APPROVED

SITE INFORMATION

Report Type: Closure Report

General Site Information:						
Site:	Crockett State #2H					
Company:	COG Operating LLC					
Section, Township and Range	Unit H	Sec 20	T 21S	R 33E		
Lease Number:	API-30-025-41080					
County:	Lea County					
GPS:	32.46523° N			103.58663° W		
Surface Owner:	State					
Mineral Owner:						
Directions:	From intersection of Hwy 176 and CR 27-A (Marathon Road), go 2.2 miles east on Hwy 176 and turn right (south) go 3.7 miles on lease road, turn right (west) go 4.8 miles and turn right (north) and go 1.9 miles to location.					

Release Data:	
Date Released:	1/25/2014
Type Release:	Oil and Produce Water
Source of Contamination:	Load Line
Fluid Released:	7 bbls of Oil, 120 bbls of Produced Water
Fluids Recovered:	5 bbls of Oil, 15 bbls of Produced Water

Official Communication:			
Name:	Robert McNeill		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	One Concho Center		4000 N. Big Spring
	600 W. Illinois Ave.		Suite 401
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 682-4559
Fax:	(432) 684-7137		
Email:	rmcneill@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

TETRA TECH

September 12, 2014

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., Crockett State #2H, Unit H, Section 20, Township 21 South, Range 33 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 Crockett State #2H, Unit H, Section 20, Township 21 South, Range 33 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.46523°, W 103.58663°. 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 January 25, 2014, and released approximately seven (7) barrels of oil and one hundred and twenty (120) barrels of produced water from a load line with five (5) barrels of oil and fifteen (15) barrels of produced water recovered. The spill is located on the pad measuring approximately 90' x 160'. The initial and final C-141 forms are enclosed in Appendix A.

Groundwater

No water wells were listed within Section 20. According to the NMOCD groundwater map, the average depth to groundwater in this area is approximately 150' below surface. The average depth to groundwater map is shown Appendix B.

Regulatory

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

Tetra Tech
4000 North Big Spring, Suite 401, Midland, TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

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 April 10, 2014, Tetra Tech personnel inspected and sampled the spill area. Seven (7) auger holes (AH-1 through AH-7) were installed using a stainless steel hand auger to assess the impacted soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, none of the auger hole samples exceeded the RRAL's for TPH and BTEX.

The areas of AH-6 did not show a significant chloride impact to the soils with a chloride high of 867 mg/kg and declined with depth. In addition, the area of AH-7 detected chloride spikes at 4.0', 5.0' and 6.0' of 2,300 mg/kg, 4,340 mg/kg and 1,490 mg/kg, respectively. The deeper samples declined with depth to 398 mg/kg at 7.0'. The remaining auger holes (AH-1, AH-2, AH-3, AH-4 and AH-5) showed elevated chloride concentrations ranging from 1,050 mg/kg to 5,850 mg/kg at 1.0' to 2.0' below surface.

Remedial Activities

On June 10, 2014, Tetra Tech personnel supervised the removal of impacted material as highlighted (green) in Table 1 and shown on Figure 4. As proposed in the work plan, the areas of auger holes (AH-1, AH-4, and AH-5) were excavated to depths of approximately 1.0'-1.5' below surface, the areas of auger holes (AH-2 and AH-3) were excavated to depths of approximately 2.0'-2.5' below surface, the area of auger hole (AH-6) was excavated to a depth of approximately 3.0'-3.5' below surface, and the area of auger hole (AH-7) was excavated to a depth of approximately 6.0' below surface.

Once excavated to the appropriate depths, Tetra Tech collected confirmation samples from the bottom of the excavations in the areas of AH-1, AH-2, AH-3, AH-4, AH-5, and AH-7. The sampling results are summarized in Table 1.

TETRA TECH

Referring to Table 1, the bottom confirmation samples did not show any significant chloride concentrations in the subsurface soils. Based on the results, the excavations were backfilled with clean soil to grade, and approximately 960 cubic yards of excavated material was hauled to proper disposal.

Conclusion

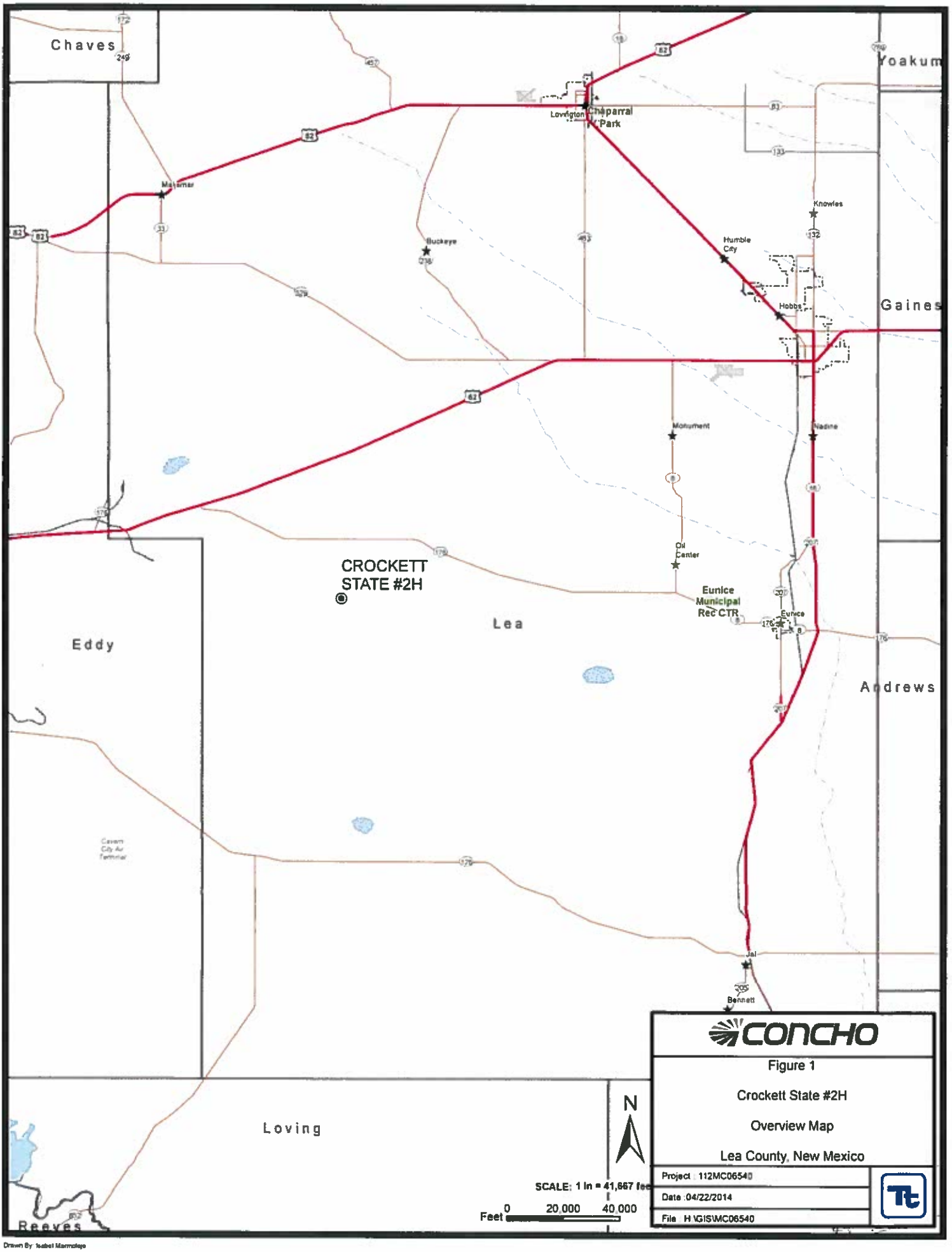
Based on the assessment and remediation work performed at this site, COG requests closure of this spill issue. The final C-141 is enclosed in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities for this site, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Clair Gonzales,
Geologist I

