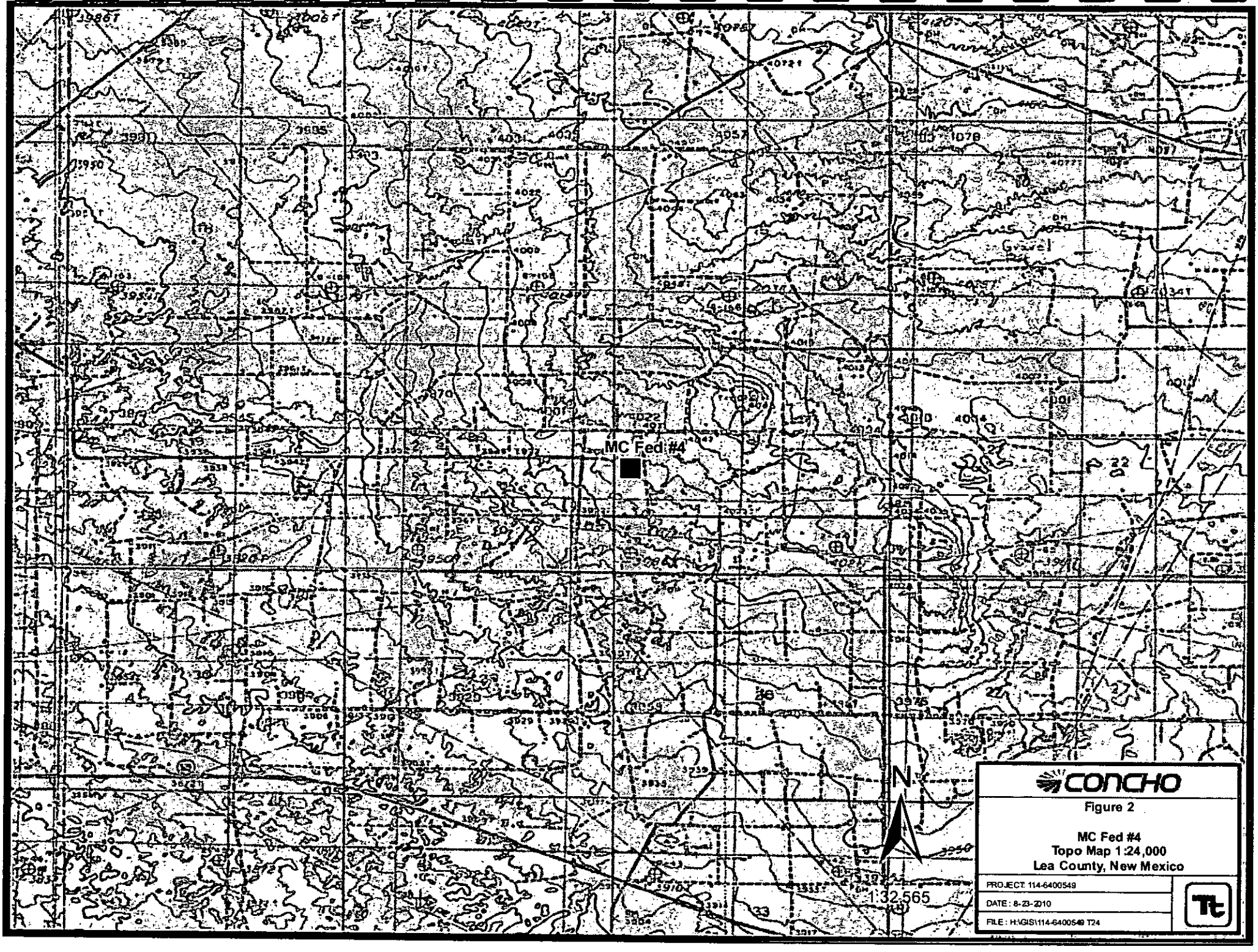


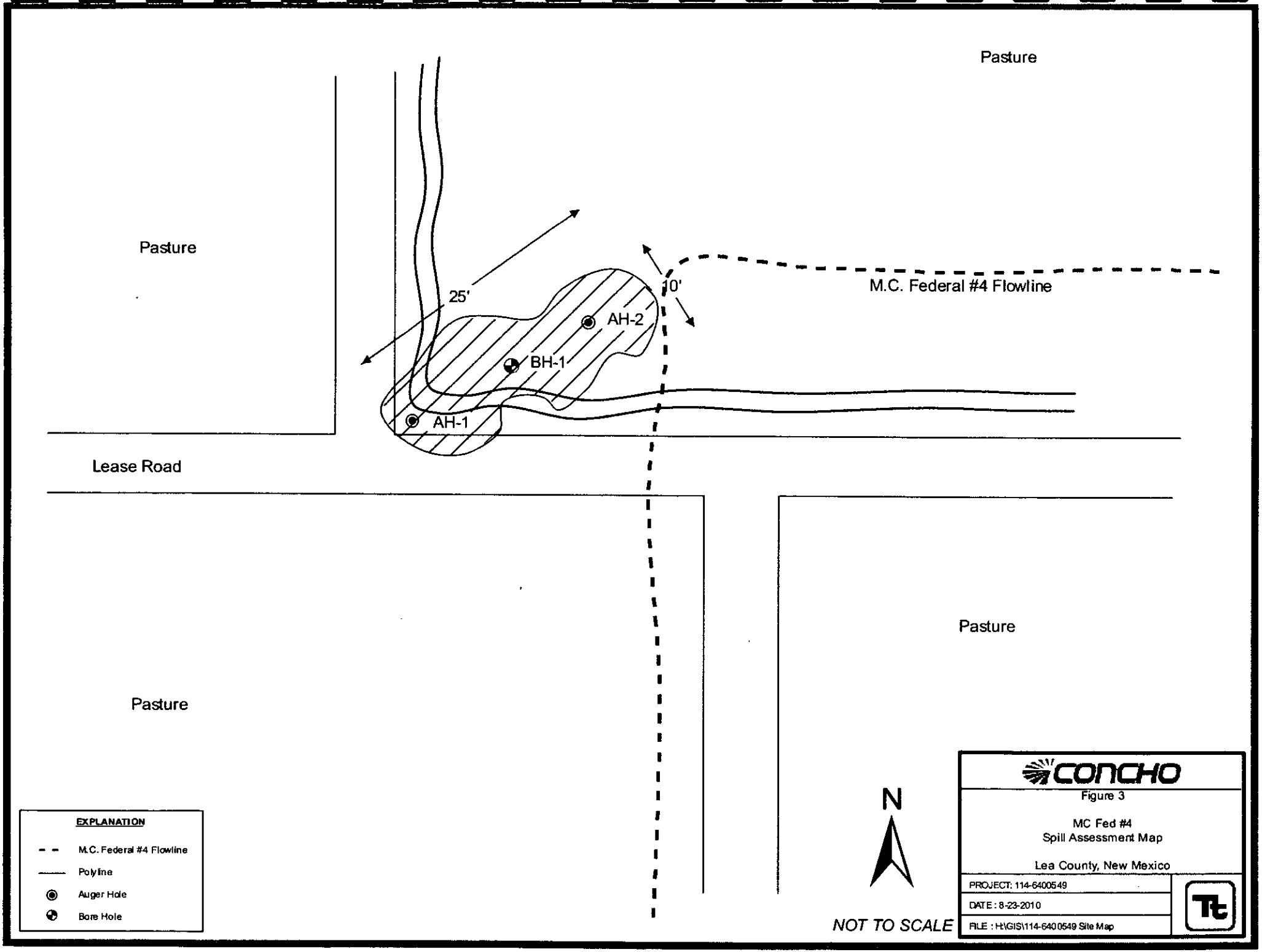
CONCHO

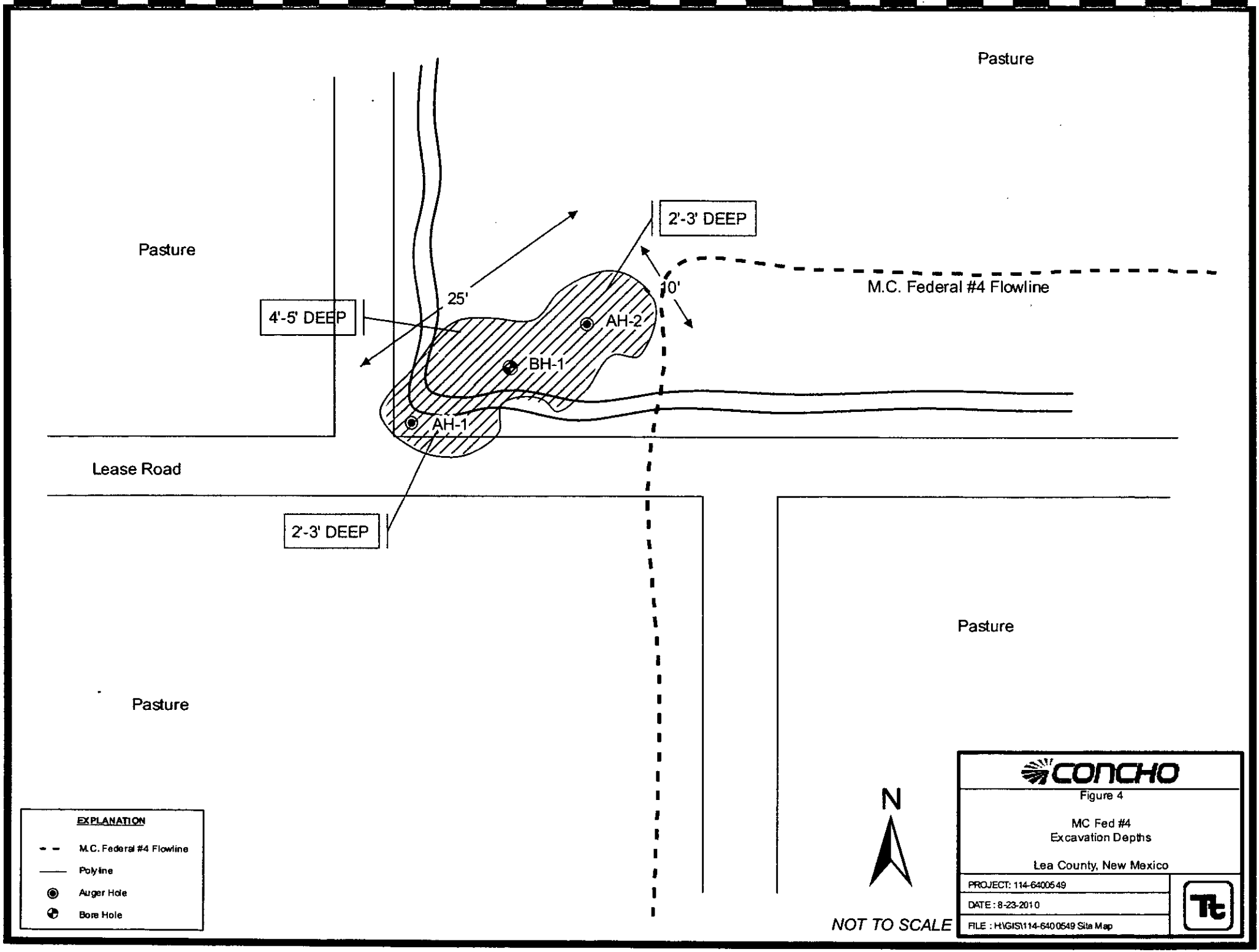
Figure 1

MC Fed #4
Topo Map
Lea County, New Mexico

PROJECT: 114-6400549
DATE : 8-23-2010
FILE : H:\GIS\114-6400549 T100

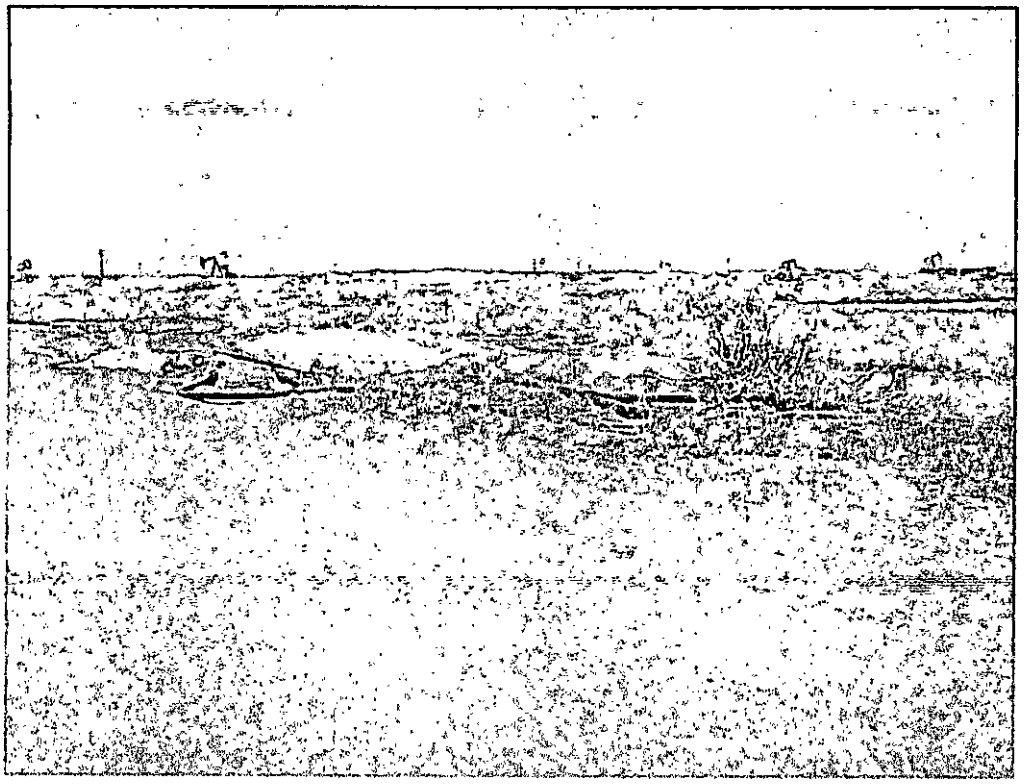

MC Fed #4
N
1:32,565
CONCHO
Figure 2
MC Fed #4
Topo Map 1:24,000
Lea County, New Mexico
