PJXK1535251238
4044

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	COG Operating LLC	Contact	Pat Ellis
Address	550 W. Texas, Suite 100 Midland, Texas 79701	Telephone No.	(432) 230-0077
Facility Name	BC Federal #10 Tank Battery	Facility Type	Tank Battery

Surface Owner: Federal	Mineral Owner	Lease No. (API#) 30-025-37021

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	19	17S	32E					Lea

Latitude N32.82264 ° **Longitude** W103.80886 °

NATURE OF RELEASE

Type of Release: Oil	Volume of Release 10bbls	Volume Recovered 9bbls
Source of Release: Oil Tank	Date and Hour of Occurrence 05/17/2012	Date and Hour of Discovery 05/17/2012 8:00 a.m.
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.*

Describe Cause of Problem and Remedial Action Taken.*

Tank did not equalize due to the valve being shut. The equalizer valve has since been opened.

Describe Area Affected and Cleanup Action Taken.*

Tetra Tech personnel inspected site and collected samples to define the spill extents. Soil that exceeded RRAL was removed and transported to proper disposal. Once excavated to the appropriate depths, 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: Jocelyn Harimon	
Title: Project Manager	Approval Date: 09/12/2023	Expiration Date:
E-mail Address: ike.tavarez@tetratech.com	Conditions of Approval:	Attached ☐
Date: 10-17-2 Phone: (432) 686-3023		

* Attach Additional Sheets If Necessary

District I
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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	BC Federal #10 Tank Battery	Facility Type	Tank Battery

Surface Owner Federal	Mineral Owner	Lease No. (API#) 30-025-37021 Closest well

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	19	17S	32E					Lea

Latitude 32.823 **Longitude** 103.809

NATURE OF RELEASE

Type of Release Oil	Volume of Release 10bbls	Volume Recovered 9bbls
Source of Release Oil Tank	Date and Hour of Occurrence 05/17/2012	Date and Hour of Discovery 05/17/2012 8:00 a.m.
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.*

Tank did not equalize due to the valve being shut. The equalizer valve has since been opened.

Describe Area Affected and Cleanup Action Taken.*

Initially 10bbls of oil were released from the oil tank and we were able to recover 9bbls with a vacuum truck. All free fluid was completely contained inside the facility walls. All free fluid has been picked up and the tank has been steam cleaned. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will submit 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: 06/01/2012 Phone: 432-212-2399		

* Attach Additional Sheets If Necessary

PJXK1535251239

SITE INFORMATION

Report Type: Work Plan

HOBBS OCD

SEP 28 2012

RECEIVED

General Site Information:						
Site:	BC Federal #10 Tank Battery					
Company:	COG Operating LLC					
Section, Township and Range	Unit F	Sec 19	T17S	R32E		
Lease Number:	API-30-025-37021					
County:	Lea County					
GPS:	32.82264° N			103.80886° W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From the intersection of Hwy 529 and Hwy 82, travel east on Hwy 82 for 3.2 miles, turn right (SE) on CR 224 and travel for 1.7 miles, turn left (North) and travel 0.1 miles to location.					

Release Data:	
Date Released:	5/17/2012
Type Release:	Oil
Source of Contamination:	Oil Tank
Fluid Released:	10 bbls
Fluids Recovered:	9 bbls

Official Communication:			
Name:	Pat Ellis		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	550 W. Texas Ave. Ste. 1300		1910 N. Big Spring
P.O. Box			
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 682-4559
Fax:	(432) 684-7137		
Email:	pellis@conchoresources.com		Ike.tavarez@tetratech.com

Ranking Criteria		
Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	
>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

approved

Environmental Specialist

NMOCD-DIST I

10/2/12

DEC 22 2015

TETRA TECH

August 15, 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., BC Federal #10 Tank Battery, Unit F, Section 19, 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 BC Federal #10 Tank Battery, Unit F, Section 19, Township 17 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.82264°, W 103.80886°. 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 17, 2012, and released approximately ten (10) barrels of oil due to the equalizer valve being shut causing the oil tank to overflow. To alleviate the problem, COG personnel opened the equalizer valve. Nine (9) barrels of standing fluids were recovered. The spill measured approximately 10' x 100' and was contained inside the tank battery firewalls. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 21. According to the NMOCD groundwater map, the depth to groundwater in this area is approximately 200' 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

TETRA TECH

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 1, 2012, Tetra Tech personnel inspected and sampled the spill area. Three (3) auger holes (AH-1, AH-2 and AH-3) were installed using a stainless steel hand auger to assess the impacted soils. Soil samples were not collected on the east side of the tank battery, due to the limited impacted area and multiple lines in the area. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all of the submitted samples were all below the RRAL for BTEX and TPH. The chlorides detected in the areas of AH-1 and AH-2 did not show significant impact to these areas. Elevated chloride concentrations were detected in AH-3 in the shallow soils, with a chloride high of 2,890 mg/kg at 0-1', which declined to 653 mg/kg at 3-3.5' below surface.

Work Plan

COG proposes to remove impacted material as highlighted (green) in Table 1 and shown on Figure 4. The area of AH-3 will be excavated to a depth of approximately 2.0' below surface. Based on the depth to groundwater (200' below surface), the areas of AH-1 and AH-2 do not appear to be an environmental concern.

TETRA TECH

Once excavated to the appropriate depth, the excavation will be backfilled with clean soil. The excavated soil will be transported offsite to proper disposal.

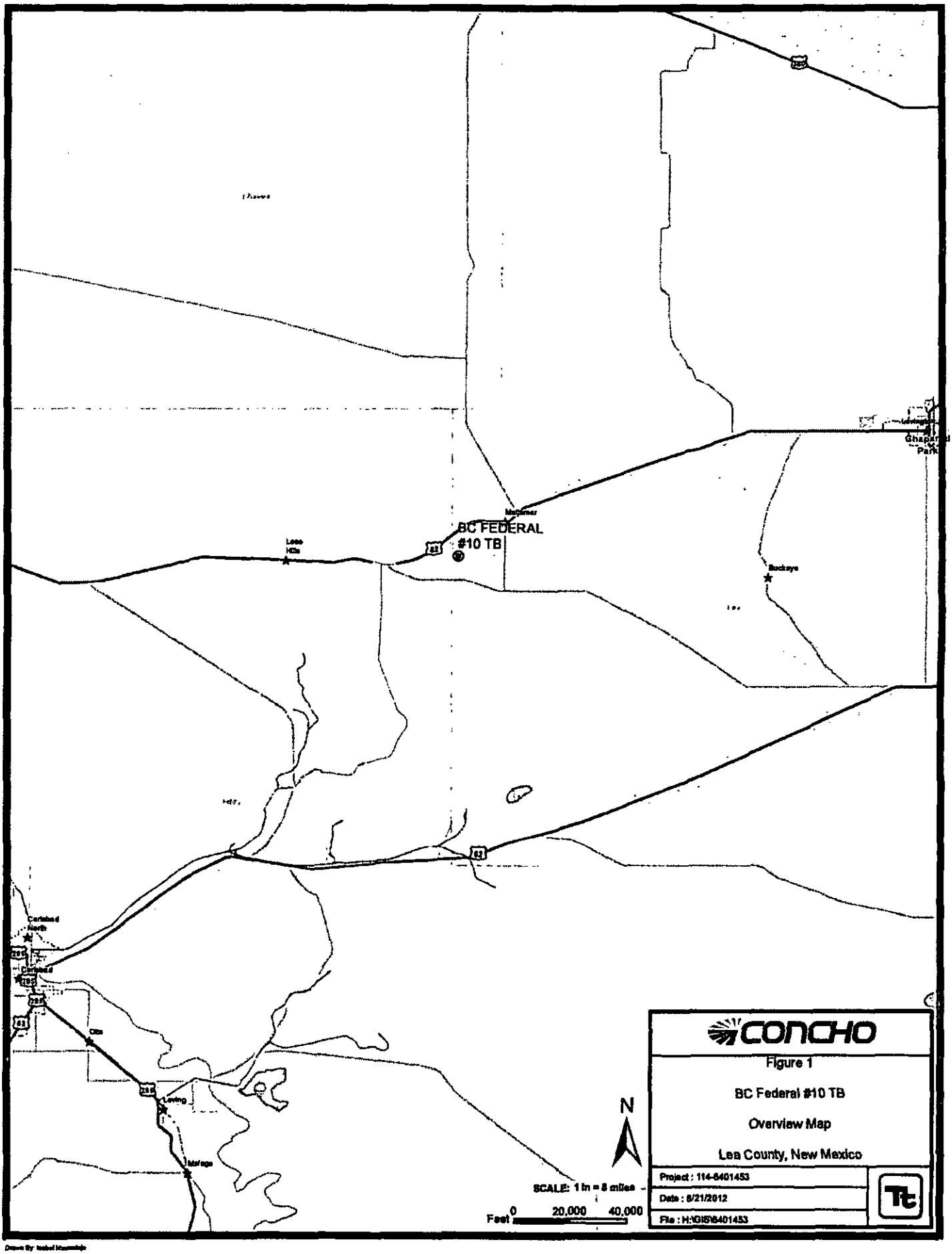
The proposed excavation depths may not be reached due to safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safety concerns. As such, Tetra Tech will excavate the soils to the maximum extent practicable.

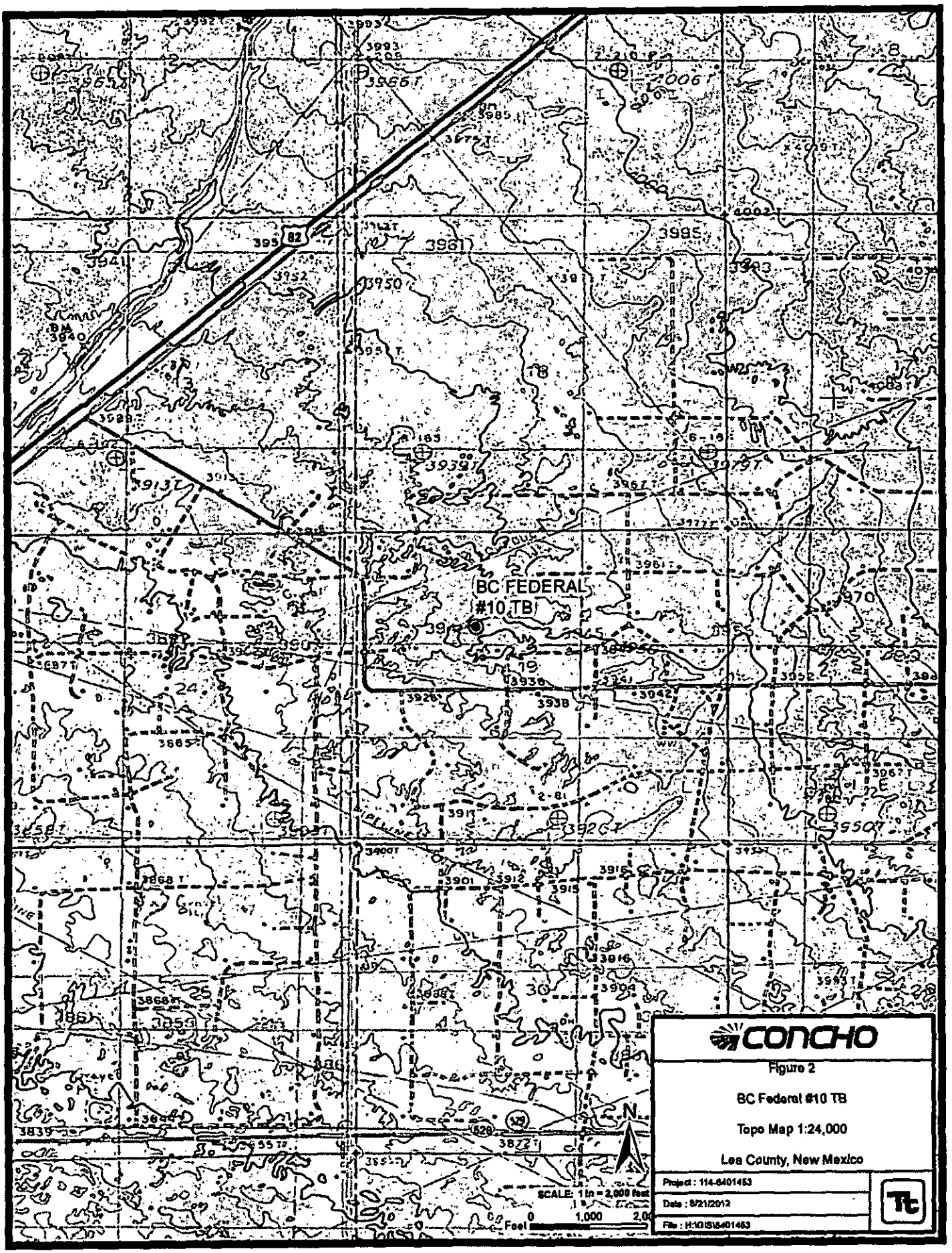
If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call me at (432) 682-4559.