cc: Robert McNeill – COG

Figures



CONCHO

Figure 1

Crockett State #2H

Overview Map

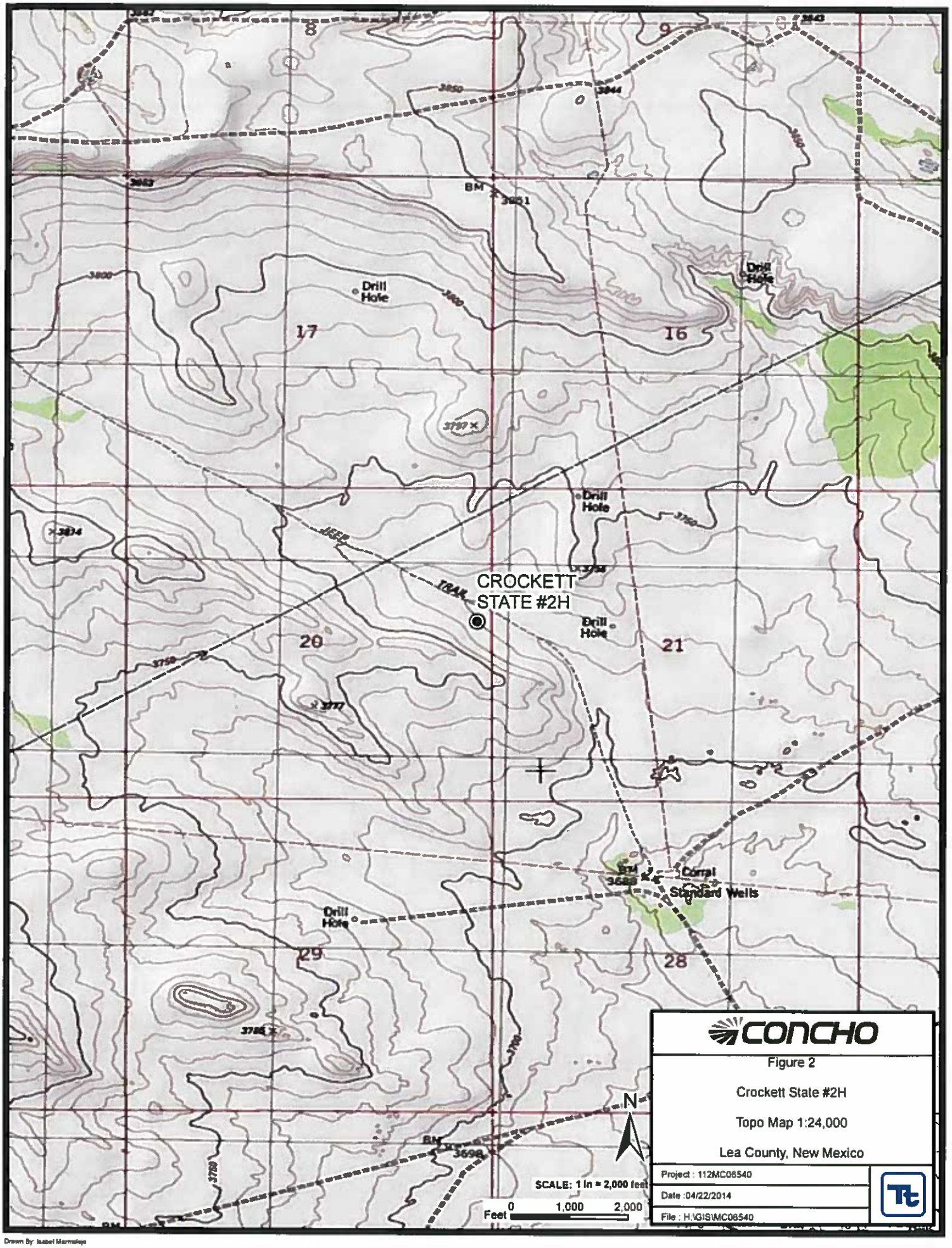
Lea County, New Mexico

Project : 112MC06540

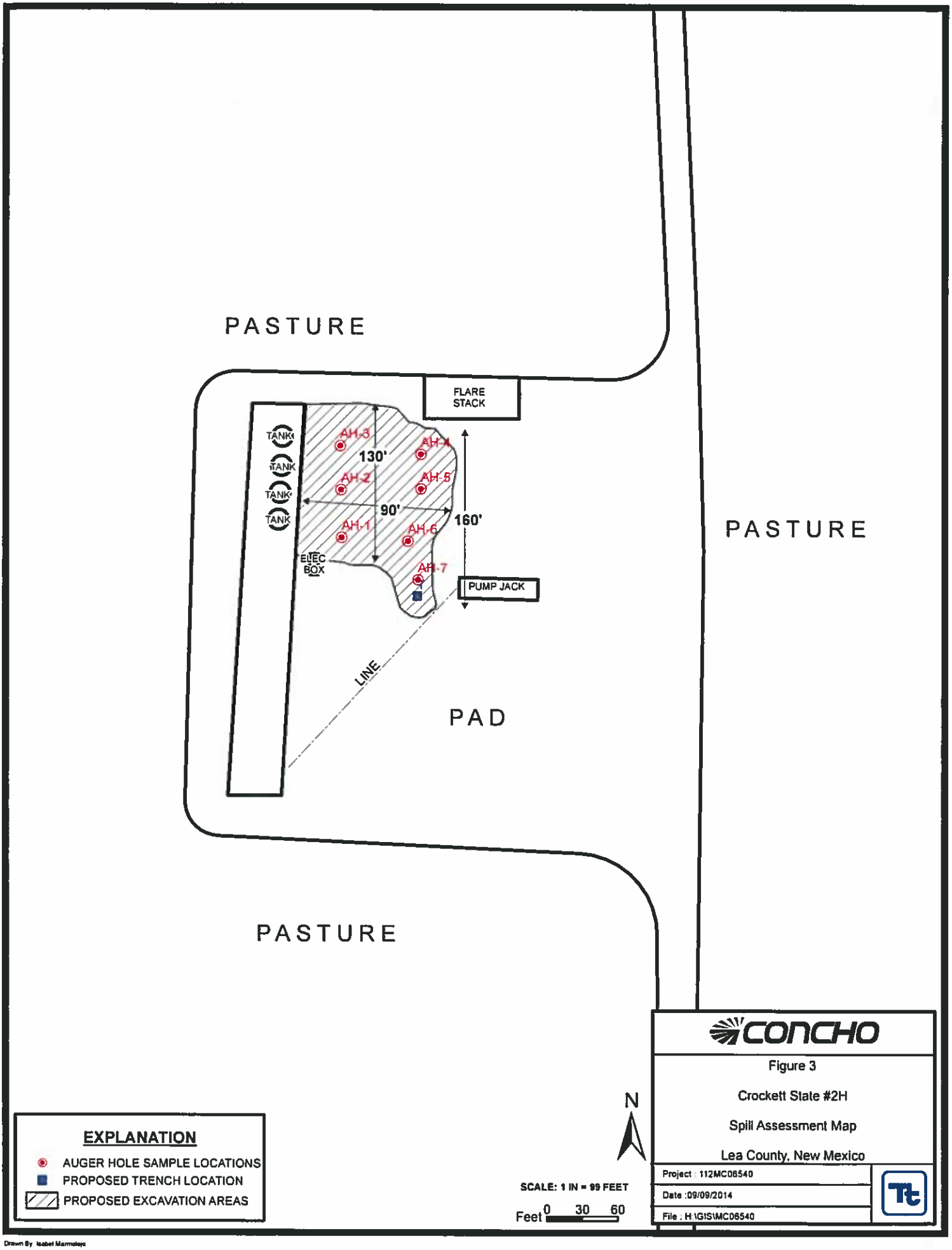
Date :04/22/2014

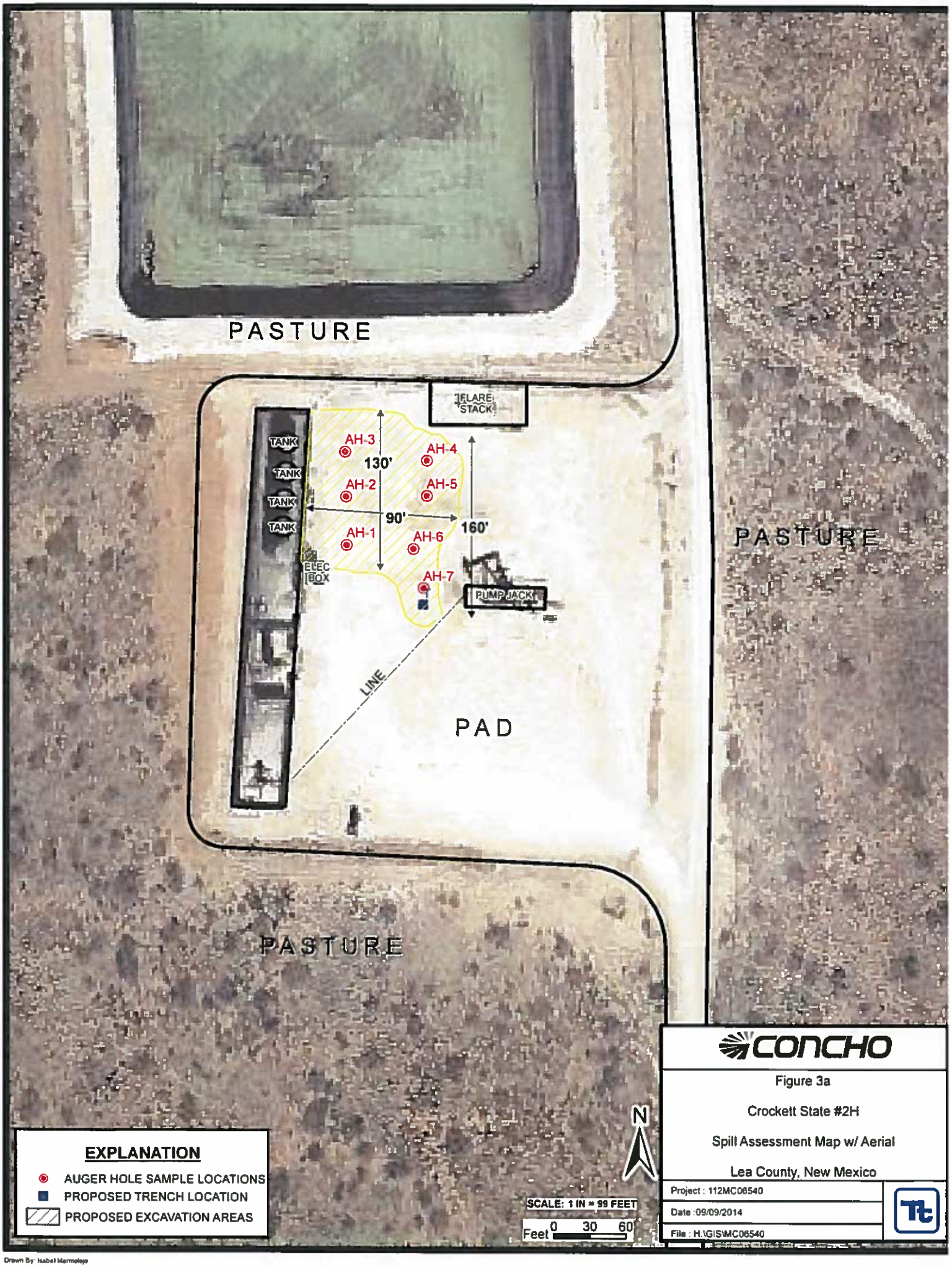
File : H:\GIS\MC06540

Drawn By: Isabel Marmolejo



Drawn By: Isabel Marmolejo


PASTURE
FLARE STACK
TANK
TANK
TANK
TANK
AH-3
AH-4
AH-2
AH-5
AH-1
AH-6
AH-7
130'
90'
160'
ELEC BOX
PUMP JACK
LINE
PAD
PASTURE
PASTURE
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
PROPOSED TRENCH LOCATION
PROPOSED EXCAVATION AREAS
N
SCALE: 1 IN = 99 FEET
Feet 0 30 60
CONCHO
Figure 3
Crockett State #2H
Spill Assessment Map
Lea County, New Mexico
Project : 112MC06540
Date :09/09/2014
File : H:\GIS\MC06540
Drawn By Isabel Marmolejo



