

SITE INFORMATION

Report Type: Work Plan

General Site Information:

Site:	MYOX State 32 #3H					
Company:	COG Operating LLC					
Section, Township and Range	Unit D	Sec 32	25S	28E		
Lease Number:	(API#) 30-015-41642					
County:	Eddy County					
GPS:	32.09383° N			104.11525° W		
Surface Owner:	State					
Mineral Owner:						
Directions:	From Carlsbad, NM, travel south on US 285 thru Malaga, NM and turn west at mile marker 8. Follow lease road to its end. Site is at the end of this lease road.					

Release Data:

Date Released:	1/17/2014
Type Release:	Produced Water
Source of Contamination:	Poly line failure
Fluid Released:	18 bbls Produced Water
Fluids Recovered:	17 bbls Produced Water

Official Communication:

Name:	Robert Grubbs	Darrell Moore
Company:	COG Operating, LLC	EnTech Consulting
Address:	One Concho Center	PO Box 9843
	600 W. Illinois Ave.	
City:	Midland Texas, 79701	Midland, Texas
Phone number:	(432) 661-6601	(432) 266-8375
Fax:	(432) 684-7137	
Email:	RGrubbs@concho.com	darrell.moore@entechservice.com

Ranking Criteria

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

Acceptable Soil RRAL (mg/kg)

Benzene	Total BTEX	TPH
10	50	1,000



March 27, 2014

Mr. Mike Bratcher
Environmental Engineer Specialist
New Mexico Oil Conservation Division, Dist. 2
811 S. First Street
Artesia, NM 88210

RE: Work Plan for the COG Operating LLC., MYOX State 32 #3, Unit D, Section 32, Township 25 South, Range 28 East, Eddy County, New Mexico.

Dear Mr. Bratcher:

EnTech Consulting Corp. (EnTech) has been contacted by COG Operating LLC. (COG) to assess a spill from a poly line near the MYOX State 32 #3 located in Unit D, Section 32, Township 25 South, Range 28 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.09383°, W 104.11525°. 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 17, 2014, and released approximately 18 barrels of produced water from a clamp on a poly line. COG personnel shut down the transfer pump and fused the line back together. Approximately 17 barrels of standing fluids were recovered. The initial C-141 form is enclosed in **Appendix A**.

Groundwater

No water wells were listed in the State Engineers Office Database in Section 32, Township 25 South, Range 28 East. The closest reference was in Section 28, Township 25 South, Range 28 East, which is just south of the Site. Groundwater at that location is listed at 90 feet. Groundwater data is shown in **Appendix B**.

Regulatory

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

(RRAL) for benzene, toluene, ethylbenzene, and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 1,000 mg/kg.

Soil Assessment and Analytical Results

On February 20, 2014, EnTech personnel inspected and sampled the spill area. Two (2) auger holes (AH-1 and AH-2) were installed using a stainless steel hand auger to assess the impacted soils (**Figure 3**). Samples were analyzed for TPH analysis by EPA Method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA Method 300.0. The sampling results are summarized in **Table 1** and auger hole locations are shown in **Figure 3**. Copies of laboratory analysis and chain-of-custody documentation are included in **Appendix C**.

Referring to Table 1, none of the samples exceeded the TPH, BTEX, and benzene RRAL. However, elevated chloride concentrations were detected in the two auger holes. Auger Hole #1 (AH-1) showed no impact at surface down to 1.5 feet. However, chloride concentrations increased with depth from 1.5 feet down to 4.5 feet where the concentration is 1350 mg/kg. Auger Hole #2 also showed no impact at the surface down to 2.5 feet. Below 2.5 feet chloride content increased down to 4.5 feet where the concentration is at 262 mg/kg.

Work Plan

COG proposes to remove impacted material as highlighted (green) in **Table 1** and shown in **Figure 4**. The proposed excavation in the vicinity of AH #2 will remove visually surface stained soils. EnTech will install a backhoe trench in the area of AH-1 (Example) to define the extents. Based on the field results, the area will be appropriately addressed. However, the excavation will be guided by visual evidence and chloride titration samples. Once the contaminated soils have been excavated, confirmation samples will be collected and sent for laboratory analysis. Once these samples have confirmed the clean-up, the excavation will be backfilled with clean soil. The excavated soil will be transported to an approved disposal facility.