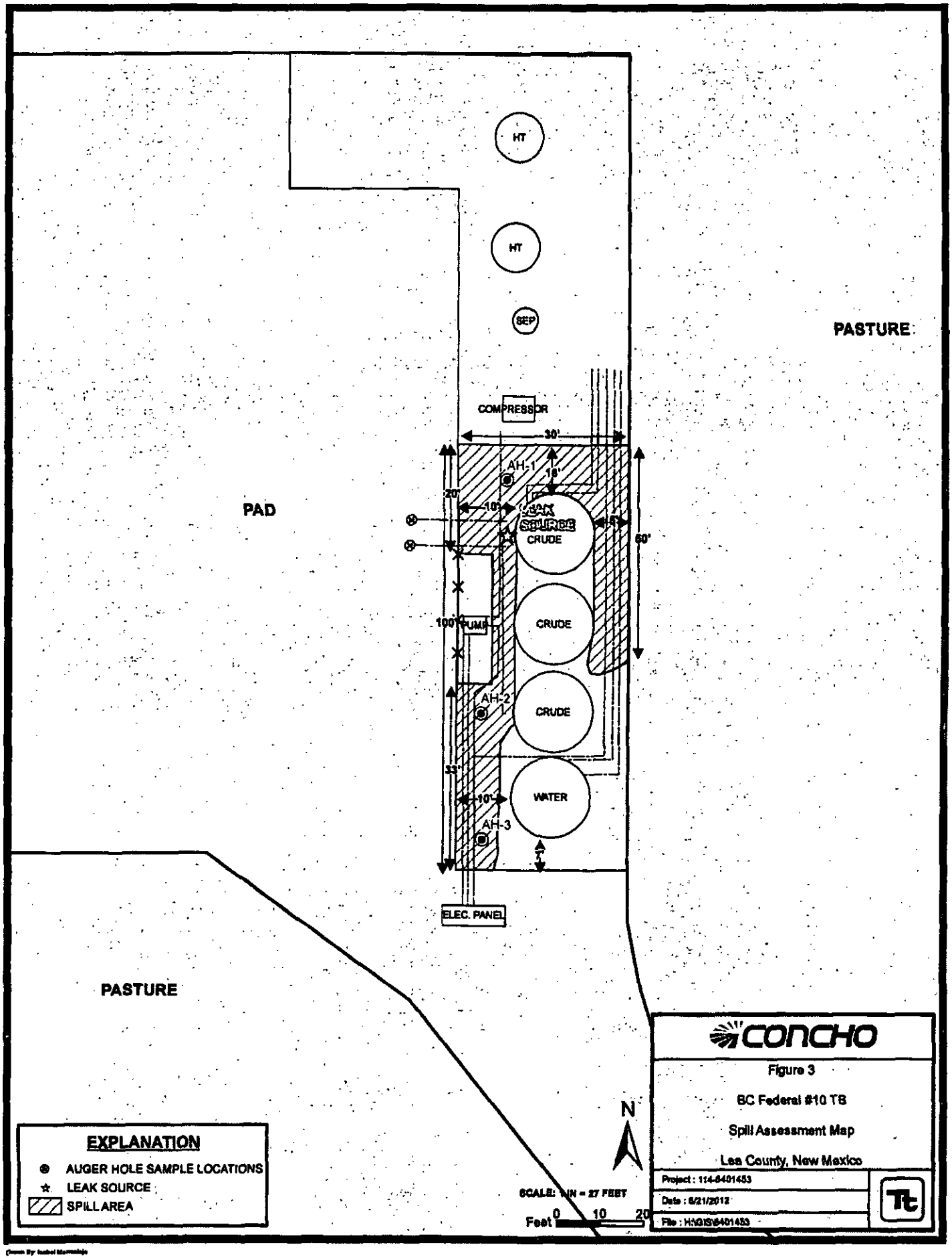
Respectfully submitted,
TETRA TECH

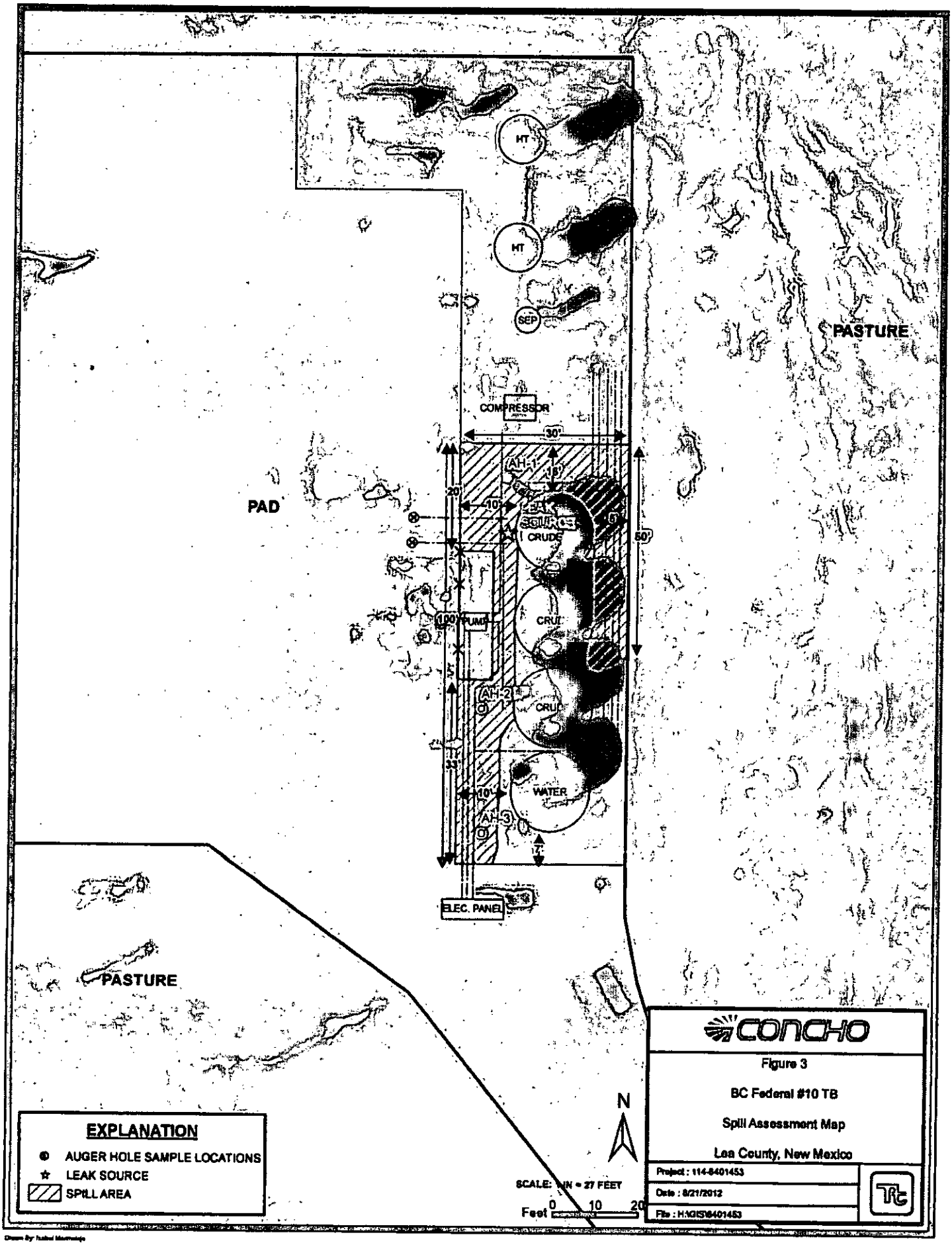
Ike Tavarez, PG
Project Manage

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


BC FEDERAL
#10 TB
Lea Hills
Buckeye
Malaga
Carlsbad North
Carlsbad
Loving
Malaga
N
SCALE: 1 in = 8 miles
Feet 0 20,000 40,000
CONCHO
Figure 1
BC Federal #10 TB
Overview Map
Lea County, New Mexico
Project : 114-6401453
Date : 8/21/2012
File : H:\GIS\6401453


BC FEDERAL
#10 TB
CONCHO
Figure 2
BC Federal #10 TB
Topo Map 1:24,000
Lea County, New Mexico
Project : 114-6401453
Date : 8/21/2012
File : H:\GIS\6401453
SCALE: 1 in = 2,000 feet
0
1,000
Feet


HT
HT
SEP
PASTURE
COMPRESSOR
30'
AH-1
18'
20'
10'
LEAK SOURCE
CRUDE
5'
60'
PAD
100'
PUMP
CRUDE
AH-2
CRUDE
33'
10'
WATER
AH-3
7'
ELEC. PANEL
PASTURE
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
LEAK SOURCE
SPILL AREA
N
SCALE: 1IN = 27 FEET
Feet 0 10 20
CONCHO
Figure 3
BC Federal #10 TB
Spill Assessment Map
Lea County, New Mexico
Project : 114-6401453
Date : 5/21/2012
File : H:\GIS\6401453


HT
HT
SEP
PASTURE
COMPRESSOR
30'
AH-1
18'
20'
10'
PAD
SPILL
CRUDE
50'
100'
PUMP
CRUDE
AH-2
CRUDE
33'
10'
WATER
AH-3
12'
ELEC. PANEL
PASTURE
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
LEAK SOURCE
SPILL AREA
N
SCALE: 1IN = 27 FEET
Feet 0 10 20
CONCHO
Figure 3
BC Federal #10 TB
Spill Assessment Map
Lea County, New Mexico
Project : 114-8401453
Date : 8/21/2012
File : H:\GIS\8401453

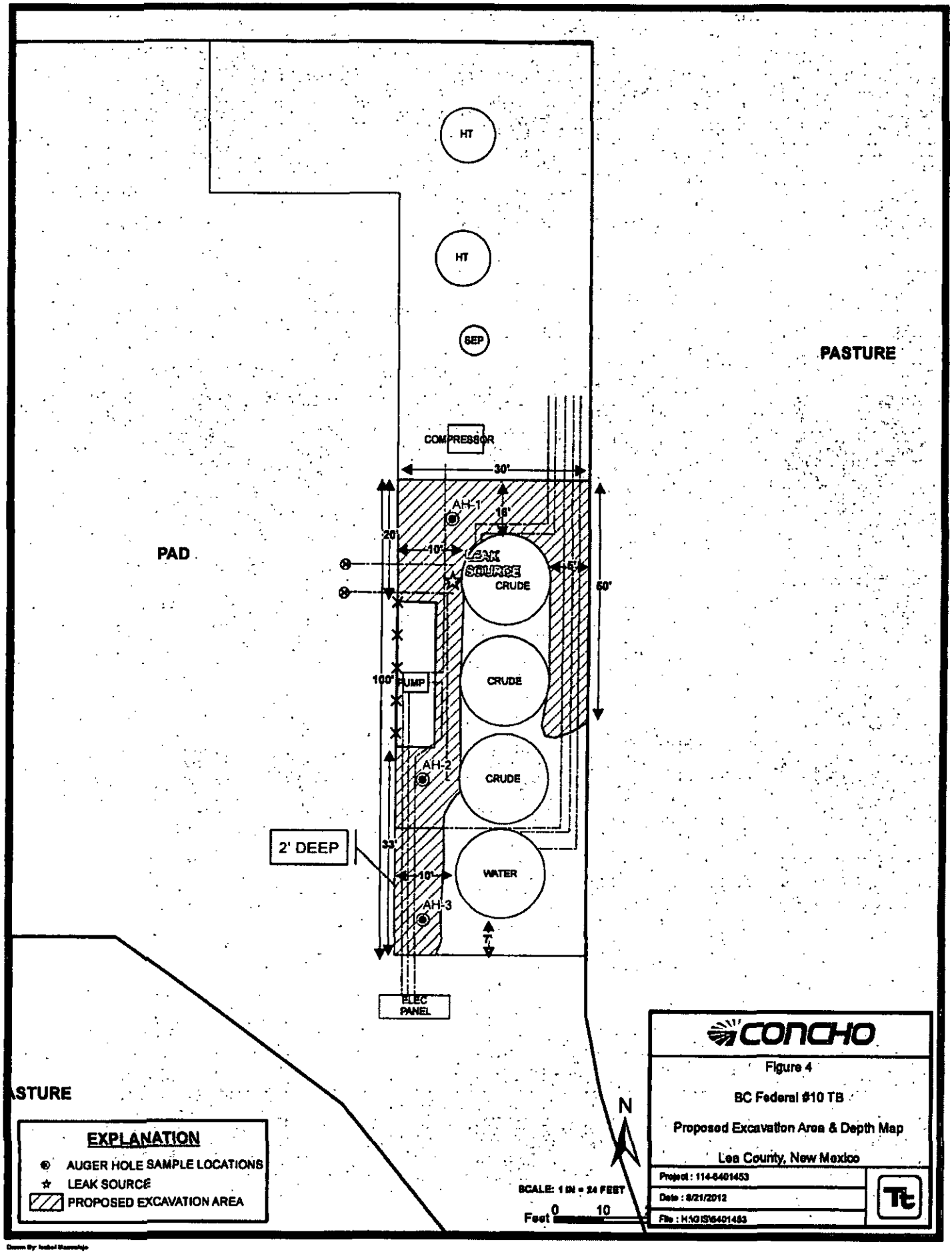

HT
HT
SEP
PASTURE
COMPRESSOR
30'
AH-1
18'
20'
10'
LEAK SOURCE
CRUDE
5'
60'
PAD
100'
PUMP
CRUDE
AH-2
CRUDE
2' DEEP
33'
10'
WATER
AH-3
ELEC PANEL
ASTURE
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
LEAK SOURCE
PROPOSED EXCAVATION AREA
N
SCALE: 1 IN = 24 FEET
Feet 0 10
CONCHO
Figure 4
BC Federal #10 TB
Proposed Excavation Area & Depth Map
Lea County, New Mexico
Project : 114-6401453
Date : 8/21/2012
File : H:\GIS\6401453