CONCHO

Figure 3a

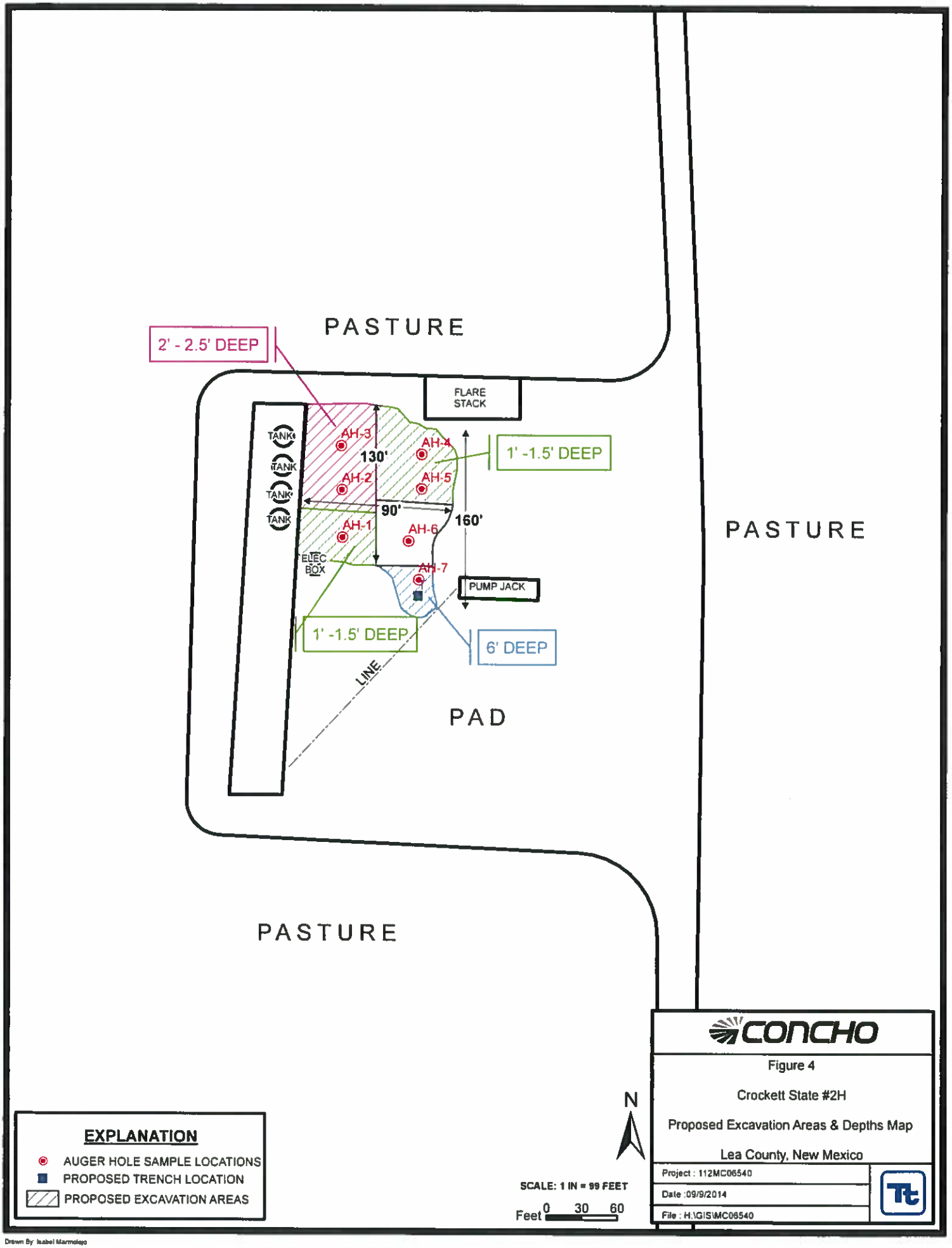
Crockett State #2H

Spill Assessment Map w/ Aerial

Lea County, New Mexico

Project : 112MC06540	
Date :09/09/2014	
File : H:\GIS\MC06540	

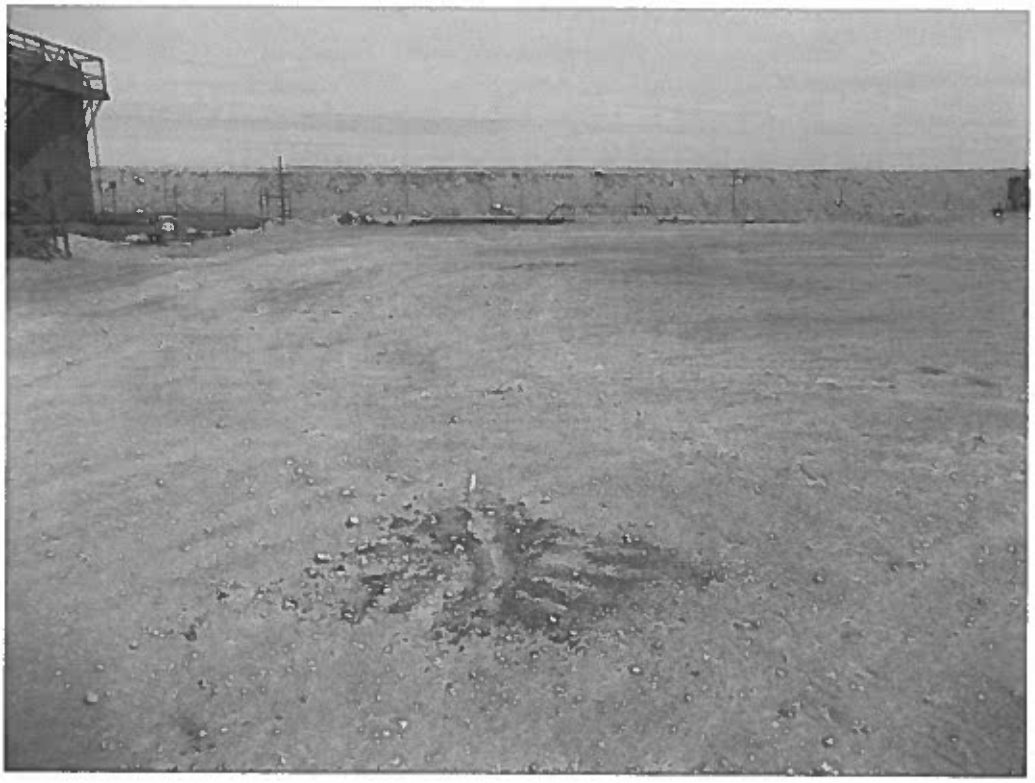
Drawn By: Isabel Marmolejo


PASTURE
2' - 2.5' DEEP
FLARE STACK
TANK
TANK
TANK
TANK
AH-3
AH-4
130'
1' -1.5' DEEP
AH-2
AH-5
90'
160'
AH-1
AH-6
ELEC BOX
AH-7
PUMP JACK
1' -1.5' DEEP
6' DEEP
LINE
PAD
PASTURE
PASTURE
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
PROPOSED TRENCH LOCATION
PROPOSED EXCAVATION AREAS