The proposed excavation depths may not be reached due to situations beyond our control including safety concerns for onsite personnel and impacted soil around structures or lines. As such, EnTech will excavate the soils to the maximum extent practicable.

Upon completion, a final report will be submitted to the NMOCD. If you have any questions or comments concerning this assessment or the proposed remediation activities for this site, please call me at 432-266-8375.

Mr. Mike Bratcher
Work Plan for the COG Operating LLC.
Project Name: MYOX State 32 #3

March 27, 2014

Respectfully submitted,
EnTech Consulting Corp.



Darrell Moore
Regional Project Manager

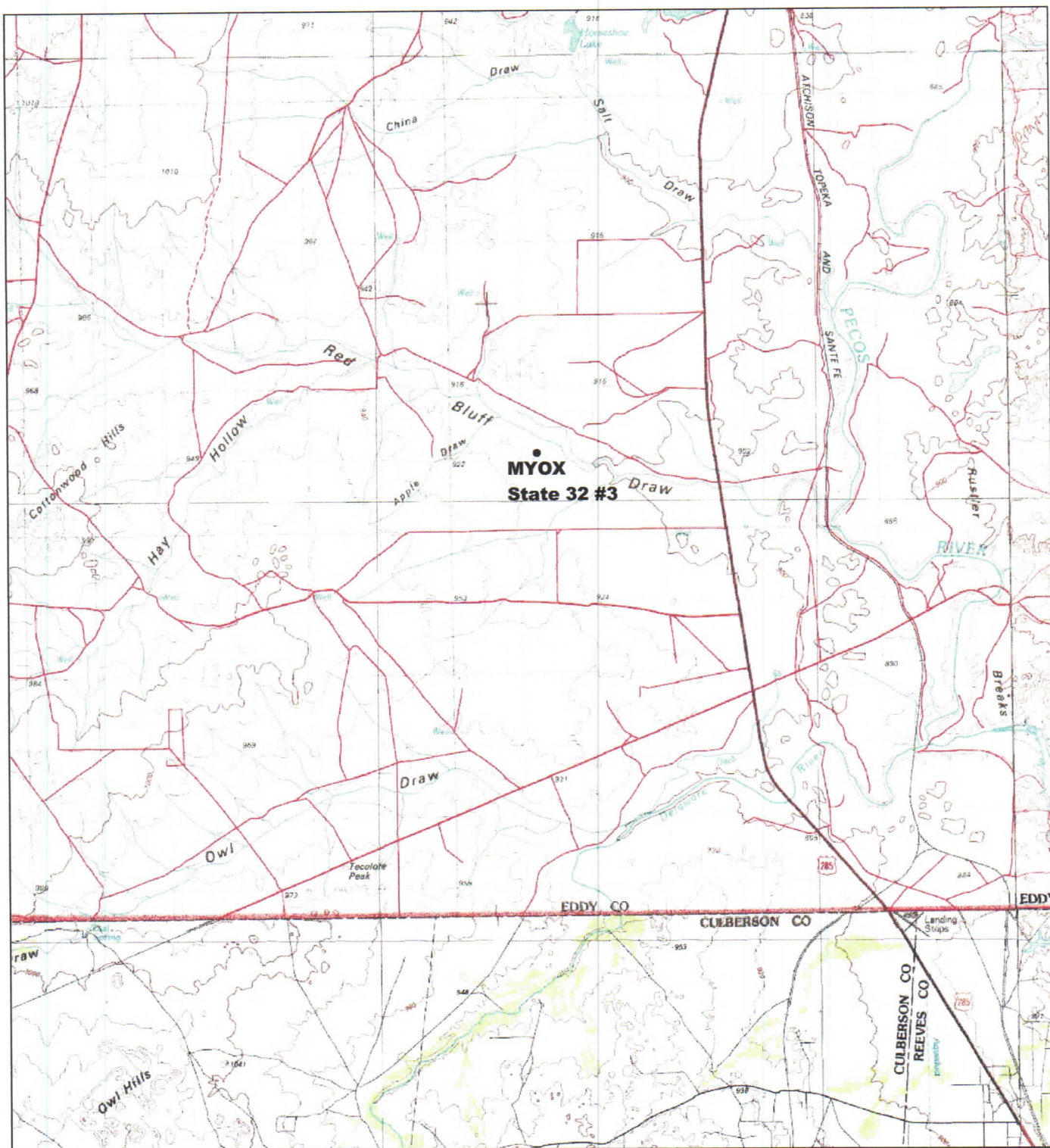


Chan Patel
Sr. Project Manager

Enclosures
Figures 1-4
Table 1
Appendix A - Initial C-141
Appendix B – Groundwater Data
Appendix C – Laboratory Report