Table 1
COG Operating LLC.
BC Federal #10
Lea County, New Mexico

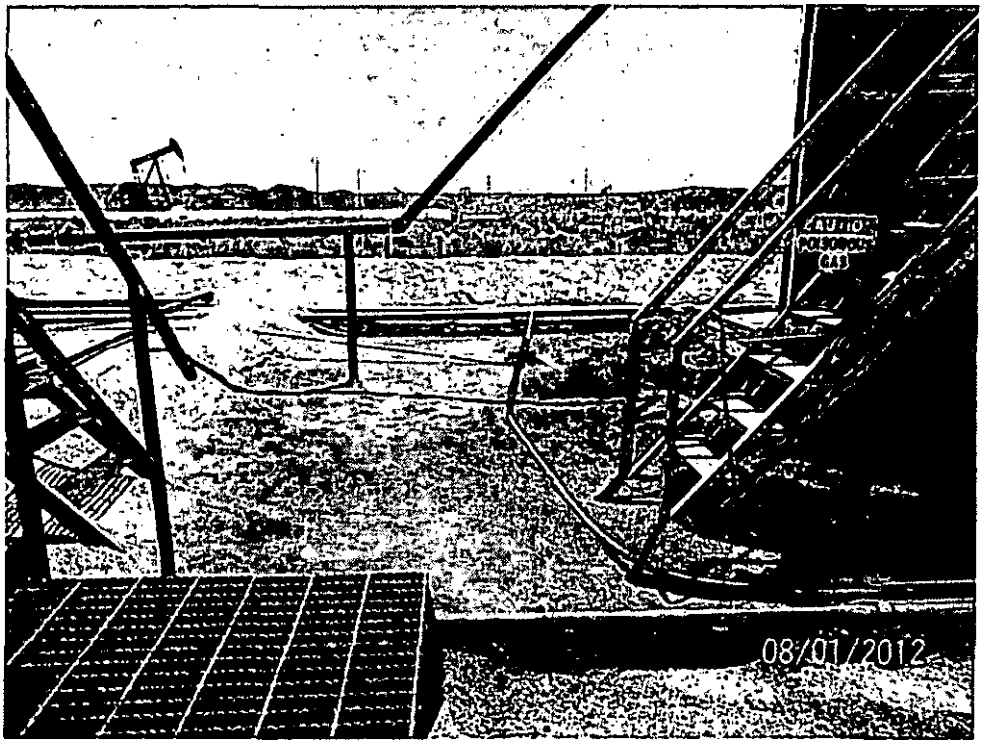
Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
AH-1	8/1/2012	0-1	X		102	457	559	<0.100	<0.100	<0.100	0.112	0.112	139
	"	1-1.5	X		-	-	-	-	-	-	-	-	91.8
	"	2-2.5	X		-	-	-	-	-	-	-	-	266
	"	3-3.5	X		-	-	-	-	-	-	-	-	207
	"	4-4.5	X		-	-	-	-	-	-	-	-	41.3
AH-2	8/1/2102	0-1	X		44.0	1,590	1,634	<0.100	<0.100	<0.100	<0.100	<0.100	872
	"	1-1.5	X		-	-	-	-	-	-	-	-	335
	"	2-2.5	X		-	-	-	-	-	-	-	-	253
	"	3-3.5	X		-	-	-	-	-	-	-	-	395
	"	4-4.5	X		-	-	-	-	-	-	-	-	422
AH-3	8/1/2012	0-1	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	2,890
	"	1-1.5	X		-	-	-	-	-	-	-	-	1,320
	"	2-2.5	X		-	-	-	-	-	-	-	-	905
	"	3-3.5	X		-	-	-	-	-	-	-	-	653
	"	4-4.5	X		-	-	-	-	-	-	-	-	690

(-) Not Analyzed

☐ Proposed Excavated Depths

COG Operating LLC
BC Federal #10 Tank Battery
Lea County, New Mexico

TETRA TECH

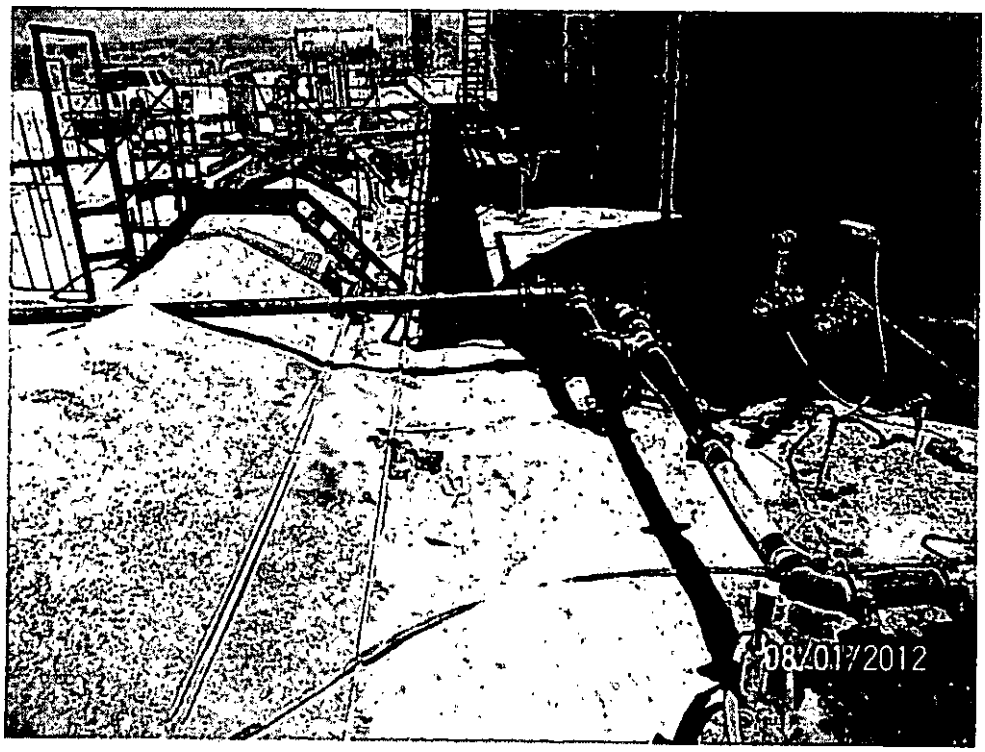


View West – Area of AH-1

View South – Area of AH-2

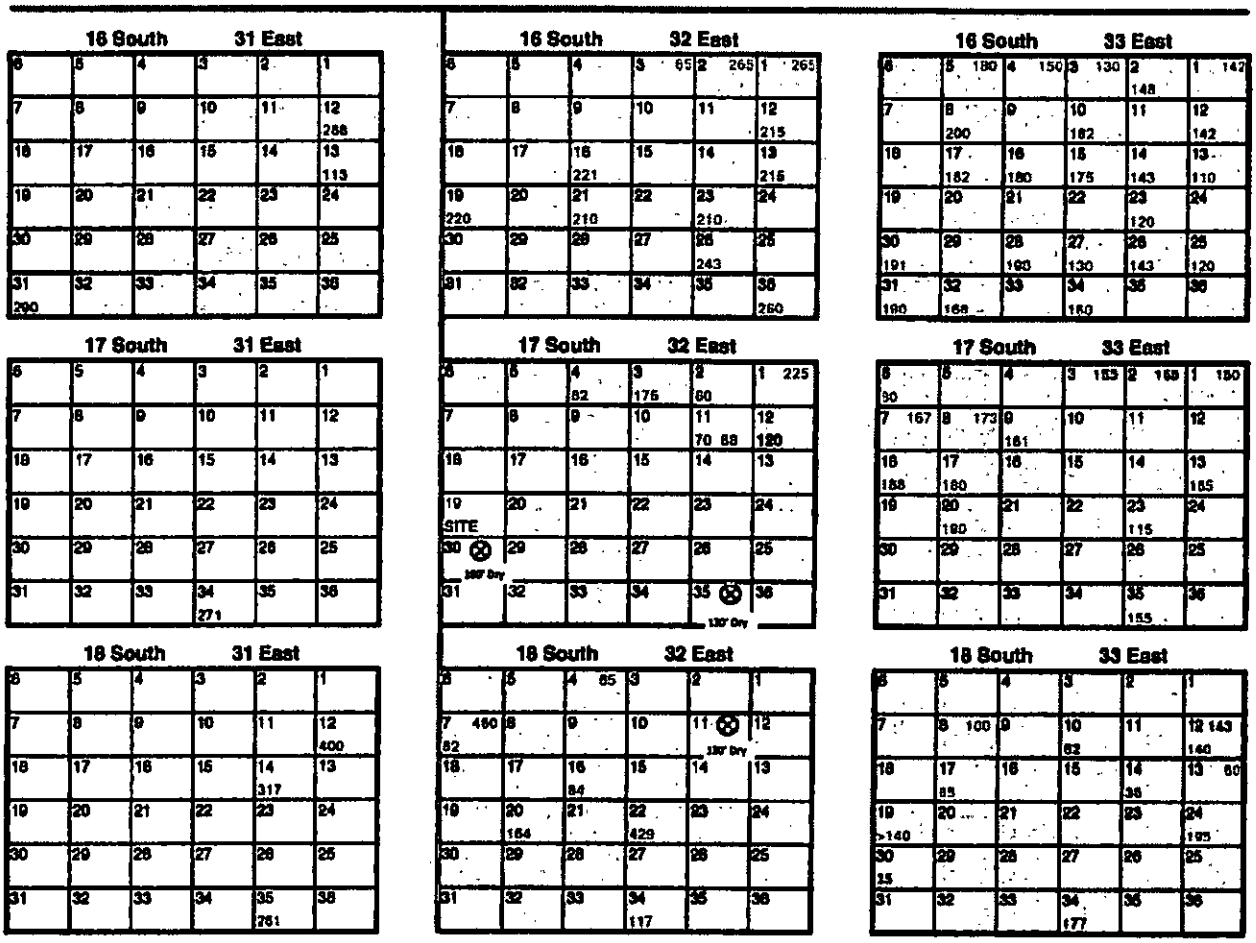
COG Operating LLC
BC Federal #10 Tank Battery
Lea County, New Mexico

TETRA TECH



View North – Area of AH-3

Water Well Data
Average Depth to Groundwater (ft)
COG - BC Federal #10 Tank Battery
Lea County, New Mexico



- 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
- Site - GC Federal #1
- Tetra Tech Temporary well

Summary Report

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

Report Date: August 14, 2012

Work Order: 12080318

Project Location: Lea Co., NM
Project Name: COG/BC Federal #10
Project Number: 114-6401453

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
305783	AH-1 0-1'	soil	2012-08-01	00:00	2012-08-02
305784	AH-1 1-1.5'	soil	2012-08-01	00:00	2012-08-02
305785	AH-1 2-2.5'	soil	2012-08-01	00:00	2012-08-02
305786	AH-1 3-3.5'	soil	2012-08-01	00:00	2012-08-02
305787	AH-1 4-4.5'	soil	2012-08-01	00:00	2012-08-02
305788	AH-2 0-1'	soil	2012-08-01	00:00	2012-08-02
305789	AH-2 1-1.5'	soil	2012-08-01	00:00	2012-08-02
305790	AH-2 2-2.5'	soil	2012-08-01	00:00	2012-08-02
305791	AH-2 3-3.5'	soil	2012-08-01	00:00	2012-08-02
305792	AH-2 4-4.5'	soil	2012-08-01	00:00	2012-08-02
305793	AH-3 0-1'	soil	2012-08-01	00:00	2012-08-02
305794	AH-3 1-1.5'	soil	2012-08-01	00:00	2012-08-02
305795	AH-3 2-2.5'	soil	2012-08-01	00:00	2012-08-02
305796	AH-3 3-3.5'	soil	2012-08-01	00:00	2012-08-02
305797	AH-3 4-4.5'	soil	2012-08-01	00:00	2012-08-02

	BTEX				TPH DRO - NEW	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
305783 - AH-1 0-1'	<0.100 [1]	<0.100	<0.100	**0.112**	**457** Q*	**102** Q*
305788 - AH-2 0-1'	<0.100 [2]	<0.100	<0.100	<0.100	**1590** Q*	**44.0** Q*
305793 - AH-3 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0 Q*	<4.00 Q*

Sample: 305783 - AH-1 0-1'

[1]Dilution due to excessive hydrocarbons.
[2]Dilution due to excessive hydrocarbons.