N
SCALE: 1 IN = 99 FEET
Feet 0 30 60
CONCHO
Figure 4
Crockett State #2H
Proposed Excavation Areas & Depths Map
Lea County, New Mexico
Project : 112MC06540
Date :09/9/2014
File : H:\GIS\MC06540
Drawn By: Isabel Marmolejo

Photos

COG Operating LLC
Crockett St. #2H
Tank Battery
Lea County, New Mexico

View East – Area of AH-1



View North – Areas of AH-1, AH-2, and AH-3

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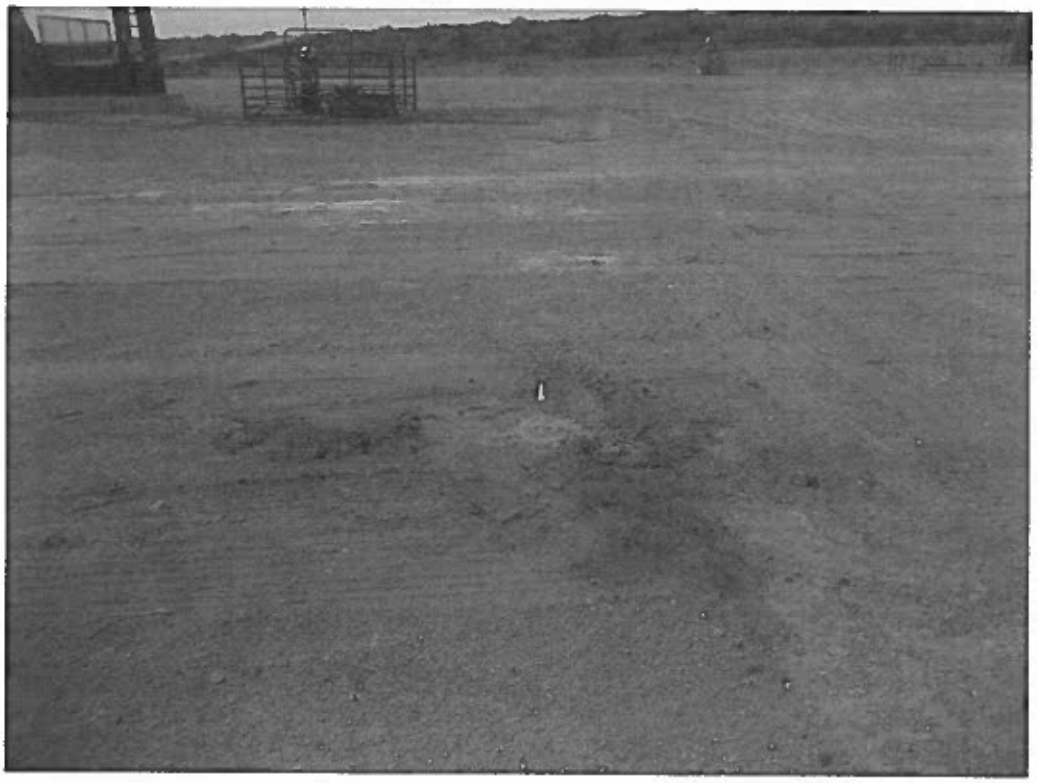
COG Operating LLC
Crockett St. #2H
Tank Battery
Lea County, New Mexico



