

SITE INFORMATION

Report Type: Work Plan

General Site Information:

Site:	Honey Graham 29 State Com #6H					
Company:	COG Operating LLC					
Section, Township and Range	Unit C	Sec 29	26S	28E		
Lease Number:	(API#) 30-015-38488					
County:	Eddy County					
GPS:	32.01908° N			104.11124° W		
Surface Owner:	State					
Mineral Owner:						
Directions:	From Malaga NM drive south 11.3 miles to County Rd 724. Turn West and drive 3 miles. Turn South and drive 3.1 miles. Turn East and drive 0.3 miles.					

Release Data:

Date Released:	1/22/2014
Type Release:	Produced Water
Source of Contamination:	Poly line failure
Fluid Released:	12 bbls Produced Water
Fluids Recovered:	10 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	0
>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



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., Honey Graham 29 State Com. #6H, Unit C, Section 29, Township 26 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 at the Honey Graham 29 State Com #6H located in Unit C, Section 29, Township 26 South, Range 28 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.01908°, W 104.11124°. 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 22, 2014, and released approximately 12 barrels of produced water from a "Y" on a poly line. COG personnel shut down the transfer pump and fused the line back together. Approximately 10 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 29, Township 26 South, Range 28 East. The closest reference was in Section 22, Township 26 South, Range 28 East, which is just northeast of the Site. Groundwater at that location is listed at 300'. All references to groundwater in Township 26 South, Range 28 East is deeper than 100'. 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 5,000 mg/kg.

Soil Assessment and Analytical Results

On February 20, 2014, EnTech 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 (**Figure 4**). 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**. 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 all of the auger holes. Auger holes 1-3 showed shallow chloride impacts in the top foot ranging from 5790 mg/kg to 13,800 mg/kg. Chloride content declined with depth in each auger hole and virtually disappeared in AH #1 and AH #3 by 3.5 feet. AH #2 still shows a chloride concentration of 1,220 mg/kg at 3.5 feet below surface.

Work Plan

COG proposes to remove impacted material as highlighted (green) in **Table 1** and shown in **Figure 4**. The proposed excavation depth is estimated at 2' below surface in the vicinity of AH #1 and AH #3. In the area of AH #2, excavated depth will be determined during excavation based on chloride titrations done in the field. However, the excavation will be guided by visual evidence and chloride titration samples. Once the contaminated soils have been excavated and confirmation samples have confirmed the clean-up, the excavation will be backfilled with clean soil. The excavated soil will be transported to proper disposal.


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.

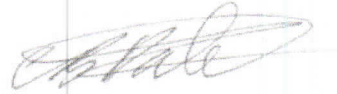
Mr. Mike Bratcher
Work Plan for the COG Operating LLC.
Project Name: Honey Graham 29 State Com #6H

Page 3 of 3
March 27, 2013

Respectfully submitted,
EnTech Consulting Corp.