Param	Flag	Result	Units	RL
Chloride		139	mg/Kg	4

Sample: 305784 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		91.8	mg/Kg	4

Sample: 305785 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		266	mg/Kg	4

Sample: 305786 - AH-1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		207	mg/Kg	4

Sample: 305787 - AH-1 4-4.5'

Param	Flag	Result	Units	RL
Chloride		41.3	mg/Kg	4

Sample: 305788 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		872	mg/Kg	4

Sample: 305789 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		335	mg/Kg	4

Sample: 305790 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		253	mg/Kg	4

SITE INFORMATION

Report Type: Closure

General Site Information:						
Site:	BC Federal #10 Tank Battery					
Company:	COG Operating LLC					
Section, Township and Range	Unit F	Sec 19	T17S	R32E		
Lease Number:	API-30-025-37021					
County:	Lea County					
GPS:	32.82264° N			103.80886° W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From the intersection of Hwy 529 and Hwy 82, travel east on Hwy 82 for 3.2 miles, turn right (SE) on CR 224 and travel for 1.7 miles, turn left (North) and travel 0.1 miles to location.					

Release Data:	
Date Released:	5/17/2012
Type Release:	Oil
Source of Contamination:	Oil Tank
Fluid Released:	10 bbls
Fluids Recovered:	9 bbls

Official Communication:			
Name:	Pat Ellis		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	550 W. Texas Ave. Ste. 1300		1910 N. Big Spring
P.O. Box			
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 682-4559
Fax:	(432) 684-7137		
Email:	pellis@conchoresources.com		Ike.tavarez@tetratech.com

Ranking Criteria		
Depth to Groundwater:	**Ranking Score**	**Site Data**
<50 ft	20	
50-99 ft	10	
>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

NOV 0 1 2012

RECEIVED

TETRA TECH

October 17, 2012

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., BC Federal #10 Tank Battery, Unit F, Section 19, 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 BC Federal #10 Tank Battery, Unit F, Section 19, Township 17 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.82264°, W 103.80886°. 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 17, 2012, and released approximately ten (10) barrels of oil due to the equalizer valve being shut causing the oil tank to overflow. To alleviate the problem, COG personnel opened the equalizer valve. Nine (9) barrels of standing fluids were recovered. The spill measured approximately 10' x 100' and was contained inside the tank battery firewalls. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 21. According to the NMOCD groundwater map, the depth to groundwater in this area is approximately 200' 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

TETRA TECH

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 1, 2012, Tetra Tech personnel inspected and sampled the spill area. Three (3) auger holes (AH-1, AH-2 and AH-3) were installed using a stainless steel hand auger to assess the impacted soils. Soil samples were not collected on the east side of the tank battery, due to the limited impacted area and multiple lines in the area. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all of the submitted samples were all below the RRAL for BTEX and TPH. The chlorides detected in the areas of AH-1 and AH-2 did not show significant impact to these areas. Elevated chloride concentrations were detected in AH-3 in the shallow soils, with a chloride high of 2,890 mg/kg at 0-1', which declined to 653 mg/kg at 3-3.5' below surface.

Remediation and Conclusion

Based on the approved work plan, Tetra Tech personnel supervised the excavation of the site. The excavated area and depths are highlighted in Table 1. The final excavation depths of the soil remediation were met as stated in the approved work plan. Approximately 12 cubic yards of soil were excavated and transported to R360 facility for proper disposal. The excavated area measured approximately 5' x 15' at a depth of approximately 2.0' below surface. The excavated area was then backfilled to grade with clean material.

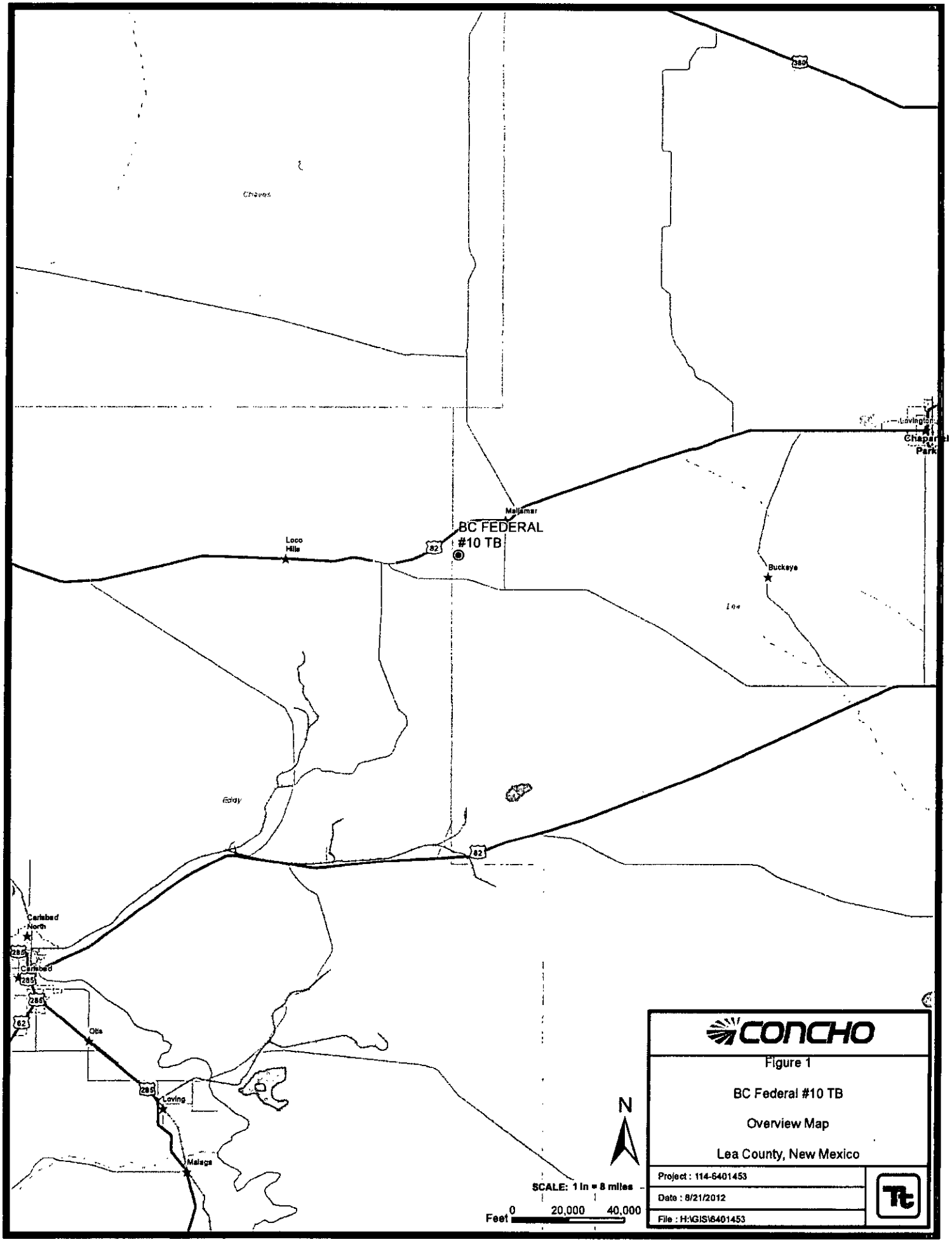
TETRA TECH

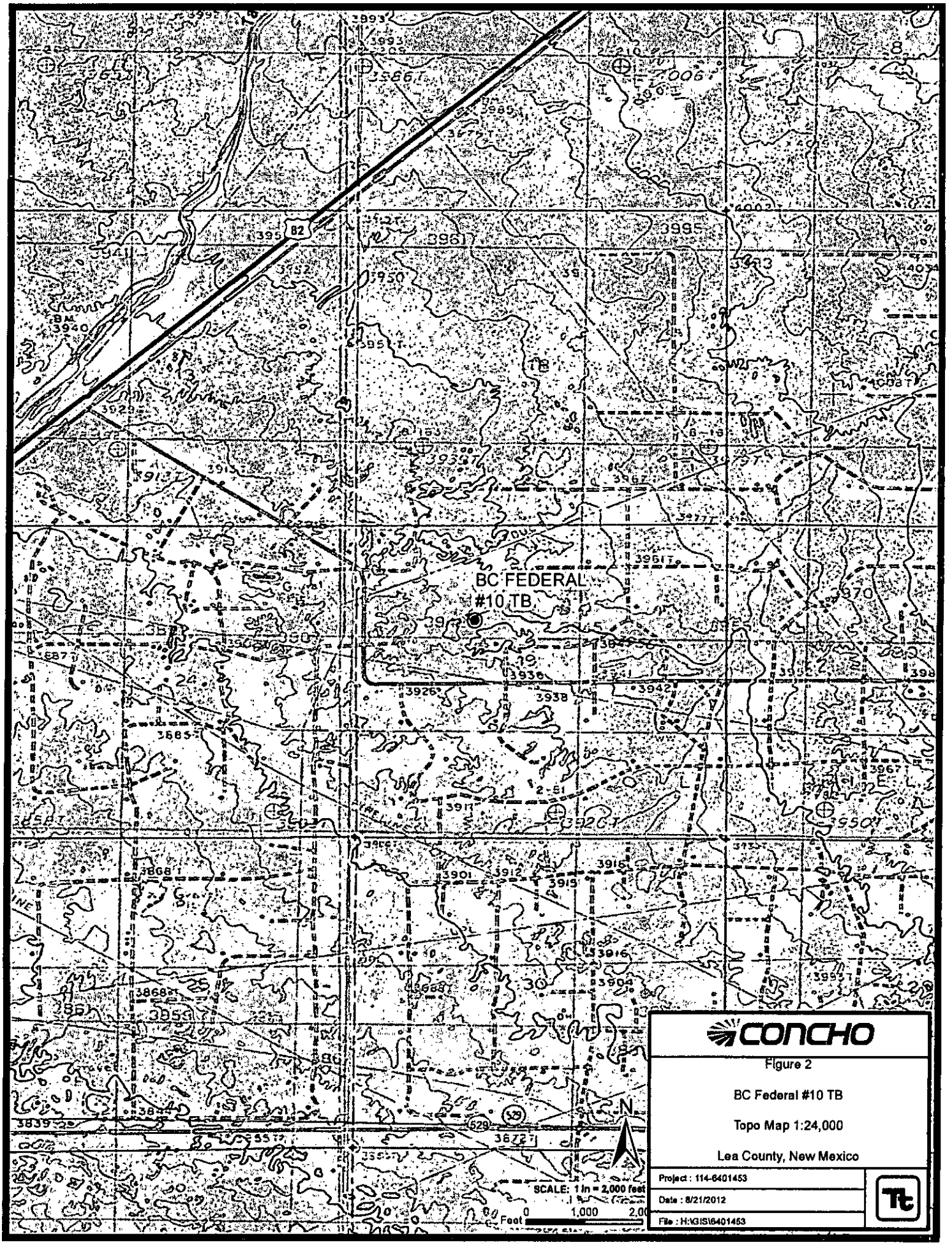
Based on the remedial activities performed, COG request closure of the site. A copy of the C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the remedial activities, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH

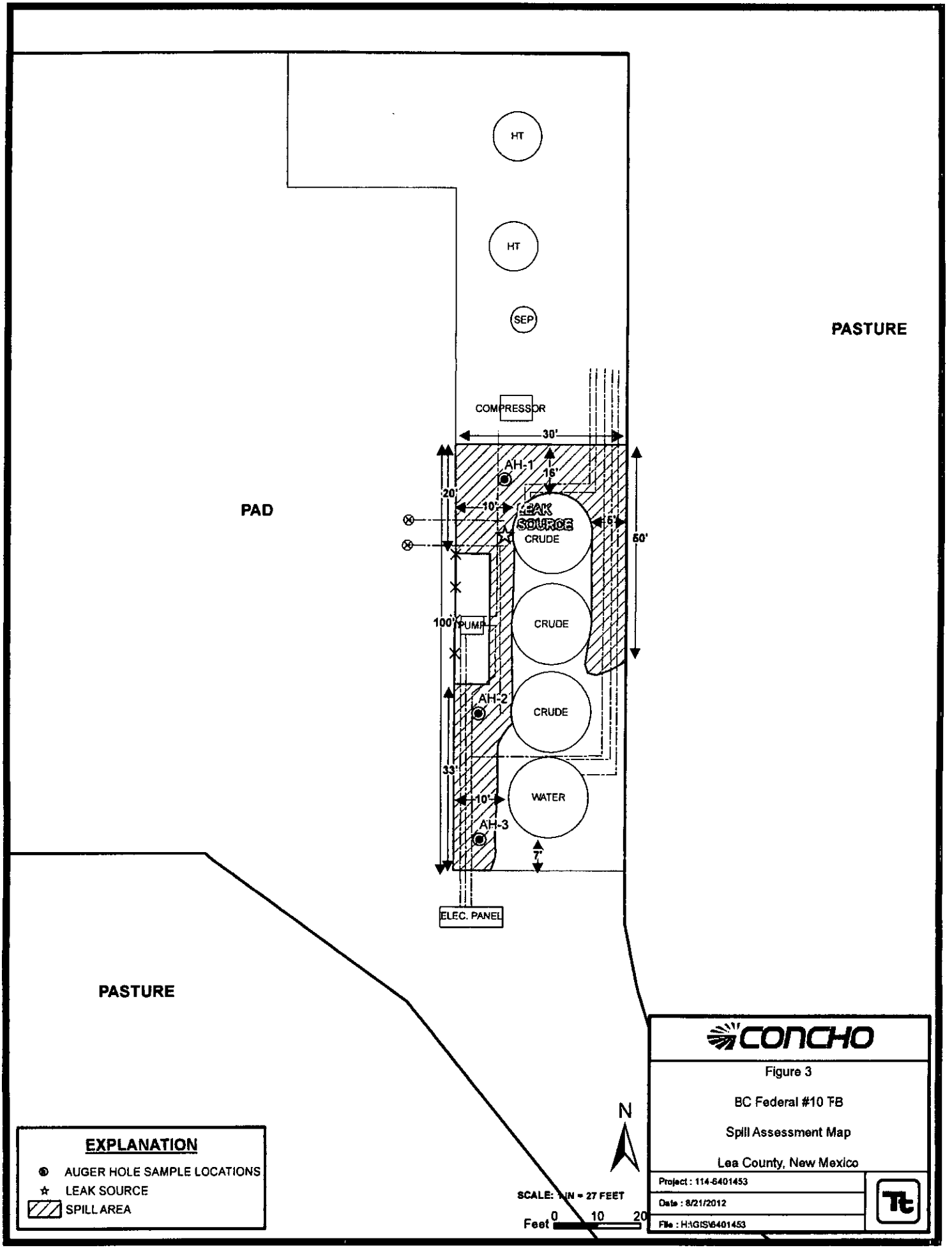
Ike Tavarez, PG
Senior Project Manager

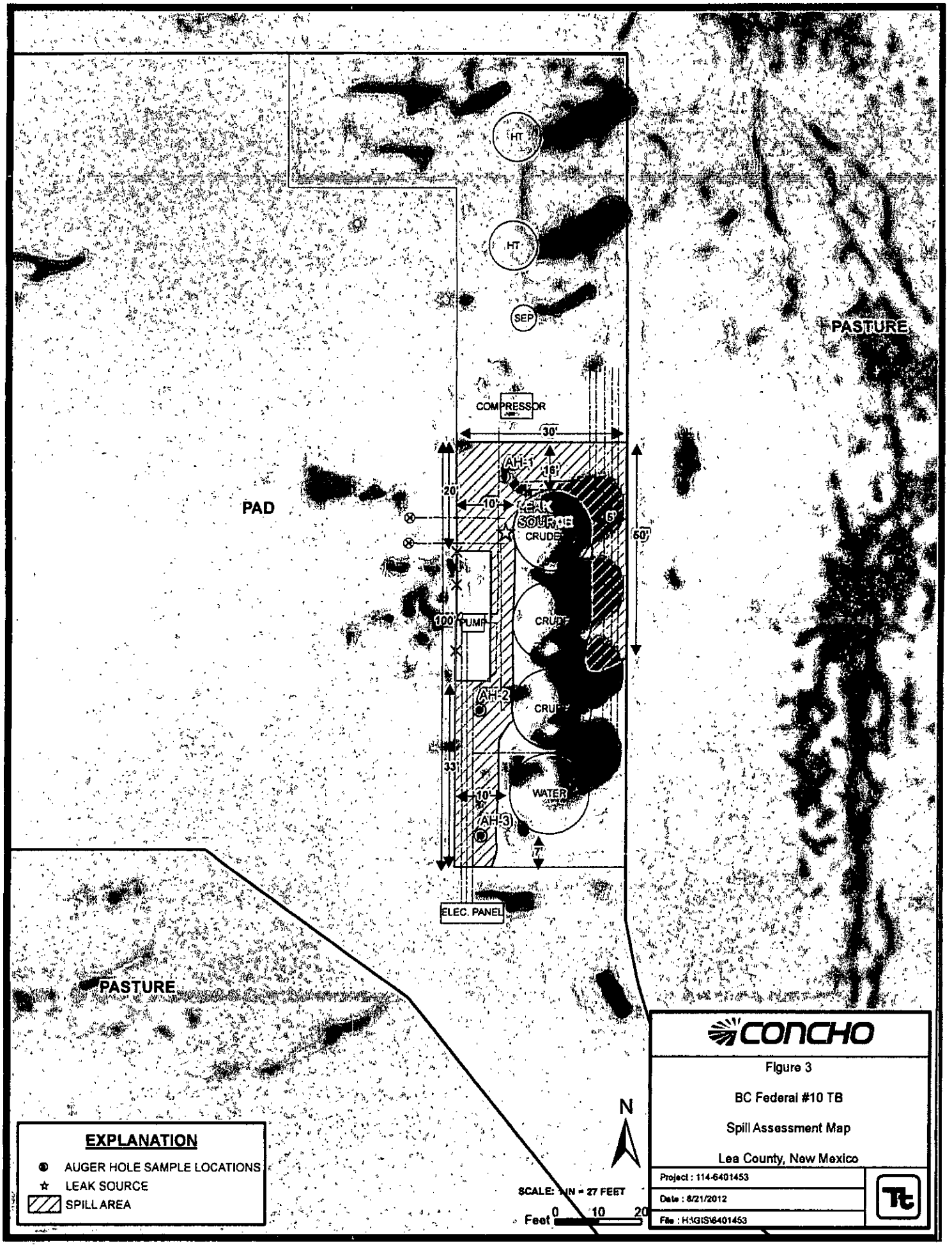
cc: Pat Ellis – COG
cc: Jim Amos - BLM


BC FEDERAL
#10 TB
Maljamar
Loco Hills
Buckeye
Lovington
Chaparral Park
Carlsbad North
Carlsbad
Otis
Loving
Malaga
Chaves
Eddy
Lea
82
285
62
380
N
SCALE: 1 in = 8 miles
Feet 0 20,000 40,000
CONCHO
Figure 1
BC Federal #10 TB
Overview Map
Lea County, New Mexico
Project : 114-6401453
Date : 8/21/2012
File : H:\GIS\6401453
Drawn By: Isabel Marmolejo



Drawn By: Isabel Marmolejo


HT
HT
SEP
PASTURE
COMPRESSOR
30'
AH-1
15'
20'
10'
LEAK SOURCE
5'
50'
PAD
CRUDE
100'
PUMP
CRUDE
AH-2
CRUDE
33'
10'
WATER
AH-3
7'
ELEC. PANEL
PASTURE
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
LEAK SOURCE
SPILL AREA
N
SCALE: 1 IN = 27 FEET
Feet 0 10 20
CONCHO
Figure 3
BC Federal #10 TB
Spill Assessment Map
Lea County, New Mexico
Project : 114-6401453
Date : 8/21/2012
File : H:\GIS\6401453


HT
HT
SEP
PASTURE
COMPRESSOR
30'
AH-1
16'
20'
10'
Leak SOURCE
CRUDE
6'
60'
PAD
100'
PUMP
CRUDE
AH-2
CRUDE
33'
10'
WATER
AH-3
7'
ELEC. PANEL
PASTURE
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
LEAK SOURCE
SPILL AREA
N
SCALE: 1 IN = 27 FEET
Feet 0 10 20
CONCHO
Figure 3
BC Federal #10 TB
Spill Assessment Map
Lea County, New Mexico
Project : 114-6401453
Date : 8/21/2012
File : H:\GIS\6401453
Drawn By: Isabel Marmolejo

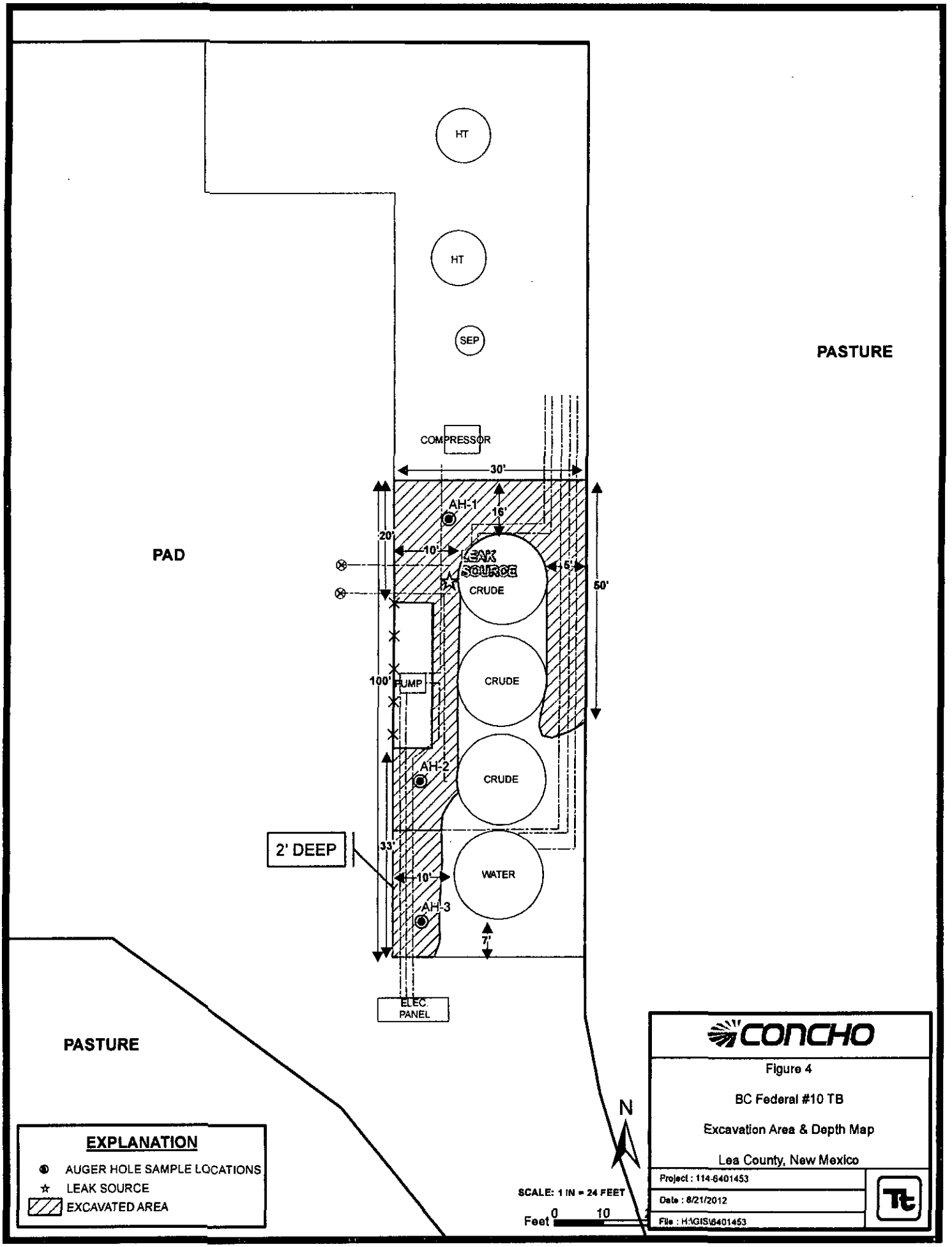

HT
HT
SEP
PASTURE
COMPRESSOR
30'
AH-1
16'
20'
10'
LEAK SOURCE
5'
50'
PAD
CRUDE
CRUDE
CRUDE
100'
PUMP
AH-2
2' DEEP
33'
10'
WATER
AH-3
7'
ELEC. PANEL
PASTURE
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
LEAK SOURCE
EXCAVATED AREA
N
SCALE: 1 IN = 24 FEET
Feet 0 10
CONCHO
Figure 4
BC Federal #10 TB
Excavation Area & Depth Map
Lea County, New Mexico
Project : 114-6401453
Date : 8/21/2012
File : H:\GIS\6401453
Drawn By: Isabel Marmolejo