View South – Areas of AH-4, AH-5, and AH-6

View East – Areas of AH-6 and AH-7

COG Operating LLC
Crockett St. #2H
Tank Battery
Lea County, New Mexico

TETRA TECH

View Northwest – Excavated Areas of AH-1, AH-2, AH-3 and AH-7

View Northwest – Excavated areas of AH-4 and AH-5

COG Operating LLC
Crockett St. #2H
Tank Battery
Lea County, New Mexico

View West –Excavated area of AH-7

View Southeast – Backfilled areas of AH-2, AH-3, AH-4 and AH-5

COG Operating LLC
Crockett St. #2H
Tank Battery
Lea County, New Mexico

View South – Backfilled area of AH-1 and AH-7

TETRA TECH

Tables

Table 1
COG Operating LLC.
Crockett St 2H
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	EB 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	4/10/2014	0-1	0		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	**1,380**
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	873
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	670
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	426
Bottom Hole	6/12/2014	0-1	1	X		-	-	-	-	-	-	-	-	304
AH-2	4/10/2014	0-1	0		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	**4,180**
	"	1-1.5	-		X	-	-	-	-	-	-	-	-	**1,080**
	"	2-2.5	-		X	-	-	-	-	-	-	-	-	122
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	<20.0
Bottom Hole	6/12/2014	0-1	3	X		-	-	-	-	-	-	-	-	400
AH-3	4/10/2014	0-1	0		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	**5,850**
	"	1-1.5	-		X	-	-	-	-	-	-	-	-	**1,320**
	"	2-2.5	-		X	-	-	-	-	-	-	-	-	141
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	131
Bottom Hole	6/12/2014	0-1	2	X		-	-	-	-	-	-	-	-	320
AH-4	4/10/2014	0-1	0		X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	**1,050**
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	221
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	40.0
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	<20.0
Bottom Hole	6/12/2014	0-1	1	X		-	-	-	-	-	-	-	-	<16.0

Table 1
COG Operating LLC.
Crockett St 2H
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	EB 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-5	4/10/2014	0-1	0		X	33.2	1,460	1493	<0.0200	<0.0200	<0.0200	0.697	0.697	**4,600**
	"	1-1.5	-		X	-	-	-	-	-	-	-	-	493
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	<20.0
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	<20.0
Bottom Hole	6/12/2014	1-1.5	1.5	X		-	-	-	-	-	-	-	-	<16.0
AH-6	4/10/2014	0-1	-	X		<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	867
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	<20.0
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	<20.0
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	306
AH-7	4/10/2014	0-1	-	0	X	<4.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	102
	"	1-1.5	-		X	-	-	-	-	-	-	-	-	204
	"	2-2.5	-		X	-	-	-	-	-	-	-	-	<20.0
	"	3-3.5	-		X	-	-	-	-	-	-	-	-	153
	"	4-4.5	-		X	-	-	-	-	-	-	-	-	**2,300**
	"	5-5.5	-		X	-	-	-	-	-	-	-	-	**4,340**
	"	6-6.5	-		X	-	-	-	-	-	-	-	-	**1,490**
	"	7-7.5	-	X		-	-	-	-	-	-	-	-	398
	"	8-8.5	-	X		-	-	-	-	-	-	-	-	249
	"	9-9.5	-	X		-	-	-	-	-	-	-	-	199
Bottom Hole	6/12/2014	0-1	6	X		-	-	-	-	-	-	-	-	<16.0

(-) Not Analyzed

(EB) Excavation Bottom

Excavated Soils and Depths

Appendix A

Water Well Data
Average Depth to Groundwater (ft)
COG - Crockett St. #2H Tank Battery
Lea County, New Mexico

20 South 33 East

6	5 325 278	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24 +300
30	29	28	27	26	25
31	32	33	34	35	36

20 South 34 East

6	5	4 125	3	2	1
7	8	9	10	11	12
18	17 128 140	16	15	14 150	13
19	20	21	22	23	24 270
30	29	28	27	26	25
31	32	33	34 82	35	36

20 South 35 East

6 56 64	5 64	4	3	2	1
7	8	9	10	11	12 49
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31 65	32	33 89	34	35	36

21 South 32 East

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

21 South 33 East

6	5	4	3	2 79 107	1
7	8	9	10	11 150	12
18	17	16	15	14	13
19	20 SITE	21	22	23	24
30	29	28 179	27	26	25
31	32	33 180	34	35	36

21 South 34 East

6	5	4 95	3	2	1
7	8 120	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28 140	27	26	25
31	32	33	34	35	36

22 South 32 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14 382 350	13
19 (S) 280	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

22 South 33 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13 391
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

22 South 34 East

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

- New Mexico State Engineers Well Reports
- USGS Well Reports
- Geology and Groundwater Conditions in Southern Eddy, County, NM
- NMOCD - Groundwater Data
- Field water level
- New Mexico Water and Infrastructure Data System

Appendix B

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	Robert McNeill
Address	600 West Illinois Avenue, Midland, TX 79701	Telephone No.	432-230-0077
Facility Name	Crockett State #002H	Facility Type	Tank Battery

Surface Owner State	Mineral Owner	Lease No. (API#) 30-025-41080

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	20	21S	33E					Lea

Latitude 32.46523 Longitude 103.58663

NATURE OF RELEASE

Type of Release Oil and produced water	Volume of Release 7bbls of oil 120bbls of produced water	Volume Recovered 5bbls of oil 15bbls of produced water
Source of Release Load line	Date and Hour of Occurrence 01-25-2014	Date and Hour of Discovery 01-25-2014 11:00am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher - NMOCD	
By Whom? Robert Grubbs Jr.	Date and Hour 01-26-2014 4:58pm	
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.*

Someone had open the load line going to the water tank on purpose. Closed valve.