Darrell Moore
Regional Project Manager

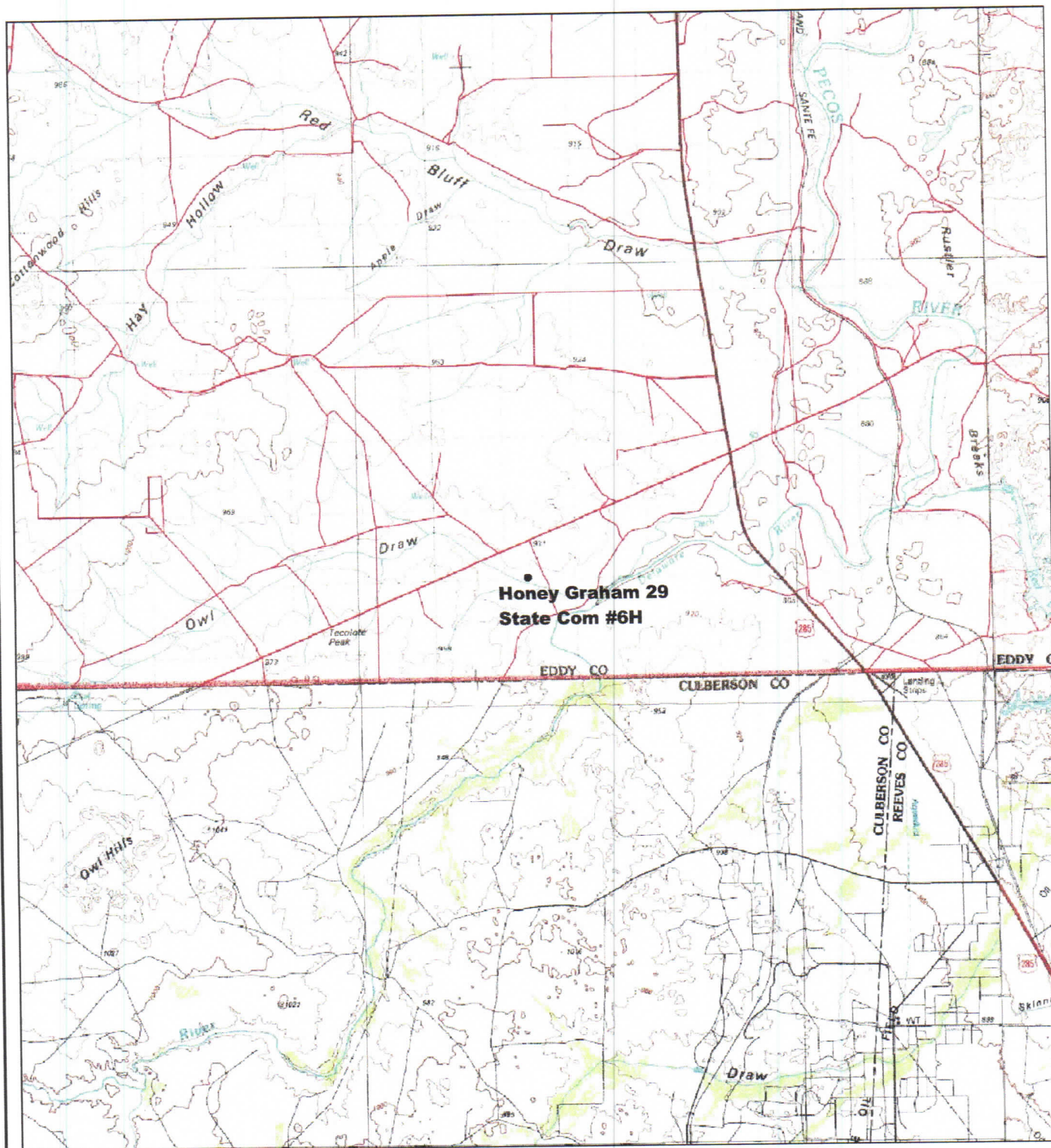


Chan Patel
Sr. Project Manager