Cc: Robert McNeill – COG
Cc: Mike Burton – BLM

FIGURES

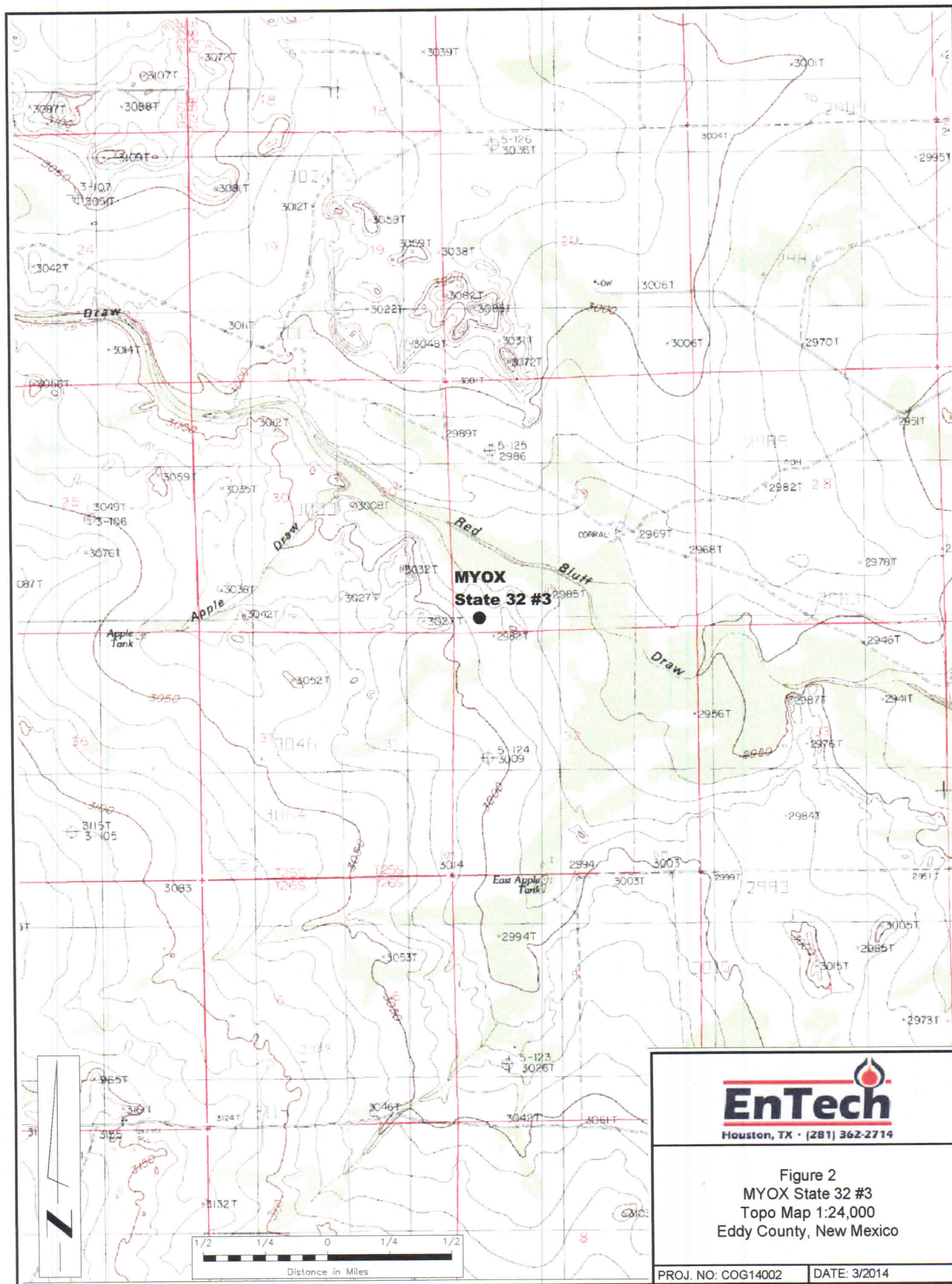


EnTech
Houston, TX • (281) 362-2714

Figure 1