PROJECT: 114-6400549
DATE: 8-23-2010
FILE: H:\GIS\114-6400549 T24


Pasture
Pasture
25'
10'
M.C. Federal #4 Flowline
AH-2
BH-1
AH-1
Lease Road
Pasture
Pasture
EXPLANATION
M.C. Federal #4 Flowline
Polyline
Auger Hole
Bore Hole
N
NOT TO SCALE
CONCHO
Figure 3
MC Fed #4
Spill Assessment Map
Lea County, New Mexico
PROJECT: 114-6400549
DATE : 8-23-2010
FILE : H:\GIS\114-6400549 Site Map

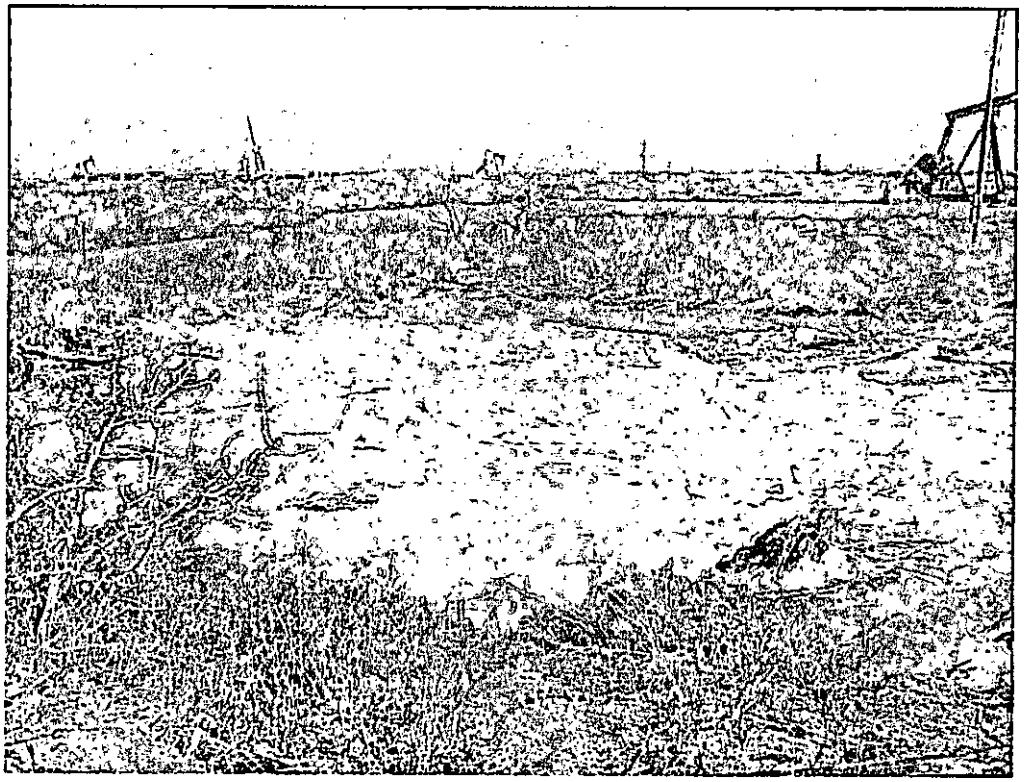

Pasture
Pasture
2'-3' DEEP
M.C. Federal #4 Flowline
10'
25'
4'-5' DEEP
AH-2
BH-1
AH-1
Lease Road
2'-3' DEEP
Pasture
Pasture
EXPLANATION
M.C. Federal #4 Flowline
Polyline
Auger Hole
Bore Hole
N
NOT TO SCALE
CONCHO
Figure 4
MC Fed #4
Excavation Depths
Lea County, New Mexico
PROJECT: 114-6400549
DATE : 8-23-2010
FILE : H:\GIS\114-6400549 Site Map

