SITE INFORMATION

Report Type: Work Plan 2RP-4152

General Site Information:						
Site:	**Michalada Federal #3D**					
Company:	**COG Operating LLC**					
Section, Township and Range	**Unit B**	**Sec. 03**	**T 22S**	**R 25E**		
Lease Number:	**API No. 30-015-35157**					
County:	**Eddy County**					
GPS:	**32.425584º N**			**104.383025º W**		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From the intersection of NM 524 and Jones St, travel west on Jones Rd for approx. 4.3 miles, turn north onto lease road for 1.1 miles, turn north onto lease road for 2.10 mi to location					

Release Data:	
Date Released:	3/10/2017
Type Release:	Oil
Source of Contamination:	Sight Glass
Fluid Released:	12 bbls
Fluids Recovered:	5 bbls

Official Communication:			
Name:	Robert McNeil		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	One Concho Center		4000 N. Big Spring
	600 W. Illinois Ave.		Ste 401
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 687-8110
Fax:	(432) 684-7137		
Email:	rmcneil@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***	*100'-125'*
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

June 27, 2017

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

Re: Work Plan for the COG Operating LLC., Michalada Federal #3D, Unit B, Section 03, Township 22 South, Range 25 East, Eddy County, New Mexico. 2RP-4152.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC., (COG) to prepare a work plan for a release that occurred at the Michalada Federal #3D, Unit B, Section 03, Township 22 South, Range 25 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.425584º, W 104.383025º. 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 March 10, 2017, and released approximately twelve (12) barrels of oil due to a broken sight glass. Approximately five (5) barrels of oil was recovered. The release occurred within the bermed facility and measured approximately 15' x 100'. The initial C-141 Form is included in Appendix A.

Groundwater

There are no water wells listed within Section 03 reported on the New Mexico Office of the State Engineers database. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in the area is between 100' and 125' below surface. The groundwater data is shown in Appendix B.

Tetra Tech
4000 North Big Spring, Suite 401, 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 April 26, 2017, COG personnel were onsite to evaluate and sample the release area. Using a backhoe one (1) sample Trench (T-1) was installed in the release 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 trench locations are shown on Figure 3.

Referring to Table 1, Trench (T-1) showed TPH and Total BTEX concentrations exceeding the RRAL to a depth of 3.0' below surface, but declined below the RRAL's to 192 mg/kg and 0.814, respectively. The TPH concentrations ranged from 4,830 mg/kg (2.0') to 7,850 mg/kg (3.0') and the Total BTEX ranged from 188 mg/kg (2.0') and 358 mg/kg (2.0'). The chloride concentrations detected were not significant and all less the 200 mg/kg.

Work Plan

Based on the laboratory results, COG proposes to remove the impacted material as highlighted (green) in Table 1 and shown on Figure 4. To remove the impacted soil for the reportable release, the area of Trench (T-1) will be excavated to a depth of 3.0' below surface to remove elevated TPH and BTEX soils. Once the areas is excavated to the appropriate depth, the excavation will be backfilled with clean material to surface grade. All of the excavated material will be transported offsite for proper disposal.

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

TETRA TECH

Conclusion

Upon completion, a final report detailing the remediation activities will be submitted to the NMOCD. If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call at (432) 682-4559.