MYOX State 32 #3
Overview Map
Eddy County, New Mexico

PROJ. NO: COG14002

DATE: 3/2014





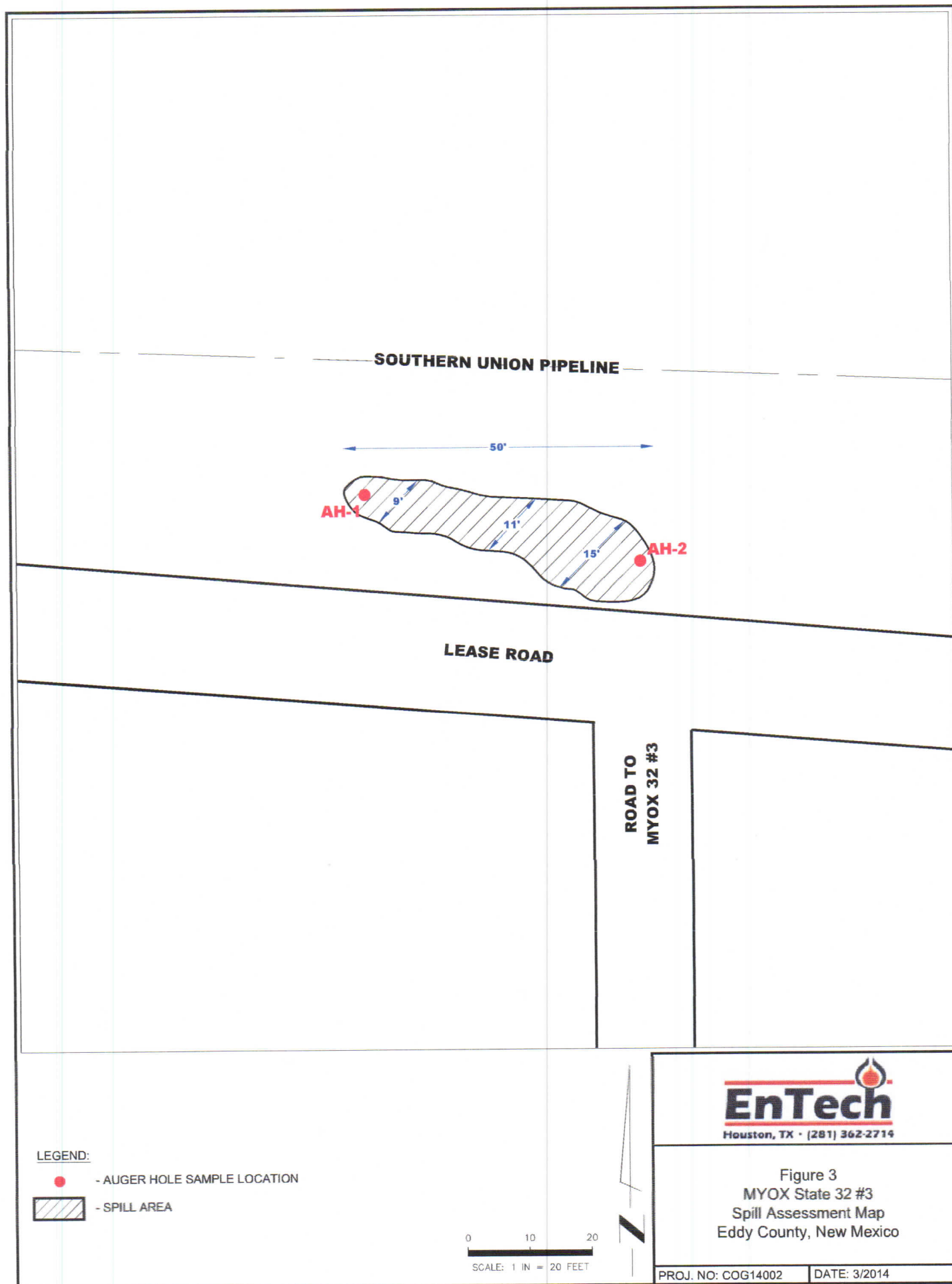
LEGEND:

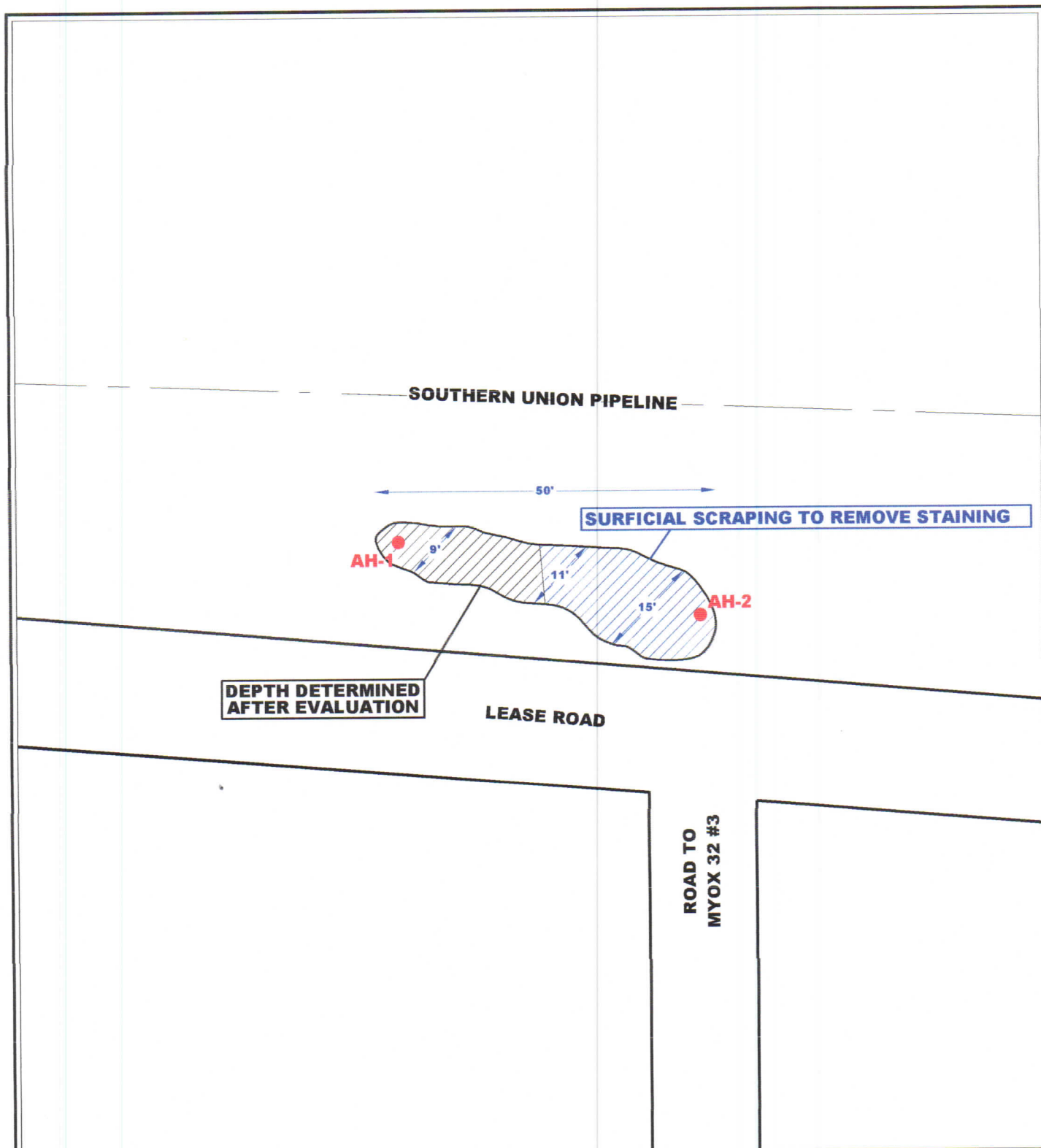
- - AUGER HOLE SAMPLE LOCATION
- SPILL AREA

0 10 20
SCALE: 1 IN = 20 FEET



Figure 3
MYOX State 32 #3
Spill Assessment Map
Eddy County, New Mexico





LEGEND:

- - AUGER HOLE SAMPLE LOCATION
- ▨ - PROPOSED EXCAVATION AREA
- ▨ - 0-1' PROPOSED EXCAVATED AREA (BLUE)
- ▨ - 1-2' PROPOSED EXCAVATED AREA (GREEN)
- ▨ - 2-3' PROPOSED EXCAVATED AREA (PURPLE)
- ▨ - 3' PROPOSED EXCAVATED AREA (RED)

0 10 20
SCALE: 1 IN = 20 FEET



Figure 4
MYOX State 32 #3
Proposed Excavation Areas & Depths Map
Eddy County, New Mexico

PROJ. NO: COG14002 DATE: 3/2014

TABLES

**Table 1. COG Operating LLC.
MYOX State 32 #3 Eddy County, NM**

Concho MYOX 32 3H Malaga, NM

Sample ID Number	Sample Date	Sample Depth (feet)	BEB Depth (feet)	Soil Status		SW 846-8021B				SW 846-8021B				Chlorides (mg/kg)
						Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (md/ka)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	Total TPH (mg/kg)	
				In -situ	Removed									
				10 mg/kg		50 mg/kg								
AH-1	02/20/14	0-1'				<0.0200	<0.0200	<0.0200	<4.00	<50.0			<20.0	
AH-1	02/20/14	1.5											<20.0	
AH-1	02/20/14	2.5											152	
AH-1	02/20/14	3.5											1050	
AH-1	02/20/14	4.5 T											1350	
AH-2	02/20/14	0-1'				<0.0200	<0.0200	<0.0200	<4.00	<50.0			<20.0	
AH-2	02/20/14	1.5											<20.0	
AH-2	02/20/14	2.5											<20.0	
AH-2	02/20/14	3.5											105	
AH-2	02/20/14	4.5											262	

NMOCD: New Mexico Oil Conservation Division

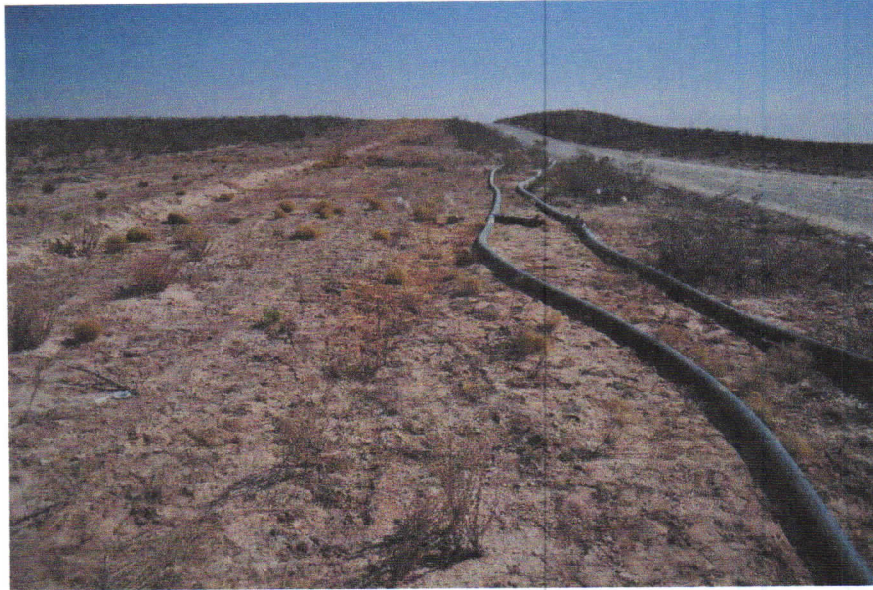
Exceedences of NMOCD Remediation Criteria are shown in **bold**