COG Operating LLC
MC Federal #4
Lea County, New Mexico

TETRA TECH



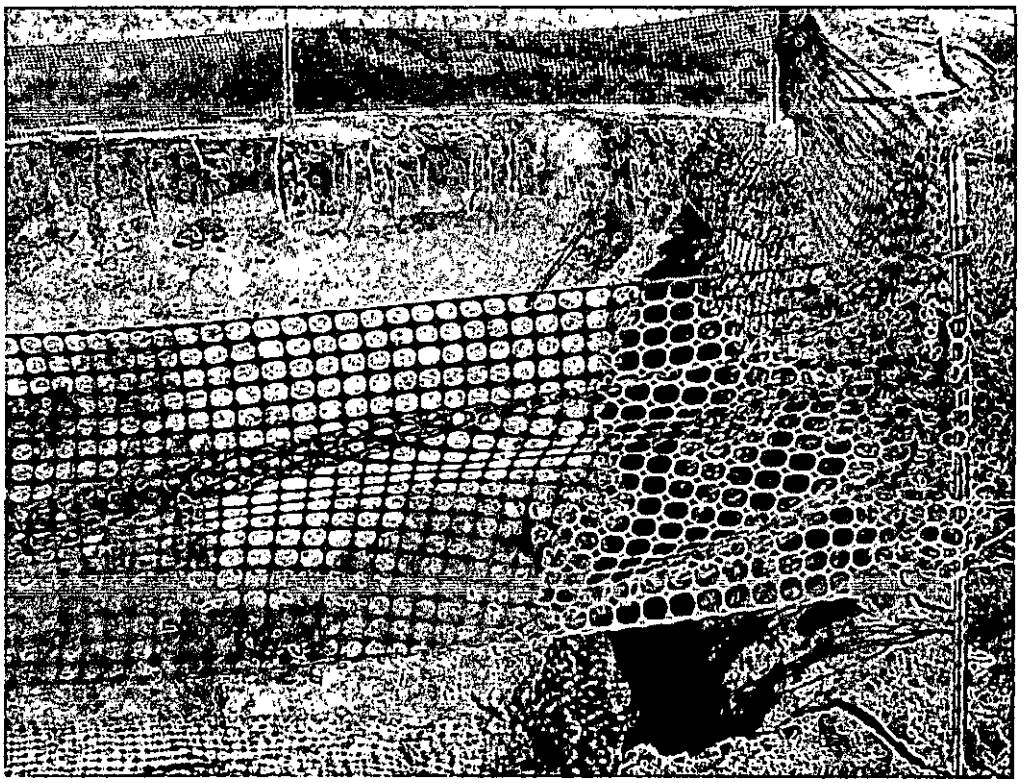
View north west – Site backfilled



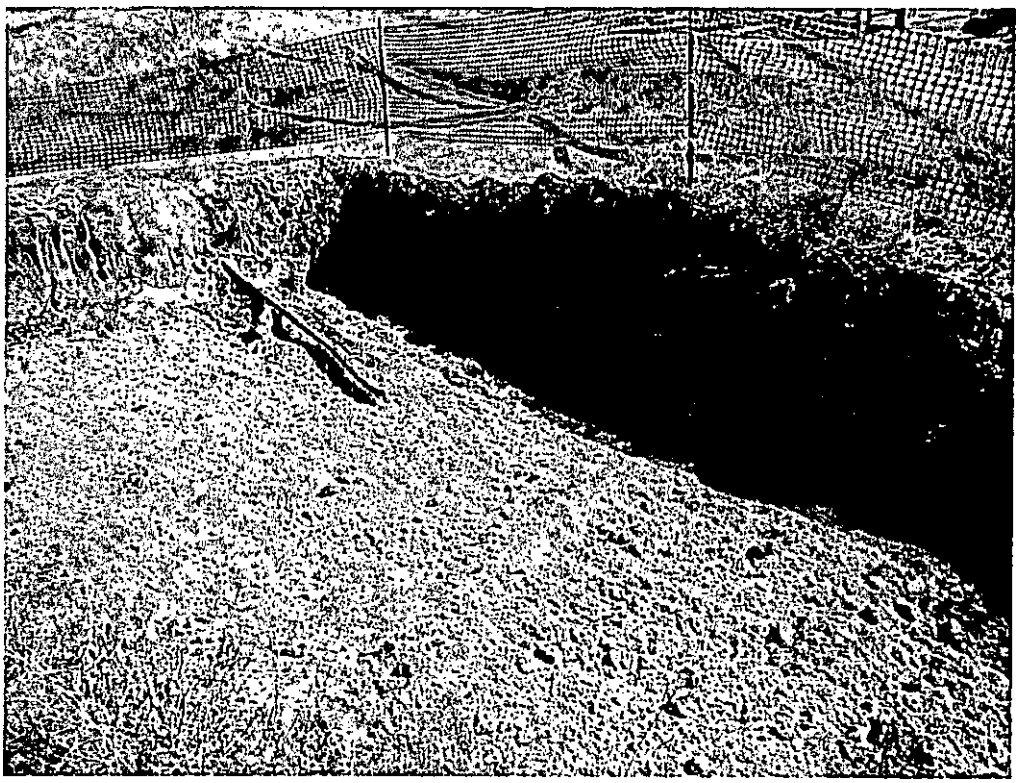
Site backfilled with clean material

COG Operating LLC
MC Federal #4
Lea County, New Mexico

TETRA TECH



View east across excavation site



Final depth of excavation from 4.5' to 5.5'

Table 1
COG Operating LLC.
MC Federal #4
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth (ft)	Depth (BEB)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	DRO	GRO	Total					
AH-1	8/17/10	0-1'	N/A		X	<50.0	<2.00	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	341
	"	1-1.5'	N/A		X	-	-	-	-	-	-	-	239
	"	2-2.5'	N/A		X	-	-	-	-	-	-	-	2,820
	"	3-3.5'	N/A		X	-	-	-	-	-	-	-	4,540
SB-1	11/11/10	0-1'	N/A		X	-	-	-	-	-	-	-	256
	"	3'	N/A		X	-	-	-	-	-	-	-	271
	"	5'	N/A		X	-	-	-	-	-	-	-	1,310
	"	7'	N/A	X		-	-	-	-	-	-	-	287
	"	10'	N/A	X		-	-	-	-	-	-	-	445
	"	15'	N/A	X		-	-	-	-	-	-	-	312
	"	20'	N/A	X		-	-	-	-	-	-	-	<200
	"	25'	N/A	X		-	-	-	-	-	-	-	<200
AH-2	8/17/10	0-1'	N/A		X	-	-	-	-	-	-	-	266
	"	1-1.5'	N/A		X	-	-	-	-	-	-	-	789
	"	2-2.5'	N/A		X	-	-	-	-	-	-	-	2,200