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

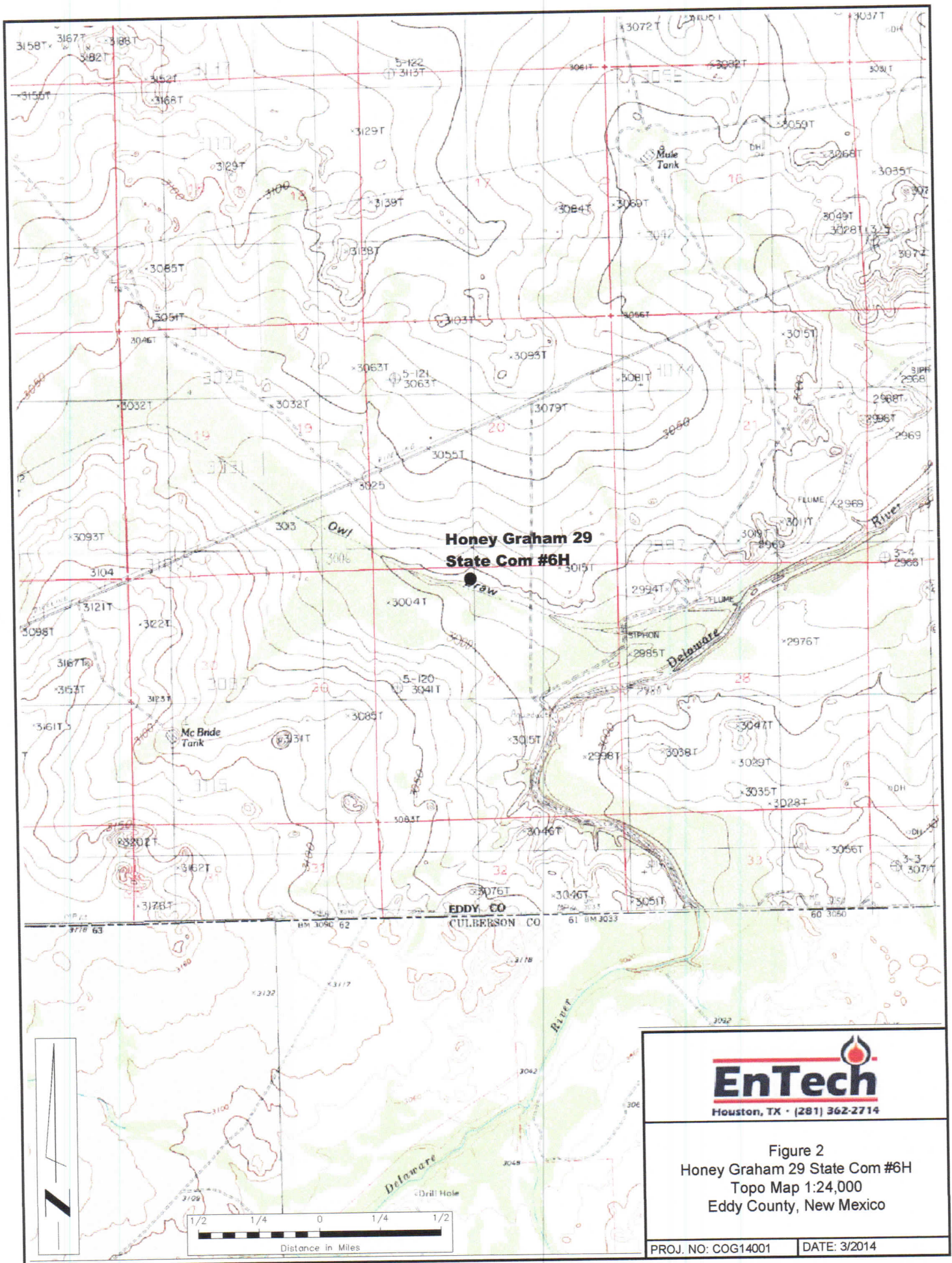


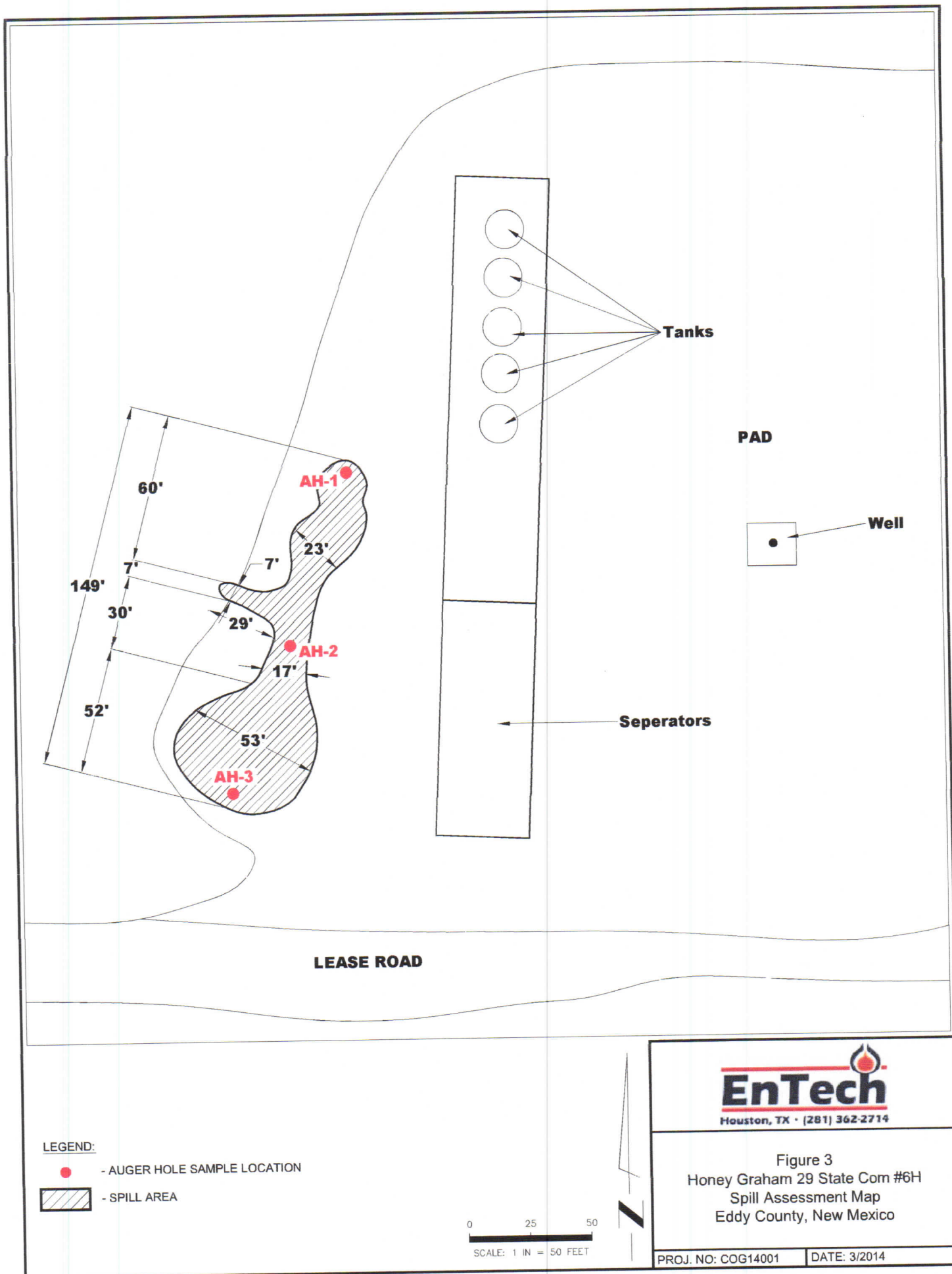
EnTech
Houston, TX • (281) 362-2714

Figure 1
Honey Graham 29 State Com #6H
Overview Map
Eddy County, New Mexico

PROJ. NO: COG14001

DATE: 3/2014







LEGEND:

- - AUGER HOLE SAMPLE LOCATION
- SPILL AREA

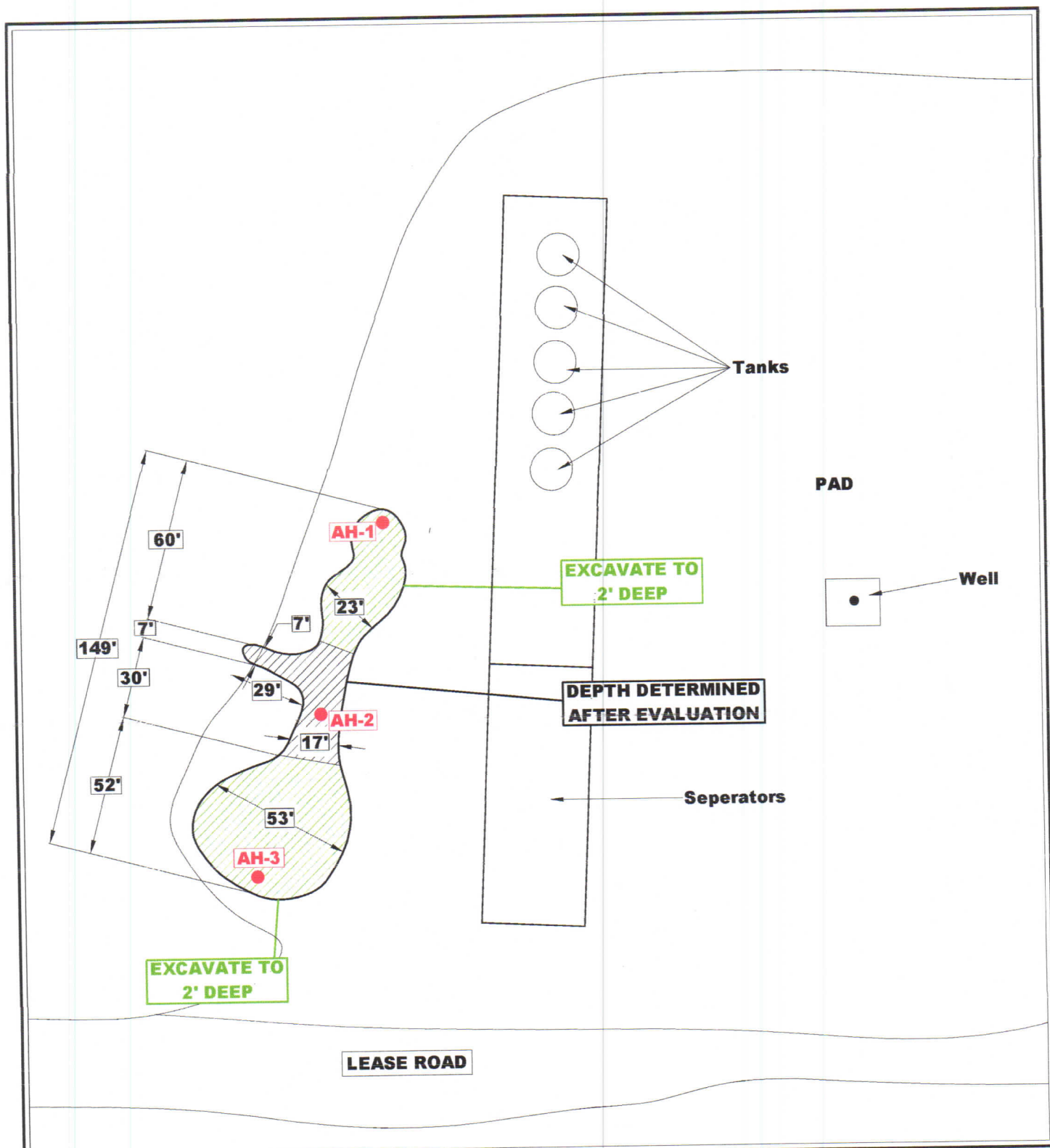
0 25 50
SCALE: 1 IN = 50 FEET



Figure 3
Honey Graham 29 State Com #6H
Spill Assessment Map
Eddy County, New Mexico

PROJ. NO: COG14001

DATE: 3/2014



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 25 50
SCALE: 1 IN = 50 FEET



Figure 4
Honey Graham 29 State Com #6H
Proposed Excavation Areas & Depths Map
Eddy County, New Mexico

PROJ. NO: COG14001

DATE: 3/2014

TABLES

Table 1. COG Operating LLC.

(Site Name) EDIE County, NM

Concho Honey Graham St. Comm 6H Magala, NM

Concho Honey Graham St. Commission Wagon, NW																
SW 846-8021B																
Sample ID Number	Sample Date	Sample Depth (feet)	BEB Depth (feet)	SW 846-8021B					SW 846-8021B					Total TPH (mg/kg)	Chlorides (mg/kg)	
				Soil Status	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)					
In -situ	Removed	10 mg/kg					50 mg/kg									
AH-1	02/20/14	0-1'														12000
AH-1	02/20/14	1.5														2330
AH-1	02/20/14	2.5														451
AH-1	02/20/14	3.5														456
AH-2	02/20/14	0-1'														5790
AH-2	02/20/14	1.5														1100
AH-2	02/20/14	2.5														918
AH-2	02/20/14	3.5 T														1220
AH-3	02/20/14	0-1'														13800
AH-3	02/20/14	1.5														824
AH-3	02/20/14	2.5														246
AH-3	02/20/14	3.5														246