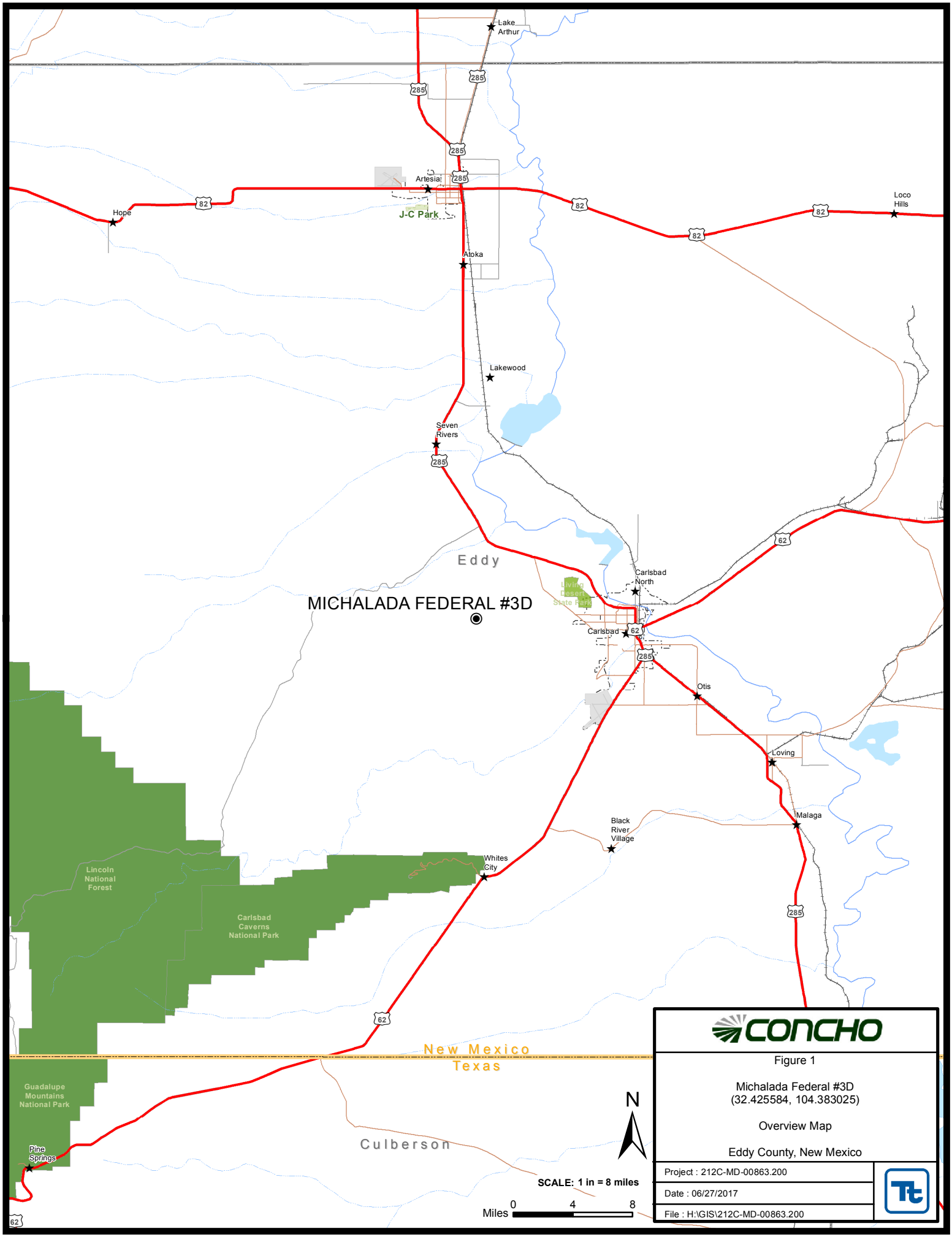
Respectfully submitted,
TETRA TECH

Clair Gonzales,
Geologist I

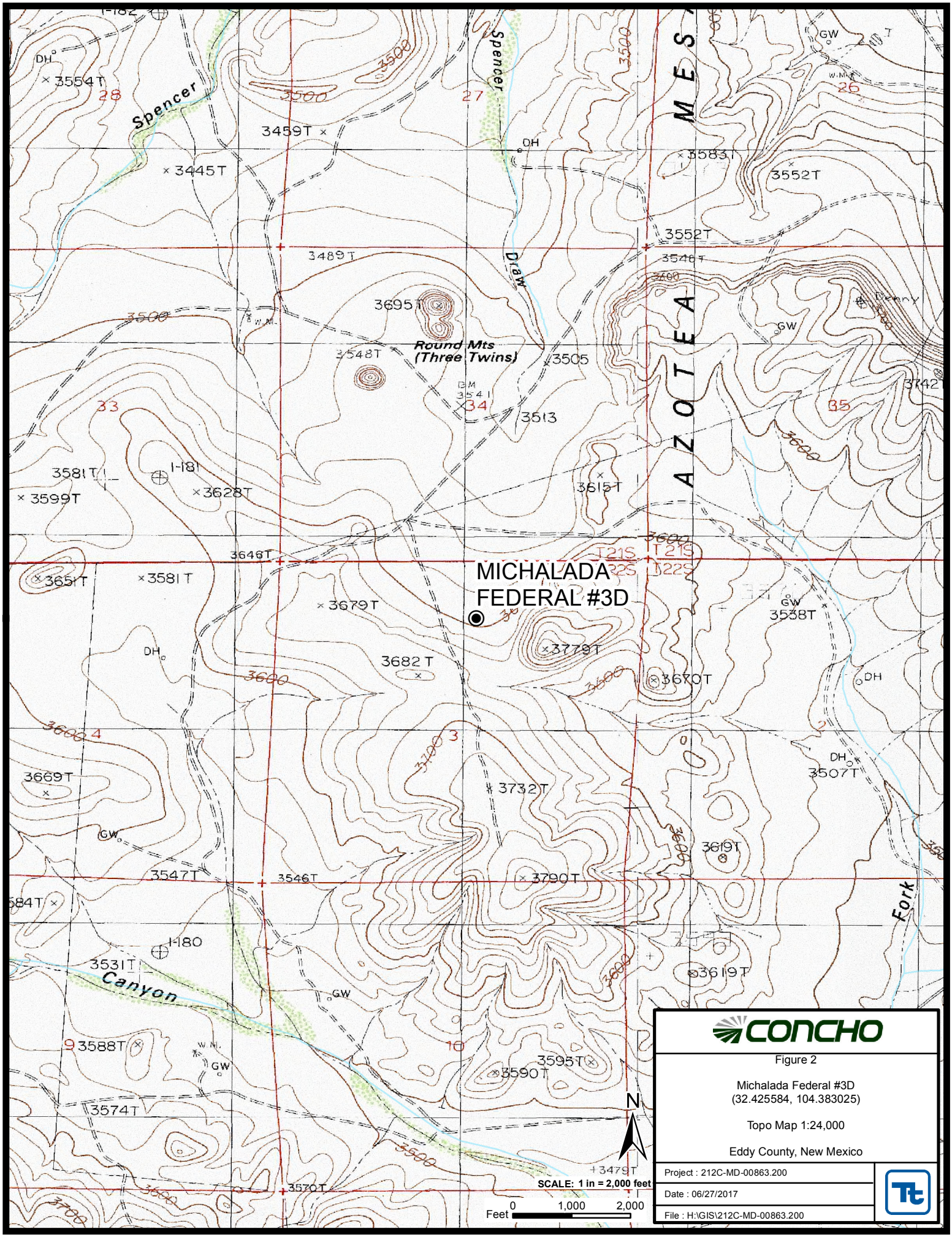
Ike Tavarez,
Senior Project Manager, P.G.