BEB Below Excavation Bottom

(--) Not Analyzed

Excavated Material

Water Well Data
Average Depth to Groundwater (ft)
COG - MC Federal #4 Tank Battery
Lea County, New Mexico

16 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12 **288**
18	17	16	15	14	13 **113**
19	20	21	22	23	24
30	29	28	27	26	25
31 **290**	32	33	34	35	36

17 South 31 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 **271**	35	36

18 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12 **400**
18	17	16	15	14 **317**	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35 **261**	36

16 South 32 East

6	5	4	3 **65**	2 **265**	1 **265**
7	8	9	10	11	12 **215**
18	17	16 **221**	15	14	13 **215**
19 **220**	20	21 **210**	22	23 **210**	24
30	29	28	27	26 **243**	25
31	32	33	34	35	36 **260**

17 South 32 East

6	5	4 **82**	3 **175**	2 **60**	1 **225**
7	8	9	10	11 **70 88**	12 **120**
18	17	16	15	14	13
19	20	21 SITE	22	23	24
30 **180**	29	28	27	26	25
31	32	33	34	35	36

18 South 32 East

6	5	4 **65**	3	2	1
7 **460 82**	8	9	10	11	12
18	17	16 **84**	15	14	13
19	20 **164**	21	22 **429**	23	24
30	29	28	27	26	25
31	32	33	34 **117**	35	36

16 South 33 East

6	5 **180**	4 **150**	3 **130**	2 **148**	1 **142**
7	8 **200**	9	10 **182**	11	12 **142**
18	17 **182**	16 **180**	15 **175**	14 **143**	13 **110**
19	20	21	22	23 **120**	24
30 **191**	29	28 **190**	27 **130**	26 **143**	25 **120**
31 **190**	32 **168**	33	34 **160**	35	36

17 South 33 East

6 **90**	5	4	3 **155**	2 **158**	1 **150**
7 **167**	8 **173**	9 **161**	10	11	12
18 **188**	17 **180**	16	15	14	13 **165**
19	20 **190**	21	22	23 **115**	24
30	29	28	27	26	25
31	32	33	34	35 **155**	36

18 South 33 East

6	5	4	3	2	1
7	8 **100**	9	10 **62**	11	12 **143 140**
18	17 **85**	16	15	14 **36**	13 **60**
19 **>140**	20	21	22	23	24 **195**
30 **35**	29	28	27	26	25
31	32	33	34 **177**	35	36

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

Summary Report

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

Report Date: August 27, 2010

Work Order: 10081830

Project Location: Lea County, NM
Project Name: COG/MC Fed. #4 (Flowline)
Project Number: 114-6400549

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
241709	AH-1 0-1'	soil	2010-08-17	00:00	2010-08-18
241710	AH-1 1-1.5'	soil	2010-08-17	00:00	2010-08-18
241711	AH-1 2-2.5'	soil	2010-08-17	00:00	2010-08-18
241712	AH-1 3-3.5'	soil	2010-08-17	00:00	2010-08-18
241713	AH-2 0-1'	soil	2010-08-17	00:00	2010-08-18
241714	AH-2 1-1.5'	soil	2010-08-17	00:00	2010-08-18
241715	AH-2 2-2.5'	soil	2010-08-17	00:00	2010-08-18

	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)
241709 - AH-1 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00

Sample: 241709 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**341**	mg/Kg	4.00

Sample: 241710 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**239**	mg/Kg	4.00

Sample: 241711 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**2820**	mg/Kg	4.00

Sample: 241712 - AH-1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**4540**	mg/Kg	4.00

Sample: 241713 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		**266**	mg/Kg	4.00

Sample: 241714 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**789**	mg/Kg	4.00

Sample: 241715 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**2200**	mg/Kg	4.00

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 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

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

Report Date: August 27, 2010

Work Order: 10081830

Project Location: Lea County, NM
Project Name: COG/MC Fed. #4 (Flowline)
Project Number: 114-6400549

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
241709	AH-1 0-1'	soil	2010-08-17	00:00	2010-08-18
241710	AH-1 1-1.5'	soil	2010-08-17	00:00	2010-08-18
241711	AH-1 2-2.5'	soil	2010-08-17	00:00	2010-08-18
241712	AH-1 3-3.5'	soil	2010-08-17	00:00	2010-08-18
241713	AH-2 0-1'	soil	2010-08-17	00:00	2010-08-18
241714	AH-2 1-1.5'	soil	2010-08-17	00:00	2010-08-18
241715	AH-2 2-2.5'	soil	2010-08-17	00:00	2010-08-18

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 13 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

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

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project COG/MC Fed. #4 (Flowline) were received by TraceAnalysis, Inc. on 2010-08-18 and assigned to work order 10081830. Samples for work order 10081830 were received intact at a temperature of 14.0 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	62501	2010-08-24 at 15:00	72904	2010-08-24 at 19:56
Chloride (Titration)	SM 4500-Cl B	62487	2010-08-24 at 09:00	72925	2010-08-25 at 15:11
TPH DRO - NEW	S 8015 D	62430	2010-08-20 at 13:56	72816	2010-08-20 at 13:56
TPH GRO	S 8015 D	62501	2010-08-24 at 15:00	72905	2010-08-24 at 20:23

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 10081830 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: 241709 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	72904	Date Analyzed:	2010-08-24	Analyzed By:	AG
Prep Batch:	62501	Sample Preparation:	2010-08-24	Prepared By:	AG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.08	mg/Kg	1	2.00	104	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1.62	mg/Kg	1	2.00	81	38.4 - 157