NMOCD: New Mexico Oil Conservation Division

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

Green Highlight indicates areas to be excavated

T Indicates total depth of excavation will be determined in the field

PHOTOS

COG Operating LLC
Honey Graham 29 State Com #6H
Eddy County, New Mexico



View looking North AH #1



View looking South AH #2 and AH #3

COG Operating LLC
Honey Graham 29 State Com #6H
Eddy County, New Mexico



View looking West



View looking South at low spot on South end near AH #3

APPENDIX A

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
70 Rio Brazos Road, Aztec, NM 87410
District IV
10 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	Honey Graham 29 State Com #006H	Facility Type	Flowline
Surface Owner	State	Mineral Owner	Lease No. (API#) 30-015-38488

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	29	26S	28E					Eddy

Latitude 32.06168 Longitude 104.09991

NATURE OF RELEASE

Type of Release	Volume of Release	Volume Recovered
Produced water	12bbbls	10bbbls
Source of Release	Date and Hour of Occurrence	Date and Hour of Discovery
Polyline Y connection	01-22-2014	01-22-2014 11:00am
Was Immediate Notice Given?	If YES, To Whom?	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Not Required		
By Whom?	Date and Hour	
Was a Watercourse Reached?	If YES, Volume Impacting the Watercourse.	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

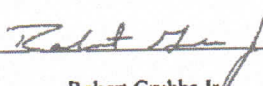
The weld on the Y failed. Cut out the bad connection and welded the polyline.

Describe Area Affected and Cleanup Action Taken.*

Initially 12bbbls of produced water were released. We were able to recover 10bbbls 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:
E-mail Address:	rgrubbs@concho.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date:	02-03-2014	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 01668		ED	3	3	12	26S	28E		589957	3546554*	250	100	150
C 02160		ED	4	1	2	14	26S	28E	589243	3546044*	300	120	180
C 02160 S		ED	1	1	2	14	26S	28E	589043	3546244*	300	120	180
C 02160 S2		ED	1	1	2	14	26S	28E	589043	3546244*	300	120	180
C 02160 S3		ED	2	2	1	14	26S	28E	588834	3546241*	300	120	180
C 02160 S4		ED	2	2	1	14	26S	28E	588834	3546241*	300	120	180
C 02160 S5		ED	1	1	1	14	26S	28E	588225	3546237*	300	120	180
C 02160 S6		ED	3	3	1	14	26S	28E	588232	3545635*	300	120	180
C 02160 S7		ED	3	3	1	22	26S	28E	586638	3543998*	300	120	180
C 02160 S8		ED	2	3	3	12	26S	28E	590056	3546653*	200	120	80
C 02160 S9		ED	3	3	2	02	26S	28E	589020	3548868*	300	120	180
C 02477	CUB	ED	1	1	03	26S	28E		586687	3549347*	150		
C 02478	CUB	ED	2	1	05	26S	28E		583848	3549325*	100		
C 02479	CUB	ED	4	4	10	26S	28E		587909	3546534*	200		
C 02480	CUB	ED	4	4	10	26S	28E		587909	3546534*	150		
C 02481	CUB	ED	1	1	14	26S	28E		588326	3546138*	200		
C 02894	C	ED	2	2	3	12	26S	28E	590458	3547061*	240		
C 02924	C	ED	1	3	2	11	26S	28E	589032	3547451*			

Average Depth to Water: **118 feet**

Minimum Depth: **100 feet**

Maximum Depth: **120 feet**

Record Count: 18

PLSS Search:

Township: 26S

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.

3/12/14 9:44 PM

Page 1 of 1
Page 1 of 1

3/12/14 9:44 PM

WATER COLUMN/AVERAGE
DEPTH TO WATER

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: 14022127



Project Location: Magala, NM
Project Name: Honey Graham St Comm 6H

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
355513	AH 1 0-1'	soil	2014-02-20	15:00	2014-02-21
355514	AH 1 1.5	soil	2014-02-20	15:05	2014-02-21
355515	AH 1 2.5	soil	2014-02-20	15:10	2014-02-21
355516	AH 1 3.5	soil	2014-02-20	15:15	2014-02-21
355517	AH 2 0-1'	soil	2014-02-20	15:20	2014-02-21
355518	AH 2 1.5	soil	2014-02-20	15:25	2014-02-21
355519	AH 2 2.5	soil	2014-02-20	15:30	2014-02-21
355520	AH 2 3.5	soil	2014-02-20	15:35	2014-02-21
355521	AH 3 0-1'	soil	2014-02-20	15:40	2014-02-21
355522	AH 3 1.5	soil	2014-02-20	15:45	2014-02-21
355523	AH 3 2.5	soil	2014-02-20	15:50	2014-02-21
355524	AH 3 3.5	soil	2014-02-20	15:55	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)
355513 - AH 1 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
355517 - AH 2 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00
355521 - AH 3 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00