Green indicates depth to be excavated

T Indicates that depth to be excavated will be determined in the field

PHOTOS

COG Operating LLC
MYOX State 32 #3
Eddy County, New Mexico



View looking East AH #1 in background



View looking West AH #2 in background

APPENDIX A

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
J.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	Myox 32 State #003H	Facility Type	Flowline
Surface Owner	State	Mineral Owner	Lease No. (API#) 30-015-41642

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	32	25S	28E					Eddy

Latitude 32 05.660 Longitude 104 07.012

NATURE OF RELEASE

Type of Release	Volume of Release	Volume Recovered
Produced water	18bbbls	17bbbls
Source of Release	Date and Hour of Occurrence	Date and Hour of Discovery
Poly flowline	01-17-2014	01-17-2014 4:20pm
Was Immediate Notice Given?	If YES, To Whom?	
☐ Yes ☒ No ☒ Not Required		
By Whom?	Date and Hour	
Was a Watercourse Reached?	If YES, Volume Impacting the Watercourse.	
☐ Yes ☒ No		

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

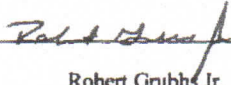
Poly crew cut into the line and squeezed off both ends. The water transfer pump kicked on building up pressure until the clamp on the upstream side failed. Shut down transfer pump and fused the line back together.

Describe Area Affected and Cleanup Action Taken.*

Initially 18bbbls of produced water were released. We were able to recover 17bbbls 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.

OIL CONSERVATION DIVISION

Signature:			
Printed Name:	Robert Grubbs Jr.	Approved by District Supervisor:	
Title:	Senior Environmental Coordinator	Approval Date:	Expiration Date:
Email Address:	rgrubbs@concho.com	Conditions of Approval:	Attached ☐
Date:	01-24-2014	Phone:	432-661-6601

* Attach Additional Sheets If Necessary

APPENDIX B



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the
POD suffix indicates the
POD has been replaced
& no longer serves a
water right file.)

(R=POD has
been replaced,
O=orphaned,
C=the file is
closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

POD Number	POD Sub- Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
C 01278	C	ED		4	3	28	25S	28E		585470	3551338*	205	90	115
C 01411	C	ED		4	4	2	04	25S	28E	586289	3558522*	69	35	34
C 01453	C	ED		1	2	26	25S	28E		589096	3552612*	70	40	30
C 01522	C	ED			1	22	25S	28E		586843	3554004*	150		
C 01573 POD1	C	ED		3	1	4	20	25S	28E	584144	3553361	176	96	80
C 02668	C	ED		2	1	2	09	25S	28E	585890	3557525*	150		
C 03263 POD1	C	ED		1	1	1	07	25S	28E	581628	3557501*	133		

Average Depth to Water: **65 feet**

Minimum Depth: **35 feet**

Maximum Depth: **96 feet**

Record Count: 7

PLSS Search:

Township: 25S

Range: 28E

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

APPENDIX C

Summary Report

Darrell Moore
EnTech Consulting-The Woodlands
21 Waterway Avenue
Suite 300
The Woodlands, TX 77380