Describe Area Affected and Cleanup Action Taken.*

Initially 7bbls of oil and 120bbls of produced water were released. We were able to recover 5bbls of oil and 15bbls of produced water with a vacuum truck. All free fluids have been recovered. Concho will have the spill site sampled 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 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: Robert Grubbs	OIL CONSERVATION DIVISION	
Printed Name: Robert Grubbs Jr.	Approved by District Supervisor:	
Title: Senior Environmental Coordinator	Approval Date:	Expiration Date:
E-mail Address: rgrubbs@concho.com	Conditions of Approval:	Attached ☐
Date: 02-03-2014 Phone: 432-661-6601		

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
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 Repor

Name of Company **COG Operating LLC**	Contact **Robert McNeil**
Address **600 West Illinois Avenue, Midland, Texas 79701**	Telephone No. **(432) 230-0077**
Facility Name Crockett State #2H	Facility Type **Tank Battery**

Surface Owner: State	Mineral Owner	Lease No. (API#) 30-025-41080

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	20	20S	33E					Lea

Latitude N 32.46523 ° **Longitude** W 103.58663°

NATURE OF RELEASE

Type of Release: Oil and Produced Water	Volume of Release **7bbls oil 120bbls produced water**	Volume Recovered **5bbls oil 15bbls produced water**
Source of Release **Load Line**	Date and Hour of Occurrence 1-25-2014	Date and Hour of Discovery **1-25-2014 11:00am**
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? **Mike Bratcher - NMOCD**	
By Whom? Robert Grubbs Jr.	Date and Hour 1-26-2014 4:58 pm	
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.*

Someone opened the load line going to the water tank. Closed the valve.

Describe Area Affected and Cleanup Action Taken.*

Initially 7 bbls of oil and 120 bbls or produced water were released. We were able to recover 5 bbls of oil and 15 bbls of produced water with a vacuum truck. All free fluids were recovered. 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:	OIL CONSERVATION DIVISION	
Printed Name: Ike Tavarez	Approved by District Supervisor:	
Title: Senior Project Manager, P.G.	Approval Date:	Expiration Date:
E-mail Address: ike.tavarez@tetratech.com	Conditions of Approval:	Attached ☐
Date: 9-12-14 Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

Appendix C

Summary Report

Ike Tavarez
Tetra Tech
1901 N. Big Spring St.
Midland, TX 79705

Report Date: April 16, 2014

Work Order: 14041126

Project Location: Lea Co, NM
Project Name: COG/Crockett St 2H
Project Number: 112MC06540

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
360226	AH-1 0-1'	soil	2014-04-10	00:00	2014-04-11
360227	AH-1 1-1.5'	soil	2014-04-10	00:00	2014-04-11
360228	AH-1 2-2.5'	soil	2014-04-10	00:00	2014-04-11
360229	AH-1 3-3.5'	soil	2014-04-10	00:00	2014-04-11
360230	AH-2 0-1'	soil	2014-04-10	00:00	2014-04-11
360231	AH-2 1-1.5'	soil	2014-04-10	00:00	2014-04-11
360232	AH-2 2-2.5'	soil	2014-04-10	00:00	2014-04-11
360233	AH-2 3-3.5'	soil	2014-04-10	00:00	2014-04-11
360234	AH-3 0-1'	soil	2014-04-10	00:00	2014-04-11
360235	AH-3 1-1.5'	soil	2014-04-10	00:00	2014-04-11
360236	AH-3 2-2.5'	soil	2014-04-10	00:00	2014-04-11
360237	AH-3 3-3.5'	soil	2014-04-10	00:00	2014-04-11
360238	AH-4 0-1'	soil	2014-04-10	00:00	2014-04-11
360239	AH-4 1-1.5'	soil	2014-04-10	00:00	2014-04-11
360240	AH-4 2-2.5'	soil	2014-04-10	00:00	2014-04-11
360241	AH-4 3-3.5'	soil	2014-04-10	00:00	2014-04-11
360242	AH-5 0-1'	soil	2014-04-10	00:00	2014-04-11
360243	AH-5 1-1.5'	soil	2014-04-10	00:00	2014-04-11
360244	AH-5 2-2.5'	soil	2014-04-10	00:00	2014-04-11
360245	AH-5 3-3.5'	soil	2014-04-10	00:00	2014-04-11
360246	AH-6 0-1'	soil	2014-04-10	00:00	2014-04-11
360247	AH-6 1-1.5'	soil	2014-04-10	00:00	2014-04-11
360248	AH-6 2-2.5'	soil	2014-04-10	00:00	2014-04-11
360249	AH-6 3-3.5'	soil	2014-04-10	00:00	2014-04-11
360250	AH-7 0-1'	soil	2014-04-10	00:00	2014-04-11
360251	AH-7 1-1.5'	soil	2014-04-10	00:00	2014-04-11
360252	AH-7 2-2.5'	soil	2014-04-10	00:00	2014-04-11
360253	AH-7 3-3.5'	soil	2014-04-10	00:00	2014-04-11
360254	AH-7 4-4.5'	soil	2014-04-10	00:00	2014-04-11
360255	AH-7 5-5.5'	soil	2014-04-10	00:00	2014-04-11

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
360256	AH-7 6-6.5'	soil	2014-04-10	00:00	2014-04-11
360257	AH-7 7-7.5'	soil	2014-04-10	00:00	2014-04-11
360258	AH-7 8-8.5'	soil	2014-04-10	00:00	2014-04-11
360259	AH-7 9-9.5'	soil	2014-04-10	00:00	2014-04-11