Sample: 241709 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	72925	Date Analyzed:	2010-08-25	Analyzed By:	AR
Prep Batch:	62487	Sample Preparation:	2010-08-24	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**341**	mg/Kg	50	4.00

Sample: 241709 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	72816	Date Analyzed:	2010-08-20	Analyzed By:	kg
Prep Batch:	62430	Sample Preparation:	2010-08-20	Prepared By:	kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		107	mg/Kg	1	100	107	70 - 130

Sample: 241709 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	72905	Date Analyzed:	2010-08-24	Analyzed By:	AG
Prep Batch:	62501	Sample Preparation:	2010-08-24	Prepared By:	AG

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<2.00	mg/Kg	1	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.33	mg/Kg	1	2.00	116	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.76	mg/Kg	1	2.00	88	42 - 159

Sample: 241710 - AH-1 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	72925	Date Analyzed:	2010-08-25	Analyzed By:	AR
Prep Batch:	62487	Sample Preparation:	2010-08-24	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**239**	mg/Kg	50	4.00

Sample: 241711 - AH-1 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	72925	Date Analyzed:	2010-08-25	Analyzed By:	AR
Prep Batch:	62487	Sample Preparation:	2010-08-24	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**2820**	mg/Kg	100	4.00

Sample: 241712 - AH-1 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	72925	Date Analyzed:	2010-08-25	Analyzed By:	AR
Prep Batch:	62487	Sample Preparation:	2010-08-24	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**4540**	mg/Kg	100	4.00

Sample: 241713 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	72925	Date Analyzed:	2010-08-25	Analyzed By:	AR
Prep Batch:	62487	Sample Preparation:	2010-08-24	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**266**	mg/Kg	50	4.00

Sample: 241714 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	72925	Date Analyzed:	2010-08-25	Analyzed By:	AR
Prep Batch:	62487	Sample Preparation:	2010-08-24	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**789**	mg/Kg	50	4.00

Sample: 241715 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	72925	Date Analyzed:	2010-08-25	Analyzed By:	AR
Prep Batch:	62487	Sample Preparation:	2010-08-24	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**2200**	mg/Kg	100	4.00

Method Blank (1) QC Batch: 72816

QC Batch: 72816 | Date Analyzed: 2010-08-20 | Analyzed By: kg
Prep Batch: 62430 | QC Preparation: 2010-08-20 | Prepared By: kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		90.2	mg/Kg	1	100	90	70 - 130

Method Blank (1) QC Batch: 72904

QC Batch: 72904 | Date Analyzed: 2010-08-24 | Analyzed By: AG
Prep Batch: 62501 | QC Preparation: 2010-08-24 | Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.0150	mg/Kg	0.02
Toluene		<0.00950	mg/Kg	0.02
Ethylbenzene		<0.0106	mg/Kg	0.02
Xylene		<0.00930	mg/Kg	0.02

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.92	mg/Kg	1	2.00	96	66.6 - 122
4-Bromofluorobenzene (4-BFB)		1.38	mg/Kg	1	2.00	69	55.4 - 132

Method Blank (1) QC Batch: 72905

QC Batch: 72905 | Date Analyzed: 2010-08-24 | Analyzed By: AG
Prep Batch: 62501 | QC Preparation: 2010-08-24 | Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
GRO		<1.65	mg/Kg	2

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.19	mg/Kg	1	2.00	110	67.6 - 150
4-Bromofluorobenzene (4-BFB)		1.49	mg/Kg	1	2.00	74	52.4 - 130

Method Blank (1) QC Batch: 72925

QC Batch: 72925 | Date Analyzed: 2010-08-25 | Analyzed By: AR
Prep Batch: 62487 | QC Preparation: 2010-08-24 | Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.18	mg/Kg	4

Laboratory Control Spike (LCS-1)

QC Batch: 72816 | Date Analyzed: 2010-08-20 | Analyzed By: kg
Prep Batch: 62430 | QC Preparation: 2010-08-20 | Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	244	mg/Kg	1	250	<14.5	98	57.4 - 133.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	236	mg/Kg	1	250	<14.5	94	57.4 - 133.4	3	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	110	108	mg/Kg	1	100	110	108	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 72904 | Date Analyzed: 2010-08-24 | Analyzed By: AG
Prep Batch: 62501 | QC Preparation: 2010-08-24 | Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.04	mg/Kg	1	2.00	<0.0150	102	81.9 - 108
Toluene	1.92	mg/Kg	1	2.00	<0.00950	96	81.9 - 107
Ethylbenzene	1.77	mg/Kg	1	2.00	<0.0106	88	78.4 - 107
Xylene	5.30	mg/Kg	1	6.00	<0.00930	88	79.1 - 107

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.09	mg/Kg	1	2.00	<0.0150	104	81.9 - 108	2	20

continued ...

control spikes continued ...

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Toluene	1.98	mg/Kg	1	2.00	<0.00950	99	81.9 - 107	3	20
Ethylbenzene	1.82	mg/Kg	1	2.00	<0.0106	91	78.4 - 107	3	20
Xylene	5.42	mg/Kg	1	6.00	<0.00930	90	79.1 - 107	2	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.94	1.90	mg/Kg	1	2.00	97	95	70.2 - 114
4-Bromofluorobenzene (4-BFB)	1.64	1.57	mg/Kg	1	2.00	82	78	69.8 - 121

Laboratory Control Spike (LCS-1)

QC Batch: 72905 | Date Analyzed: 2010-08-24 | Analyzed By: AG
Prep Batch: 62501 | QC Preparation: 2010-08-24 | Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	14.8	mg/Kg	1	20.0	<1.65	74	69.9 - 95.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	15.0	mg/Kg	1	20.0	<1.65	75	69.9 - 95.4	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)	2.21	2.19	mg/Kg	1	2.00	110	110	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.62	1.58	mg/Kg	1	2.00	81	79	68.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 72925 | Date Analyzed: 2010-08-25 | Analyzed By: AR
Prep Batch: 62487 | QC Preparation: 2010-08-24 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	97.6	mg/Kg	1	100	<2.18	98	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	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: 241849