Sample: 355513 - AH 1 0-1'

Param	Flag	Result	Units	RL
Chloride		12000	mg/Kg	4

Sample: 355514 - AH 1 1.5

Param	Flag	Result	Units	RL
Chloride		2330	mg/Kg	4

Sample: 355515 - AH 1 2.5

Param	Flag	Result	Units	RL
Chloride		451	mg/Kg	4

Sample: 355516 - AH 1 3.5

Param	Flag	Result	Units	RL
Chloride		456	mg/Kg	4

Sample: 355517 - AH 2 0-1'

Param	Flag	Result	Units	RL
Chloride		5790	mg/Kg	4

Sample: 355518 - AH 2 1.5

Param	Flag	Result	Units	RL
Chloride		1100	mg/Kg	4

Sample: 355519 - AH 2 2.5

Param	Flag	Result	Units	RL
Chloride		918	mg/Kg	4

Sample: 355520 - AH 2 3.5

Param	Flag	Result	Units	RL
Chloride		1220	mg/Kg	4

Sample: 355521 - AH 3 0-1'

Param	Flag	Result	Units	RL
Chloride		13800	mg/Kg	4

Report Date: March 3, 2014

Work Order: 14022127

Page Number: 3 of 3

Sample: 355522 - AH 3 1.5

Param	Flag	Result	Units	RL
Chloride		824	mg/Kg	4

Sample: 355523 - AH 3 2.5

Param	Flag	Result	Units	RL
Chloride		246	mg/Kg	4

Sample: 355524 - AH 3 3.5

Param	Flag	Result	Units	RL
Chloride		246	mg/Kg	4

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Ave, Ste 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

BioAquatec Testing
2501 Mayes Rd., Ste 100
Carrollton, Texas 75008
Tel (872) 242-7750

ANALYSIS REQUEST

(Circle or Specify Method No.)

Company Name: **EnTech Consulting**

Address: 31 WATERWAY AVE D300
The Woodlands, Tex. 77380

Contact Person: **Darrell Moore**

Phone #: **432.266.8375**

Fax #: **281.362.2704**

E-mail: **darrell.moore@entech service .com**

Project Name: **Concho Attn: Robert Grubbs**

Project Location: **Magala NM.**

Project #: **365513**

Sampler Signature: SAANE DILLER
SA A. DILL

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	PRESERVATIVE METHOD				MATRIX			SAMPLING	
				WATER	AIR	SLUDGE	HCL	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE
513	AH 1 0-1'	1		X							X	
514	AH 1 1.5	1		X							X	
515	AH 1 2.5	1		X							X	
516	AH 1 3.5	1		X							X	
517	AH 2 0-1'	1		X							X	
518	AH 2 1.5	1		X							X	
519	AH 2 2.5	1		X							X	
520	AH 2 3.5	1		X							X	
521	AH 3 0-1'	1		X							X	
522	AH 3 1.5	1		X							X	
523	AH 3 2.5	1		X							X	

Relinquished by: <u>SA A. DILL</u>	Company: <u>Entech</u>	Date: <u>2-21-14</u>	Time: <u>1400</u>
Received by: <u>Allison Johnson</u>	Company: <u>Johnson</u>	Date: <u>2-21-14</u>	Time: <u>14:00</u>
Relinquished by:	Company:	Date:	Time:
Received by:	Company:	Date:	Time:

REMARKS: If TPH/BTEX are in exceedence please run next sample in line.

LAB USE ONLY

Intact Y / N N

Headspace Y / N NA

Log-in Review NA

Carrier # CARRY-IN