Sample - Field Code	BTEX Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	TPH DRO - NEW DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
360226 - AH-1 0-1'	<0.0200	<0.0200	<0.0200	<0.0200 Qr,Qs	<50.0 Qs	<4.00
360230 - AH-2 0-1'	<0.0200	<0.0200	<0.0200	<0.0200 Qr,Qs	<50.0 Qs	<4.00
360234 - AH-3 0-1'	<0.0200	<0.0200	<0.0200	<0.0200 Qr,Qs	<50.0 Qs	<4.00
360238 - AH-4 0-1'	<0.0200	<0.0200	<0.0200	<0.0200 Qr,Qs	<50.0 Qs	<4.00
360242 - AH-5 0-1'	<0.0200	<0.0200	<0.0200	**0.697** Qr,Qs	**1460** Qs	**33.2**
360246 - AH-6 0-1'	<0.0200	<0.0200	<0.0200	<0.0200 Qr,Qs	<50.0 Qs	<4.00
360250 - AH-7 0-1'	<0.0200	<0.0200	<0.0200	<0.0200 Qr,Qs	<50.0 Qs	<4.00

Sample: 360226 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**1380**	mg/Kg	4

Sample: 360227 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**873**	mg/Kg	4

Sample: 360228 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**670**	mg/Kg	4

Sample: 360229 - AH-1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**426**	mg/Kg	4

Sample: 360230 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		**4180**	mg/Kg	4

Sample: 360231 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**1080**	mg/Kg	4

Sample: 360232 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**122**	mg/Kg	4

Sample: 360233 - AH-2 3-3.5'

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

Sample: 360234 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		**5850**	mg/Kg	4

Sample: 360235 - AH-3 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**1320**	mg/Kg	4

Sample: 360236 - AH-3 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**141**	mg/Kg	4

Sample: 360237 - AH-3 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**131**	mg/Kg	4

Sample: 360238 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		**1050**	mg/Kg	4

Sample: 360239 - AH-4 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**221**	mg/Kg	4

Sample: 360240 - AH-4 2-2.5'

Param	Flag	Result	Units	RL
Chloride		**40.0**	mg/Kg	4

Sample: 360241 - AH-4 3-3.5'

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

Sample: 360242 - AH-5 0-1'

Param	Flag	Result	Units	RL
Chloride		**4600**	mg/Kg	4

Sample: 360243 - AH-5 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**493**	mg/Kg	4

Sample: 360244 - AH-5 2-2.5'

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

Sample: 360245 - AH-5 3-3.5'

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

Sample: 360246 - AH-6 0-1'

Param	Flag	Result	Units	RL
Chloride		**867**	mg/Kg	4

Sample: 360247 - AH-6 1-1.5'

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

Sample: 360248 - AH-6 2-2.5'

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

Sample: 360249 - AH-6 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**306**	mg/Kg	4

Sample: 360250 - AH-7 0-1'

Param	Flag	Result	Units	RL
Chloride		**102**	mg/Kg	4

Sample: 360251 - AH-7 1-1.5'

Param	Flag	Result	Units	RL
Chloride		**204**	mg/Kg	4

Sample: 360252 - AH-7 2-2.5'

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

Sample: 360253 - AH-7 3-3.5'

Param	Flag	Result	Units	RL
Chloride		**153**	mg/Kg	4

Sample: 360254 - AH-7 4-4.5'

Param	Flag	Result	Units	RL
Chloride		**2300**	mg/Kg	4

Sample: 360255 - AH-7 5-5.5'

Param	Flag	Result	Units	RL
Chloride		**4340**	mg/Kg	4

Sample: 360256 - AH-7 6-6.5'

Param	Flag	Result	Units	RL
Chloride		**1490**	mg/Kg	4

Sample: 360257 - AH-7 7-7.5'

Param	Flag	Result	Units	RL
Chloride		**398**	mg/Kg	4

Sample: 360258 - AH-7 8-8.5'

Param	Flag	Result	Units	RL
Chloride		**249**	mg/Kg	4

Sample: 360259 - AH-7 9-9.5'

Param	Flag	Result	Units	RL
Chloride		**199**	mg/Kg	4

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

June 20, 2014

IKE TAVAREZ

TETRA TECH

1910 N. BIG SPRING STREET

MIDLAND, TX 79705

RE: CROCKETT STATE #2H

Enclosed are the results of analyses for samples received by the laboratory on 06/18/14 12:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

TETRA TECH
IKE TAVAREZ
1910 N. BIG SPRING STREET
MIDLAND TX, 79705
Fax To: (432) 682-3946

Received:	06/18/2014	Sampling Date:	06/12/2014
Reported:	06/20/2014	Sampling Type:	Soil
Project Name:	CROCKETT STATE #2H	Sampling Condition:	** (See Notes)
Project Number:	112MC06540	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY		

Sample ID: AH 7 @ 6' BOTTOMHOLE (H401845-01)

Chloride, SM4500Cl-B **mg/kg** **Analyzed By: HM**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	06/20/2014	ND	416	104	400	0.00	

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name:	Tetra Tech
Project Manager:	Ike Tavarez
Address:	
City:	Midland State: TX Zip:
Phone #:	Fax #:
Project #:	1121MC06540 Project Owner:
Project Name:	COG- Crockett St. #21H
Project Location:	Lea, Co.
Sampler Name:	Adrian Garcia

BILL TO

P.O. #:	
Company:	COG
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	Chloride
	AH 7 @ 6' Bottomhole	G	1			X							6/12		X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 6/18/14	Received By:	Jodi Henson
Adrian Garcia	Time: 12:25		
Relinquished By:	Date:	Received By:	
	Time:		

Delivered By: (Circle One)
Sampler - UPS - Bus - Other: 24.8°C

Sample Condition: Cool: Yes / No; Intact: Yes / No

CHECKED BY: (Initials)

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:

† Cardinal cannot accept verbal changes. Please fax written changes to (575)393-2326

HSG