Report Date: March 3, 2014

Work Order: 14022126



Project Location: Magala, NM
Project Name: Myox 32 3H

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
355503	AH 1-0-1'	soil	2014-02-20	11:00	2014-02-21
355504	AH 1-1.5	soil	2014-02-20	11:05	2014-02-21
355505	AH 1-2.5	soil	2014-02-20	11:10	2014-02-21
355506	AH 1-3.5	soil	2014-02-20	11:15	2014-02-21
355507	AH 1-4.5	soil	2014-02-20	11:20	2014-02-21
355508	AH 2-0-1'	soil	2014-02-20	11:25	2014-02-21
355509	AH 2-1.5	soil	2014-02-20	11:30	2014-02-21
355510	AH 2-2.5	soil	2014-02-20	11:35	2014-02-21
355511	AH 2-3.5	soil	2014-02-20	11:40	2014-02-21
355512	AH 2-4.5	soil	2014-02-20	11:45	2014-02-21

Sample - Field Code	BTEX				TPH DRO - NEW	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
355503 - AH 1-0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
355508 - AH 2-0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00

Sample: 355503 - AH 1-0-1'

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

Sample: 355504 - AH 1-1.5

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

Sample: 355505 - AH 1-2.5

Param	Flag	Result	Units	RL
Chloride		152	mg/Kg	4

Sample: 355506 - AH 1-3.5

Param	Flag	Result	Units	RL
Chloride		1050	mg/Kg	4

Sample: 355507 - AH 1-4.5

Param	Flag	Result	Units	RL
Chloride		1350	mg/Kg	4

Sample: 355508 - AH 2-0-1'

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

Sample: 355509 - AH 2-1.5

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

Sample: 355510 - AH 2-2.5

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

Sample: 355511 - AH 2-3.5

Param	Flag	Result	Units	RL
Chloride		105	mg/Kg	4

Sample: 355512 - AH 2-4.5

Param	Flag	Result	Units	RL
Chloride		262	mg/Kg	4

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

5002 Basin Street, Suite A1
Midland, Texas 79703
Tel (432) 689-6301
Fax (432) 689-6313

200 East Sunset Rd., Suite E
El Paso, Texas 79922
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

Brandon & Clark
3403 Industrial Blvd.
Hobbs, NM 88240
Tel (575) 392-7561
Fax (575) 392-4508

Company Name: <i>ENTECH Consulting</i>	Phone #: <i>432.266.8375</i>
Address: <i>(Street, City, Zip) 221 WATERWAY AVE #300 WOODBRIDGE TX 77390</i>	Fax #: <i>281-362-2704</i>
Contact Person: <i>DARRELL MOORE</i>	E-mail: <i>Darrell.Moore@entechservice.com</i>
Invoice to: <i>Concho Ann Robert Gubb</i>	
(If different from above)	
Project #: <i>3234</i>	Project Name: <i></i>

Project Location (including state):	Mags / NM	
Sampler Signature:	[Signature]	
	PRESERVATIVE	

[illegible]

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	INST OBS COR
<i>S. A. Dell</i>	<i>EnTech</i>	<i>2-21-14</i>	<i>14:00</i>	<i>Allison Johnson</i>		<i>2/21/14</i>	<i>14:00</i>	
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	INST OBS COR
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	INST OBS COR

ANALYSIS REQUEST
(Circle or Specify Method No.)

[illegible]

12	LAB USE ONLY	REMARKS
11		
10		
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7		
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3		
2		
1		

SITE INFORMATION

Report Type: Work Plan

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Name:	Robert Grubbs		Darrell Moore
Company:	COG Operating, LLC		EnTech Consulting
Address:	One Concho Center		PO Box 9843
	600 W. Illinois Ave.		
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 661-6601		(432) 266-8375
Fax:	(432) 684-7137		
Email:	RGrubbs@concho.com		darrell.moore@entechservice.com

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Surface Body of Water:	Ranking Score	Site Data
<200 ft.	20	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0
Total Ranking Score:		10

Acceptable Soil RRAL (mg/kg)

Benzene	Total BTEX	TPH
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March 18, 2014

Mr. Mike Bratcher
Environmental Engineer Specialist
New Mexico Oil Conservation Division, Dist. 2
811 S. First Street
Artesia, NM 88210

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No water wells were listed in the State Engineers Office Database in Section 32, Township 25 South, Range 28 East. The closest reference was in Section 5, Township 26 South, Range 28 East, which is just south of the Site. Groundwater at that location is listed at 100 feet. Groundwater data is shown in Appendix B.

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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