QC Batch: 72816 | Date Analyzed: 2010-08-20 | Analyzed By: kg
Prep Batch: 62430 | QC Preparation: 2010-08-20 | Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	247	mg/Kg	1	250	<14.5	99	35.2 - 167.1

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	247	mg/Kg	1	250	<14.5	99	35.2 - 167.1	0	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	105	103	mg/Kg	1	100	105	103	70 - 130

Matrix Spike (MS-1) Spiked Sample: 241968

QC Batch: 72904 | Date Analyzed: 2010-08-24 | Analyzed By: AG
Prep Batch: 62501 | QC Preparation: 2010-08-24 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.11	mg/Kg	1	2.00	<0.0150	106	80.5 - 112
Toluene	2.07	mg/Kg	1	2.00	<0.00950	104	82.4 - 113
Ethylbenzene	2.02	mg/Kg	1	2.00	<0.0106	101	83.9 - 114
Xylene	5.97	mg/Kg	1	6.00	<0.00930	100	84 - 114

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene [1]	2.31	mg/Kg	1	2.00	<0.0150	116	80.5 - 112	9	20
Toluene	2.27	mg/Kg	1	2.00	<0.00950	114	82.4 - 113	9	20
Ethylbenzene	2.22	mg/Kg	1	2.00	<0.0106	111	83.9 - 114	9	20
Xylene	6.55	mg/Kg	1	6.00	<0.00930	109	84 - 114	9	20

[1] MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.06	2.06	mg/Kg	1	2	103	103	41.3 - 117
4-Bromofluorobenzene (4-BFB)	1.65	1.67	mg/Kg	1	2	82	84	35.5 - 129

Matrix Spike (MS-1) Spiked Sample: 241842

QC Batch: 72905 | Date Analyzed: 2010-08-24 | Analyzed By: AG
Prep Batch: 62501 | QC Preparation: 2010-08-24 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	18.4	mg/Kg	1	20.0	<1.65	92	61.8 - 114

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	18.3	mg/Kg	1	20.0	<1.65	92	61.8 - 114	0	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.26	2.22	mg/Kg	1	2	113	111	50 - 162
4-Bromofluorobenzene (4-BFB)	1.78	1.72	mg/Kg	1	2	89	86	50 - 162

Matrix Spike (MS-1) Spiked Sample: 241715

QC Batch: 72925 | Date Analyzed: 2010-08-25 | Analyzed By: AR
Prep Batch: 62487 | QC Preparation: 2010-08-24 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	12400	mg/Kg	100	10000	2200	102	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	12800	mg/Kg	100	10000	2200	106	85 - 115	3	20

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

Standard (CCV-2)

QC Batch: 72816 | Date Analyzed: 2010-08-20 | Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	268	107	80 - 120	2010-08-20

Standard (CCV-3)

QC Batch: 72816 Date Analyzed: 2010-08-20 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	246	98	80 - 120	2010-08-20

Standard (CCV-1)

QC Batch: 72904 Date Analyzed: 2010-08-24 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0988	99	80 - 120	2010-08-24
Toluene		mg/Kg	0.100	0.0947	95	80 - 120	2010-08-24
Ethylbenzene		mg/Kg	0.100	0.0870	87	80 - 120	2010-08-24
Xylene		mg/Kg	0.300	0.262	87	80 - 120	2010-08-24

Standard (CCV-2)

QC Batch: 72904 Date Analyzed: 2010-08-24 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.104	104	80 - 120	2010-08-24
Toluene		mg/Kg	0.100	0.0997	100	80 - 120	2010-08-24
Ethylbenzene		mg/Kg	0.100	0.0894	89	80 - 120	2010-08-24
Xylene		mg/Kg	0.300	0.265	88	80 - 120	2010-08-24

Standard (CCV-1)

QC Batch: 72905 Date Analyzed: 2010-08-24 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.947	95	80 - 120	2010-08-24

Standard (CCV-2)

QC Batch: 72905 Date Analyzed: 2010-08-24 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.890	89	80 - 120	2010-08-24

Standard (ICV-1)

QC Batch: 72925 Date Analyzed: 2010-08-25 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-08-25

Standard (CCV-1)

QC Batch: 72925 Date Analyzed: 2010-08-25 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.0	99	85 - 115	2010-08-25

WO #: 1008830

Analysis Request of Chain of Custody Record

PAGE: / OF: /

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.: 1M-1400549

PROJECT NAME: COG / MC Fed #4 (flowline) Lea Co, NM

LAB I.D. NUMBER	DATE 2010	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. 8240/8260/824	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
241709	8/17		S		X	AH-1 0-1'	1				X		X	X											X				
710						AH-1 1'-1.5'																							
711						AH-1 2'-2.5'																							
712						AH-1 3'-3.5'																							
713						AH-2 0-1'																							
714						AH-2 1'-1.5'																							
715						AH-2 2'-2.5'																							

RELINQUISHED BY: (Signature) — Date: 8/18/10 Time: 1245
RECEIVED BY: (Signature) — Date: 8/18/10 Time: 12:45
SAMPLED BY: (Print & Initial) — Date: 8/17/10 Time:

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:
TETRA TECH CONTACT PERSON: Ike Tavarez — Results by:

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

SAMPLE CONDITION WHEN RECEIVED: 14.0°C intact

REMARKS: If total TPH exceeds 1,000 mg/kg run deeper samples

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: November 19, 2010

Work Order: 10111514

Project Location: Lea County, NM
Project Name: COG/MC Fed. #4 (Flowline)
Project Number: 114-6400549

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
250489	SB-1 0-1'	soil	2010-11-11	00:00	2010-11-15
250490	SB-1 3'	soil	2010-11-11	00:00	2010-11-15
250491	SB-1 5'	soil	2010-11-11	00:00	2010-11-15
250492	SB-1 7'	soil	2010-11-11	00:00	2010-11-15
250493	SB-1 10'	soil	2010-11-11	00:00	2010-11-15
250494	SB-1 15'	soil	2010-11-11	00:00	2010-11-15
250495	SB-1 20'	soil	2010-11-11	00:00	2010-11-15
250496	SB-1 25'	soil	2010-11-11	00:00	2010-11-15

Sample: 250489 - SB-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**256**	mg/Kg	4.00