Table 1
COG Operating LLC.
BC Federal #10
Lea 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	8/1/2012	0-1	X		102	457	559	<0.100	<0.100	<0.100	0.112	0.112	139
	"	1-1.5	X		-	-	-	-	-	-	-	-	91.8
	"	2-2.5	X		-	-	-	-	-	-	-	-	266
	"	3-3.5	X		-	-	-	-	-	-	-	-	207
	"	4-4.5	X		-	-	-	-	-	-	-	-	41.3
AH-2	8/1/2102	0-1	X		44.0	1,590	1,634	<0.100	<0.100	<0.100	<0.100	<0.100	872
	"	1-1.5	X		-	-	-	-	-	-	-	-	335
	"	2-2.5	X		-	-	-	-	-	-	-	-	253
	"	3-3.5	X		-	-	-	-	-	-	-	-	395
	"	4-4.5	X		-	-	-	-	-	-	-	-	422
AH-3	8/1/2012	0-1		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	2,890
	"	1-1.5		X	-	-	-	-	-	-	-	-	1,320
	"	2-2.5	X		-	-	-	-	-	-	-	-	905
	"	3-3.5	X		-	-	-	-	-	-	-	-	653
	"	4-4.5	X		-	-	-	-	-	-	-	-	690

(-) Not Analyzed

Excavated Depths

COG Operating LLC
BC Federal #10 Tank Battery
Lea County, New Mexico

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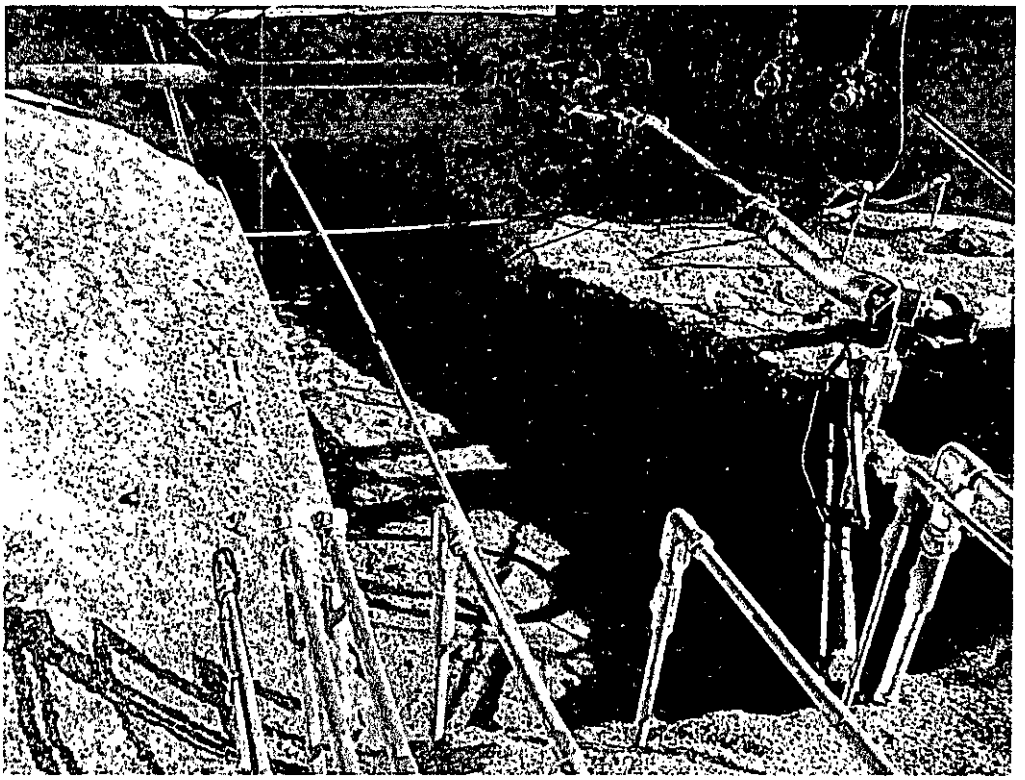
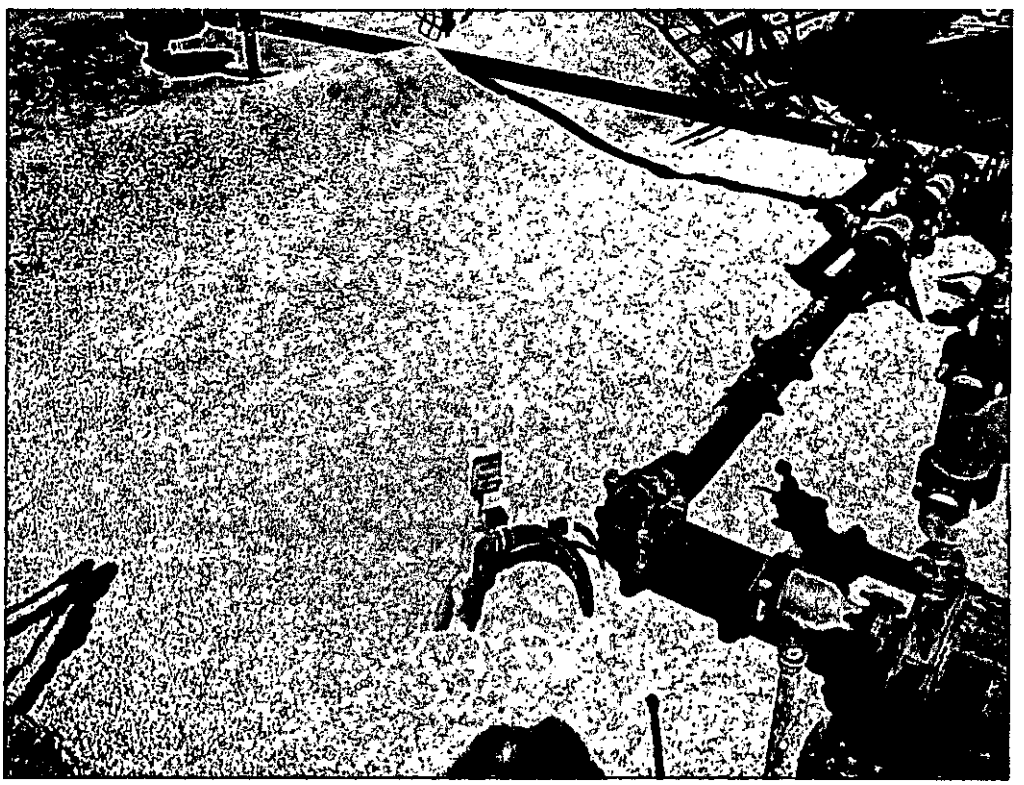
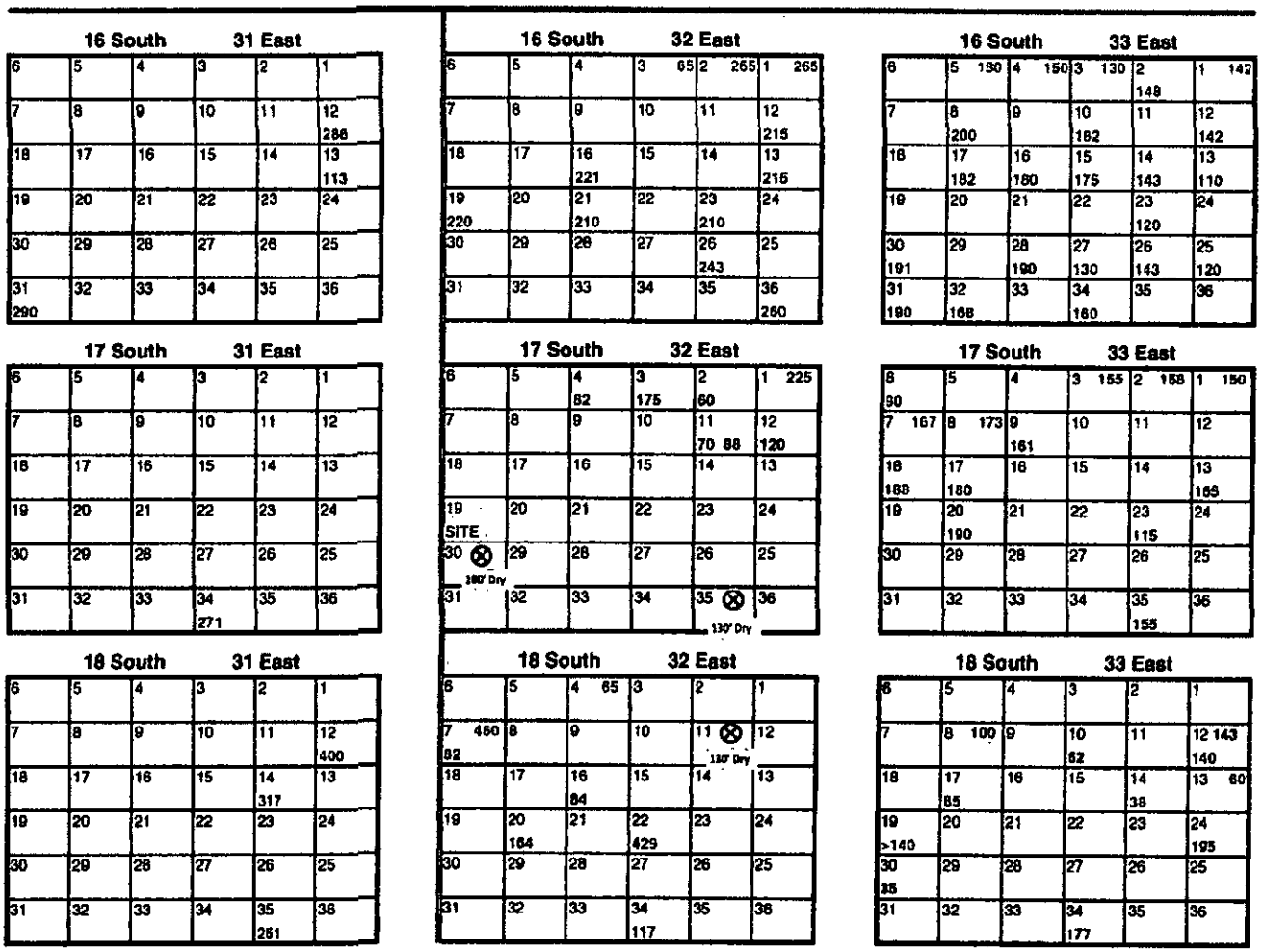


View North – Area of AH-3



Backfill

Water Well Data
Average Depth to Groundwater (ft)
COG - BC Federal #10 Tank Battery
Lea County, New Mexico



- 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
- Site - GC Federal #1
- ⊗ Tetra Tech Temporary well

Summary Report

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

Report Date: August 14, 2012

Work Order: 12080318

Project Location: Lea Co., NM
Project Name: COG/BC Federal #10
Project Number: 114-6401453

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
305783	AH-1 0-1'	soil	2012-08-01	00:00	2012-08-02
305784	AH-1 1-1.5'	soil	2012-08-01	00:00	2012-08-02
305785	AH-1 2-2.5'	soil	2012-08-01	00:00	2012-08-02
305786	AH-1 3-3.5'	soil	2012-08-01	00:00	2012-08-02
305787	AH-1 4-4.5'	soil	2012-08-01	00:00	2012-08-02
305788	AH-2 0-1'	soil	2012-08-01	00:00	2012-08-02
305789	AH-2 1-1.5'	soil	2012-08-01	00:00	2012-08-02
305790	AH-2 2-2.5'	soil	2012-08-01	00:00	2012-08-02
305791	AH-2 3-3.5'	soil	2012-08-01	00:00	2012-08-02
305792	AH-2 4-4.5'	soil	2012-08-01	00:00	2012-08-02
305793	AH-3 0-1'	soil	2012-08-01	00:00	2012-08-02
305794	AH-3 1-1.5'	soil	2012-08-01	00:00	2012-08-02
305795	AH-3 2-2.5'	soil	2012-08-01	00:00	2012-08-02
305796	AH-3 3-3.5'	soil	2012-08-01	00:00	2012-08-02
305797	AH-3 4-4.5'	soil	2012-08-01	00:00	2012-08-02

	BTEX				TPH DRO - NEW	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
305783 - AH-1 0-1'	<0.100 [1]	<0.100	<0.100	**0.112**	**457** Qs	**102** Qs
305788 - AH-2 0-1'	<0.100 [2]	<0.100	<0.100	<0.100	**1590** Qs	**44.0** Qs
305793 - AH-3 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0 Qs	<4.00 Qs

Sample: 305783 - AH-1 0-1'

[1] Dilution due to excessive hydrocarbons.
[2] Dilution due to excessive hydrocarbons.

Param	Flag	Result	Units	RL
Chloride		**139**	mg/Kg	4

Sample: 305784 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**91.8**	mg/Kg	4

Sample: 305785 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**266**	mg/Kg	4

Sample: 305786 - AH-1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**207**	mg/Kg	4

Sample: 305787 - AH-1 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**41.3**	mg/Kg	4

Sample: 305788 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		**872**	mg/Kg	4

Sample: 305789 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**335**	mg/Kg	4

Sample: 305790 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**253**	mg/Kg	4

Sample: 305791 - AH-2 3-3.5'

Param	Flag	Result	Units	RL
Chloride		395	mg/Kg	4

Sample: 305792 - AH-2 4-4.5'

Param	Flag	Result	Units	RL
Chloride		422	mg/Kg	4

Sample: 305793 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		2890	mg/Kg	4

Sample: 305794 - AH-3 1-1.5'

Param	Flag	Result	Units	RL
Chloride		1320	mg/Kg	4

Sample: 305795 - AH-3.2-2.5'

Param	Flag	Result	Units	RL
Chloride		905	mg/Kg	4

Sample: 305796 - AH-3 3-3.5'

Param	Flag	Result	Units	RL
Chloride		653	mg/Kg	4

Sample: 305797 - AH-3 4-4.5'

Param	Flag	Result	Units	RL
Chloride		690	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: August 14, 2012

Work Order: 12080318

Project Location: Lea Co., NM
Project Name: COG/BC Federal #10
Project Number: 114-6401453

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
305783	AH-1 0-1'	soil	2012-08-01	00:00	2012-08-02
305784	AH-1 1-1.5'	soil	2012-08-01	00:00	2012-08-02
305785	AH-1 2-2.5'	soil	2012-08-01	00:00	2012-08-02
305786	AH-1 3-3.5'	soil	2012-08-01	00:00	2012-08-02
305787	AH-1 4-4.5'	soil	2012-08-01	00:00	2012-08-02
305788	AH-2 0-1'	soil	2012-08-01	00:00	2012-08-02
305789	AH-2 1-1.5'	soil	2012-08-01	00:00	2012-08-02
305790	AH-2 2-2.5'	soil	2012-08-01	00:00	2012-08-02
305791	AH-2 3-3.5'	soil	2012-08-01	00:00	2012-08-02
305792	AH-2 4-4.5'	soil	2012-08-01	00:00	2012-08-02
305793	AH-3 0-1'	soil	2012-08-01	00:00	2012-08-02
305794	AH-3 1-1.5'	soil	2012-08-01	00:00	2012-08-02
305795	AH-3 2-2.5'	soil	2012-08-01	00:00	2012-08-02
305796	AH-3 3-3.5'	soil	2012-08-01	00:00	2012-08-02
305797	AH-3 4-4.5'	soil	2012-08-01	00:00	2012-08-02

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

This report consists of a total of 27 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

Report Contents

Case Narrative

Samples for project COG/BC Federal #10 were received by TraceAnalysis, Inc. on 2012-08-02 and assigned to work order 12080318. Samples for work order 12080318 were received intact at a temperature of 4.7 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	79441	2012-08-07 at 15:57	93714	2012-08-07 at 15:57
Chloride (Titration)	SM 4500-Cl B	79384	2012-08-05 at 10:03	93641	2012-08-05 at 20:28
Chloride (Titration)	SM 4500-Cl B	79384	2012-08-05 at 10:03	93642	2012-08-05 at 20:37
Chloride (Titration)	SM 4500-Cl B	79384	2012-08-05 at 10:03	93643	2012-08-05 at 20:42
TPH DRO - NEW	S 8015 D	79515	2012-08-10 at 08:00	93797	2012-08-10 at 13:40
TPH GRO	S 8015 D	79441	2012-08-07 at 15:57	93715	2012-08-07 at 15:57

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 12080318 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: 305783 - AH-1 0-1'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	93714	Date Analyzed:	2012-08-07	Analyzed By:	ZLM
Prep Batch:	79441	Sample Preparation:	2012-08-07	Prepared By:	ZLM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene [1]	U	1	<0.100	mg/Kg	5	0.0200
Toluene	U	1	<0.100	mg/Kg	5	0.0200
Ethylbenzene	U	1	<0.100	mg/Kg	5	0.0200
Xylene		1	**0.112**	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.84	mg/Kg	5	2.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)			2.46	mg/Kg	5	2.00	123	70 - 130

Sample: 305783 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93641	Date Analyzed:	2012-08-05	Analyzed By:	AR
Prep Batch:	79384	Sample Preparation:	2012-08-05	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**139**	mg/Kg	5	4.00

Sample: 305783 - AH-1 0-1'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	93797	Date Analyzed:	2012-08-10	Analyzed By:	CM
Prep Batch:	79515	Sample Preparation:	2012-08-10	Prepared By:	CM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Q-	1	**457**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			139	mg/Kg	1	100	139	59.9 - 168

Sample: 305783 - AH-1 0-1'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	93715	Date Analyzed:	2012-08-07	Analyzed By:	ZLM
Prep Batch:	79441	Sample Preparation:	2012-08-07	Prepared By:	ZLM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs	1	**102**	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.68	mg/Kg	5	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	2.81	mg/Kg	5	2.00	140	70 - 130

Sample: 305784 - AH-1 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93642	Date Analyzed:	2012-08-05	Analyzed By:	AR
Prep Batch:	79384	Sample Preparation:	2012-08-05	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**91.8**	mg/Kg	5	4.00

Sample: 305785 - AH-1 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93642	Date Analyzed:	2012-08-05	Analyzed By:	AR
Prep Batch:	79384	Sample Preparation:	2012-08-05	Prepared By:	AR

continued ...

sample 305785 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**266**	mg/Kg	5	4.00

Sample: 305786 - AH-1 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93642	Date Analyzed:	2012-08-05	Analyzed By:	AR
Prep Batch:	79384	Sample Preparation:	2012-08-05	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**207**	mg/Kg	5	4.00

Sample: 305787 - AH-1 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93642	Date Analyzed:	2012-08-05	Analyzed By:	AR
Prep Batch:	79384	Sample Preparation:	2012-08-05	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**41.3**	mg/Kg	5	4.00

Sample: 305788 - AH-2 0-1'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	93714	Date Analyzed:	2012-08-07	Analyzed By:	ZLM
Prep Batch:	79441	Sample Preparation:	2012-08-07	Prepared By:	ZLM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene [2]	U	1	<0.100	mg/Kg	5	0.0200
Toluene	U	1	<0.100	mg/Kg	5	0.0200
Ethylbenzene	U	1	<0.100	mg/Kg	5	0.0200
Xylene		1	<0.100	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.91	mg/Kg	5	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			2.00	mg/Kg	5	2.00	100	70 - 130

Sample: 305788 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93642	Date Analyzed:	2012-08-05	Analyzed By:	AR
Prep Batch:	79384	Sample Preparation:	2012-08-05	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**872**	mg/Kg	5	4.00

Sample: 305788 - AH-2 0-1'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	93797	Date Analyzed:	2012-08-10	Analyzed By:	CM
Prep Batch:	79515	Sample Preparation:	2012-08-10	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	1	**1590**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane Qsr	Qsr		225	mg/Kg	5	100	225	59.9 - 168

Sample: 305788 - AH-2 0-1'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	93715	Date Analyzed:	2012-08-07	Analyzed By:	ZLM
Prep Batch:	79441	Sample Preparation:	2012-08-07	Prepared By:	ZLM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Q*	1	**44.0**	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.67	mg/Kg	5	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)			1.79	mg/Kg	5	2.00	90	70 - 130

Sample: 305789 - AH-2 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93642	Date Analyzed:	2012-08-05	Analyzed By:	AR
Prep Batch:	79384	Sample Preparation:	2012-08-05	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**335**	mg/Kg	5	4.00

Sample: 305790 - AH-2 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93642	Date Analyzed:	2012-08-05	Analyzed By:	AR
Prep Batch:	79384	Sample Preparation:	2012-08-05	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**253**	mg/Kg	5	4.00

Sample: 305791 - AH-2 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93642	Date Analyzed:	2012-08-05	Analyzed By:	AR
Prep Batch:	79384	Sample Preparation:	2012-08-05	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**395**	mg/Kg	5	4.00

Sample: 305792 - AH-2 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93642	Date Analyzed:	2012-08-05	Analyzed By:	AR
Prep Batch:	79384	Sample Preparation:	2012-08-05	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**422**	*mg/Kg*	*5*	*4.00*

Sample: 305793 - AH-3 0-1'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	93714	Date Analyzed:	2012-08-07	Analyzed By:	ZLM
Prep Batch:	79441	Sample Preparation:	2012-08-07	Prepared By:	ZLM

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.77	mg/Kg	1	2.00	88	70 - 130
4-Bromofluorobenzene (4-BFB)			2.01	mg/Kg	1	2.00	100	70 - 130

Sample: 305793 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93642	Date Analyzed:	2012-08-05	Analyzed By:	AR
Prep Batch:	79384	Sample Preparation:	2012-08-05	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**2890**		mg/Kg	10	4.00

Sample: 305793 - AH-3 0-1'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	93797	Date Analyzed:	2012-08-10	Analyzed By:	CM
Prep Batch:	79515	Sample Preparation:	2012-08-10	Prepared By:	CM

Parameter	Flag	Cert	Result	RL	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			107	mg/Kg	1	100	107	59.9 - 168

Sample: 305793 - AH-3 0-1'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	93715	Date Analyzed:	2012-08-07	Analyzed By:	ZLM
Prep Batch:	79441	Sample Preparation:	2012-08-07	Prepared By:	ZLM

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.71	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.97	mg/Kg	1	2.00	98	70 - 130

Sample: 305794 - AH-3 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93643	Date Analyzed:	2012-08-05	Analyzed By:	AR
Prep Batch:	79384	Sample Preparation:	2012-08-05	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**1320**		mg/Kg	10	4.00

Sample: 305795 - AH-3 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93643	Date Analyzed:	2012-08-05	Analyzed By:	AR
Prep Batch:	79384	Sample Preparation:	2012-08-05	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**905**		mg/Kg	10	4.00

Sample: 305796 - AH-3 3-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93643	Date Analyzed:	2012-08-05	Analyzed By:	AR
Prep Batch:	79384	Sample Preparation:	2012-08-05	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**653**		mg/Kg	10	4.00

Sample: 305797 - AH-3 4-4.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	93643	Date Analyzed:	2012-08-05	Analyzed By:	AR
Prep Batch:	79384	Sample Preparation:	2012-08-05	Prepared By:	AR

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**690**		mg/Kg	5	4.00

Method Blanks

Method Blank (1) QC Batch: 93641

QC Batch: 93641 | Date Analyzed: 2012-08-05 | Analyzed By: AR
Prep Batch: 79384 | QC Preparation: 2012-08-05 | Prepared By: AR

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

Method Blank (1) QC Batch: 93642

QC Batch: 93642 | Date Analyzed: 2012-08-05 | Analyzed By: AR
Prep Batch: 79384 | QC Preparation: 2012-08-05 | Prepared By: AR

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

Method Blank (1) QC Batch: 93643

QC Batch: 93643 | Date Analyzed: 2012-08-05 | Analyzed By: AR
Prep Batch: 79384 | QC Preparation: 2012-08-05 | Prepared By: AR

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

Method Blank (1) QC Batch: 93714

QC Batch: 93714 | Date Analyzed: 2012-08-07 | Analyzed By: ZLM
Prep Batch: 79441 | QC Preparation: 2012-08-07 | Prepared By: ZLM

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.74	mg/Kg	1	2.00	87	70 - 130
4-Bromofluorobenzene (4-BFB)			1.79	mg/Kg	1	2.00	90	70 - 130

Method Blank (1) QC Batch: 93715

QC Batch: 93715 | Date Analyzed: 2012-08-07 | Analyzed By: ZLM
Prep Batch: 79441 | QC Preparation: 2012-08-07 | Prepared By: ZLM

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)			1.77	mg/Kg	1	2.00	88	70 - 130
4-Bromofluorobenzene (4-BFB)			1.77	mg/Kg	1	2.00	88	70 - 130

Method Blank (1) QC Batch: 93797

QC Batch: 93797 | Date Analyzed: 2012-08-10 | Analyzed By: CM
Prep Batch: 79515 | QC Preparation: 2012-08-10 | Prepared By: CM

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<6.50	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			108	mg/Kg	1	100	108	59.9 - 168