Sample: 250490 - SB-1 3'

Param	Flag	Result	Units	RL
Chloride		**271**	mg/Kg	4.00

Sample: 250491 - SB-1 5'

Param	Flag	Result	Units	RL
Chloride		**1310**	mg/Kg	4.00

Sample: 250492 - SB-1 7'

Param	Flag	Result	Units	RL
Chloride		**287**	mg/Kg	4.00

Sample: 250493 - SB-1 10'

Param	Flag	Result	Units	RL
Chloride		**445**	mg/Kg	4.00

Sample: 250494 - SB-1 15'

Param	Flag	Result	Units	RL
Chloride		**312**	mg/Kg	4.00

Sample: 250495 - SB-1 20'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 250496 - SB-1 25'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

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 888•588•3443 915•585•3443 FAX 915•585•4944
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6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 **El Paso:** T104704221-08-TX LELAP-02002 **Midland:** T104704392-08-TX

Analytical and Quality Control Report

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

Report Date: November 19, 2010

Work Order: 10111514

Project Location: Lea County, NM
Project Name: COG/MC Fed. #4 (Flowline)
Project Number: 114-6400549

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
250489	SB-1 0-1'	soil	2010-11-11	00:00	2010-11-15
250490	SB-1 3'	soil	2010-11-11	00:00	2010-11-15
250491	SB-1 5'	soil	2010-11-11	00:00	2010-11-15
250492	SB-1 7'	soil	2010-11-11	00:00	2010-11-15
250493	SB-1 10'	soil	2010-11-11	00:00	2010-11-15
250494	SB-1 15'	soil	2010-11-11	00:00	2010-11-15
250495	SB-1 20'	soil	2010-11-11	00:00	2010-11-15
250496	SB-1 25'	soil	2010-11-11	00:00	2010-11-15

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch

basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 7 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

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

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project COG/MC Fed. #4 (Flowline) were received by TraceAnalysis, Inc. on 2010-11-15 and assigned to work order 10111514. Samples for work order 10111514 were received intact at a temperature of 3.0 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	64661	2010-11-16 at 08:29	75452	2010-11-18 at 10:31

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 10111514 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: 250489 - SB-1 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	75452	Date Analyzed:	2010-11-18	Analyzed By:	AR
Prep Batch:	64661	Sample Preparation:	2010-11-16	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**256**	mg/Kg	50	4.00

Sample: 250490 - SB-1 3'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	75452	Date Analyzed:	2010-11-18	Analyzed By:	AR
Prep Batch:	64661	Sample Preparation:	2010-11-16	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**271**	mg/Kg	50	4.00

Sample: 250491 - SB-1 5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	75452	Date Analyzed:	2010-11-18	Analyzed By:	AR
Prep Batch:	64661	Sample Preparation:	2010-11-16	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**1310**	mg/Kg	100	4.00

Sample: 250492 - SB-1 7'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	75452	Date Analyzed:	2010-11-18	Analyzed By:	AR
Prep Batch:	64661	Sample Preparation:	2010-11-16	Prepared By:	AR

continued ...

sample 250492 continued . . .

Parameter	Flag	RL Result	Units	Dilution	RL

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**287**	mg/Kg	50	4.00

Sample: 250493 - SB-1 10'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	75452	Date Analyzed:	2010-11-18	Analyzed By:	AR
Prep Batch:	64661	Sample Preparation:	2010-11-16	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**445**	mg/Kg	50	4.00

Sample: 250494 - SB-1 15'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	75452	Date Analyzed:	2010-11-18	Analyzed By:	AR
Prep Batch:	64661	Sample Preparation:	2010-11-16	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**312**	mg/Kg	50	4.00

Sample: 250495 - SB-1 20'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	75452	Date Analyzed:	2010-11-18	Analyzed By:	AR
Prep Batch:	64661	Sample Preparation:	2010-11-16	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

Sample: 250496 - SB-1 25'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	75452	Date Analyzed:	2010-11-18	Analyzed By:	AR
Prep Batch:	64661	Sample Preparation:	2010-11-16	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

Method Blank (1) QC Batch: 75452

QC Batch:	75452	Date Analyzed:	2010-11-18	Analyzed By:	AR
Prep Batch:	64661	QC Preparation:	2010-11-16	Prepared By:	AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.18	mg/Kg	4

Laboratory Control Spike (LCS-1)

QC Batch:	75452	Date Analyzed:	2010-11-18	Analyzed By:	AR
Prep Batch:	64661	QC Preparation:	2010-11-16	Prepared By:	AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.1	mg/Kg	1	100	<2.18	98	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	102	mg/Kg	1	100	<2.18	102	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: 250496

QC Batch:	75452	Date Analyzed:	2010-11-18	Analyzed By:	AR
Prep Batch:	64661	QC Preparation:	2010-11-16	Prepared By:	AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10500	mg/Kg	100	10000	<218	105	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	10800	mg/Kg	100	10000	<218	108	85 - 115	3	20

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

Standard (ICV-1)

QC Batch: 75452 Date Analyzed: 2010-11-18 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.2	99	85 - 115	2010-11-18

Standard (CCV-1)

QC Batch: 75452 Date Analyzed: 2010-11-18 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-11-18

*WO #: 10111514

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.: 114-6400549

PROJECT NAME: COG / MC Federal #4
Lea Co., NM

LAB I.D. NUMBER	DATE 2010	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
230489	11/11		S		X	SB-1 0-1'	1				X	
490						SB-1 3'	1				X	
491						SB-1 5'	1				X	
492						SB-1 7'	1				X	
493						SB-1 10'	1				X	
494						SB-1 15'	1				X	
495						SB-1 20'	1				X	
496						SB-1 25'	1				X	

ANALYSIS REQUEST (Circle or Specify Method No.)

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

RELINQUISHED BY: (Signature) — Date: 11/15/10 Time: 1300
RECEIVED BY: (Signature) — Date: Time:

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

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

SAMPLED BY: (Print & Initial) Kim — Date: 11/11/10 Time:

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

RECEIVING LABORATORY:
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: 11-15-10 TIME: 12:40

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.0c intact

REMARKS: All tests Midland

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