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 93641 | Date Analyzed: 2012-08-05 | Analyzed By: AR
Prep Batch: 79384 | QC Preparation: 2012-08-05 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2480	mg/Kg	1	2500	<3.85	99	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			2530	mg/Kg	1	2500	<3.85	101	85 - 115	2	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 93642 | Date Analyzed: 2012-08-05 | Analyzed By: AR
Prep Batch: 79384 | QC Preparation: 2012-08-05 | Prepared By: AR

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

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2490	mg/Kg	1	2500	<3.85	100	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: 93643 | Date Analyzed: 2012-08-05 | Analyzed By: AR
Prep Batch: 79384 | QC Preparation: 2012-08-05 | Prepared By: AR

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

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2600	mg/Kg	1	2500	<3.85	104	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: 93714 | Date Analyzed: 2012-08-07 | Analyzed By: ZLM
Prep Batch: 79441 | QC Preparation: 2012-08-07 | Prepared By: ZLM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.86	mg/Kg	1	2.00	<0.00365	93	75.4 - 120
Toluene		1	1.82	mg/Kg	1	2.00	<0.00816	91	74.9 - 120
Ethylbenzene		1	1.82	mg/Kg	1	2.00	<0.00560	91	78.1 - 120
Xylene		1	5.50	mg/Kg	1	6.00	<0.00460	92	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	1.78	mg/Kg	1	2.00	<0.00365	89	75.4 - 120	4	20
Toluene		1	1.78	mg/Kg	1	2.00	<0.00816	89	74.9 - 120	2	20
Ethylbenzene		1	1.80	mg/Kg	1	2.00	<0.00560	90	78.1 - 120	1	20
Xylene		1	5.44	mg/Kg	1	6.00	<0.00460	91	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)	1.78	1.70	mg/Kg	1	2.00	89	85	70 - 130
4-Bromofluorobenzene (4-BFB)	1.84	1.87	mg/Kg	1	2.00	92	94	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 93715 | Date Analyzed: 2012-08-07 | Analyzed By: ZLM
Prep Batch: 79441 | QC Preparation: 2012-08-07 | Prepared By: ZLM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	16.9	mg/Kg	1	20.0	<0.359	84	68.9 - 120

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.1	mg/Kg	1	20.0	<0.359	86	68.9 - 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)	1.89	1.90	mg/Kg	1	2.00	94	95	70 - 130
4-Bromofluorobenzene (4-BFB)	1.85	1.87	mg/Kg	1	2.00	92	94	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 93797 | Date Analyzed: 2012-08-10 | Analyzed By: CM
Prep Batch: 79515 | QC Preparation: 2012-08-10 | Prepared By: CM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	230	mg/Kg	1	250	<6.50	92	72.7 - 120

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	204	mg/Kg	1	250	<6.50	82	72.7 - 120	12	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	103	94.3	mg/Kg	1	100	103	94	59.9 - 168

Matrix Spike (MS-1) Spiked Sample: 305783

QC Batch: 93641 | Date Analyzed: 2012-08-05 | Analyzed By: AR
Prep Batch: 79384 | QC Preparation: 2012-08-05 | Prepared By: AR

continued ...

matrix spikes continued ...

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2380	mg/Kg	5	2500	139	90	79.4 - 120.6

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2390	mg/Kg	5	2500	139	90	79.4 - 120.6	0	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: 305793

QC Batch: 93642 | Date Analyzed: 2012-08-05 | Analyzed By: AR
Prep Batch: 79384 | QC Preparation: 2012-08-05 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			5030	mg/Kg	10	2500	2890	86	79.4 - 120.6

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			5210	mg/Kg	10	2500	2890	93	79.4 - 120.6	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: 305797

QC Batch: 93643 | Date Analyzed: 2012-08-05 | Analyzed By: AR
Prep Batch: 79384 | QC Preparation: 2012-08-05 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3140	mg/Kg	5	2500	690	98	79.4 - 120.6

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			3170	mg/Kg	5	2500	690	99	79.4 - 120.6	1	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: 305772

QC Batch: 93714 Date Analyzed: 2012-08-07 Analyzed By: ZLM
Prep Batch: 79441 QC Preparation: 2012-08-07 Prepared By: ZLM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.70	mg/Kg	1	2.00	<0.00365	85	37.6 - 142
Toluene		1	1.83	mg/Kg	1	2.00	<0.00816	92	38.6 - 153
Ethylbenzene		1	1.92	mg/Kg	1	2.00	<0.00560	96	36.7 - 172
Xylene		1	5.80	mg/Kg	1	6.00	<0.00460	97	36.7 - 173

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.73	mg/Kg	1	2.00	<0.00365	86	37.6 - 142	2	20
Toluene		1	1.86	mg/Kg	1	2.00	<0.00816	93	38.6 - 153	2	20
Ethylbenzene		1	1.95	mg/Kg	1	2.00	<0.00560	98	36.7 - 172	2	20
Xylene		1	5.89	mg/Kg	1	6.00	<0.00460	98	36.7 - 173	2	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.89	1.88	mg/Kg	1	2	94	94	70 - 130
4-Bromofluorobenzene (4-BFB)	1.90	1.90	mg/Kg	1	2	95	95	70 - 130

Matrix Spike (MS-1) Spiked Sample: 305772

QC Batch: 93715 Date Analyzed: 2012-08-07 Analyzed By: ZLM
Prep Batch: 79441 QC Preparation: 2012-08-07 Prepared By: ZLM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	15.5	mg/Kg	1	20.0	1.14	72	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	Qs	Qs	14.3	mg/Kg	1	20.0	1.14	66	68.9 - 120	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
Trifluorotoluene (TFT)	1.72	1.64	mg/Kg	1	2	86	82	70 - 130
4-Bromofluorobenzene (4-BFB)	2.06	2.00	mg/Kg	1	2	103	100	70 - 130

Matrix Spike (MS-1) Spiked Sample: 305783

QC Batch: 93797 | Date Analyzed: 2012-08-10 | Analyzed By: CM
Prep Batch: 79515 | QC Preparation: 2012-08-10 | Prepared By: CM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	Qs	Qs	1470	mg/Kg	1	250	457	405	45.3 - 139

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	Qs	Qs	1310	mg/Kg	1	250	457	341	45.3 - 139	12	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	194	190	mg/Kg	1	100	194	190	59.9 - 168

Calibration Standards

Standard (CCV-1)

QC Batch: 93641 | Date Analyzed: 2012-08-05 | Analyzed By: AR

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

Standard (CCV-2)

QC Batch: 93641 | Date Analyzed: 2012-08-05 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.6	100	85 - 115	2012-08-05

Standard (CCV-1)

QC Batch: 93642 | Date Analyzed: 2012-08-05 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.0	99	85 - 115	2012-08-05

Standard (CCV-2)

QC Batch: 93642 | Date Analyzed: 2012-08-05 | Analyzed By: AR

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

Standard (CCV-1)

QC Batch: 93643 | Date Analyzed: 2012-08-05 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	102	102	85 - 115	2012-08-05

Standard (CCV-2)

QC Batch: 93643 | Date Analyzed: 2012-08-05 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	98.5	98	85 - 115	2012-08-05

Standard (CCV-1)

QC Batch: 93714 | Date Analyzed: 2012-08-07 | Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0890	89	80 - 120	2012-08-07
Toluene		1	mg/kg	0.100	0.0882	88	80 - 120	2012-08-07
Ethylbenzene		1	mg/kg	0.100	0.0893	89	80 - 120	2012-08-07
Xylene		1	mg/kg	0.300	0.269	90	80 - 120	2012-08-07

Standard (CCV-2)

QC Batch: 93714 | Date Analyzed: 2012-08-07 | Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0900	90	80 - 120	2012-08-07
Toluene		1	mg/kg	0.100	0.0895	90	80 - 120	2012-08-07
Ethylbenzene		1	mg/kg	0.100	0.0880	88	80 - 120	2012-08-07
Xylene		1	mg/kg	0.300	0.264	88	80 - 120	2012-08-07

Standard (CCV-3)

QC Batch: 93714 | Date Analyzed: 2012-08-07 | Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0849	85	80 - 120	2012-08-07
Toluene		1	mg/kg	0.100	0.0835	84	80 - 120	2012-08-07
Ethylbenzene		1	mg/kg	0.100	0.0822	82	80 - 120	2012-08-07
Xylene		1	mg/kg	0.300	0.246	82	80 - 120	2012-08-07

Standard (CCV-1)

QC Batch: 93715 | Date Analyzed: 2012-08-07 | Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.842	84	80 - 120	2012-08-07

Standard (CCV-2)

QC Batch: 93715 | Date Analyzed: 2012-08-07 | Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.847	85	80 - 120	2012-08-07

Standard (CCV-3)

QC Batch: 93715 | Date Analyzed: 2012-08-07 | Analyzed By: ZLM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.801	80	80 - 120	2012-08-07

Standard (CCV-1)

QC Batch: 93797 | Date Analyzed: 2012-08-10 | 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	225	90	80 - 120	2012-08-10

Standard (CCV-2)

QC Batch: 93797 | Date Analyzed: 2012-08-10 | 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	228	91	80 - 120	2012-08-10

Standard (CCV-3)

QC Batch: 93797 | Date Analyzed: 2012-08-10 | 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	217	87	80 - 120	2012-08-10

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 Dilution due to excessive hydrocarbons.
2 Dilution due to excessive hydrocarbons.

Attachments

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

12080318

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 2

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

CLIENT NAME: COG
SITE MANAGER: Ike Tavarez
PROJECT NO.: 114-6400671 433
PROJECT NAME: COG / BC Federal #10 Lea County NM.

ANALYSIS REQUEST (Circle or Specify Method No.): BTEX 8021B (circled), TPH 8015 MOD. (circled) 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 (circled), Gamma Spec., Alpha Beta (Air), PLM (Asbestos), Major Anions/Cations, pH, TDS

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION		NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD.	Chloride
505783	8/1/12		S		X	AH1	0-1	1				X		X	X	X
784							1-1.5	1				X				X
785							2-2.5	1				X				X
786							3-3.5	1				X				X
787							4-4.5	1				X				X
788						AH2	0-1	1				X		X	X	X
789							1-1.5	1				X				X
790							2-2.5	1				X				X
791							3-3.5	1				X				X
792							4-4.5	1				X				X

RELINQUISHED BY: (Signature) [signature] Date: 8/2/12 Time: — RECEIVED BY: (Signature) [signature] Date: 8/2/12 Time: 11:40
RELINQUISHED BY: (Signature) [signature] Date: 8/3/12 Time: 11:30 RECEIVED BY: (Signature) Date: Time:
RELINQUISHED BY: (Signature) Date: Time: RECEIVED BY: (Signature) Date: Time:

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

SAMPLED BY: (Print & Initial) Brandon [initials] Date: 8/1/12 Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: ZN473 73 OTHER:
TETRA TECH CONTACT PERSON: Ike Tavarez
Results by:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 4.6°C 3.8/3.7

REMARKS: Run deeper samples if TPH exceeds 5,000 mg/kg.
proj # changed - per Ike Tavarez - 8/3/12 - 9:00 - phone

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

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

Midland - [illegible]

12C80318

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: COG
SITE MANAGER: Ike Tavarez
PROJECT NO.: 114-6400677 1453
PROJECT NAME: COG / BC Federal #10
LeaCo ~~Eddy co~~ NM

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	BTEX 8021B (circled)	TPH 8015 MOD. (circled) 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 (circled)	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
793	8/1		S		X	AH3 0-1	1				X		Y	Y											Y				
794	|		|		|	1-1.5	1				X														Y				
795	|		|		|	2-2.5	1				X														Y				
796	|		|		|	3-3.5	1				X														Y				
797	|		|		|	4-4.5	1				X														Y				

RELINQUISHED BY: (Signature) [signature] Date: 8/2/12 Time: 16:39
RECEIVED BY: (Signature) [signature] Date: 8/2/12 Time: 16:44
RELINQUISHED BY: (Signature) [signature] Date: 8/3/12 Time: 11:50
RECEIVED BY: (Signature) Date: Time:
RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature) [signature] TA
DATE: 8/3/12 TIME: 9:30

SAMPLED BY: (Print & Initial) Brandon BJ Date: 8/1/12 Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: Z OTHER:
TETRA TECH CONTACT PERSON: Ike Tavarez
Results by:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 3.8/3.7
REMARKS: See remarks of Pg 1

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

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 264238

CONDITIONS

Operator: Spur Energy Partners LLC 9655 Katy Freeway Houston, TX 77024	OGRID: 328947
	Action Number: 264238
	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

CONDITIONS

Created By	Condition	Condition Date
jharimon	Final remediation and reclamation shall take place in accordance with 19.15.29.12 and 19.15.29.13 NMAC once the site is no longer being used for oil and gas operations.	9/12/2023