cc: Robert McNeill – COG
Dakota Neel – COG
Rebecca Haskell – COG
Shelly Tucker - BLM

Figures



Mapped By: Isabel Marmolejo



CONCHO

Figure 2

Michalada Federal #3D
(32.425584, 104.383025)

Topo Map 1:24,000

Eddy County, New Mexico

Project : 212C-MD-00863.200	
Date : 06/27/2017	
File : H:\GIS\212C-MD-00863.200	

Mapped By: Isabel Marmolejo

CONCHO

Figure 3

Michalada Federal #3D
(32.425584, 104.383025)

Spill Assessment Map

Eddy County, New Mexico

Project : 212C-MD-00863.300

Date : 06/27/2017

File : H:\GIS\212C-MD-00863.300

Mapped By: Isabel Marmolejo

CONCHO

Figure 4

Michalada Federal #3D
(32.425584, 104.383025)

Proposed Excavation Areas & Depths Map

Eddy County, New Mexico

Project : 212C-MD-00863.300	
Date : 06/27/2017	
File : H:\GIS\212C-MD-00863.300	

Mapped By: Isabel Marmolejo

Tables

Table 1
COG Operating LLC.
Michalada Federal #3D
Eddy 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	C6-C10	C10-C28	C28-C35	Total						
T-1	4/26/2017	Surface	X		1830	4090	288	**6210**	0.524	9.53	12.1	99.1	**121**	196
	"	1	X		3100	2150	<150	**5250**	1.39	38.2	18.9	130	**188**	14.1
	"	2	X		2740	2090	<149	**4830**	3.27	74.6	35.7	244	**358**	113
	"	3	X		4280	3300	268	**7850**	3.78	67.5	31.3	209	**312**	24.5
	"	4	X		67.6	124	<15.0	192	<0.00641	<0.00641	0.101	0.713	0.814	7.39
	"	6	X		<15.0	<15.0	<15.0	<15.0	<0.00357	<0.00357	<0.00357	<0.00357	<0.00357	<4.97
	"	8	X		41.9	104	<14.9	146	<0.00364	0.0178	0.0433	0.311	0.372	16.0
	"	10	X		133	304	22.3	**459**	<0.00200	0.0130	0.0418	0.404	0.459	22.2

(-) Not Analyzed

Proposed Excavation Depths

Appendix A

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., 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 August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Repor

Name of Company: COG Operating LLC OGRID # 229137	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-683-7443
Facility Name: Michalada Federal #003D	Facility Type: Tank Battery

Surface Owner: Federal	Mineral Owner:	API No. 30-015-35157

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	03	22S	25E	990	North	2287	East	Eddy

Latitude 32.425584 **Longitude** -104.383025

NATURE OF RELEASE

Type of Release: Oil	Volume of Release: 12 bbls	Volume Recovered: 5 bbls
Source of Release: Sight Glass	Date and Hour of Occurrence: March 10, 2017 11:30 am	Date and Hour of Discovery: March 10, 2017 11:30 am
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

The release was due to a broken sight glass. The sight glass was replaced.

Describe Area Affected and Cleanup Action Taken.*

The release occurred within an unlined facility. A vacuum truck was dispatched to remove all freestanding fluids. Concho will have the spill area sampled to delineate any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

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: Rebecca Haskell		OIL CONSERVATION DIVISION	
Printed Name:	Rebecca Haskell	Approved by Environmental Specialist:	
Title:	Senior HSE Coordinator	Approval Date:	Expiration Date:
E-mail Address:	rhaskell@concho.com	Conditions of Approval:	Attached ☐
Date: March 20, 2017	Phone: 432-683-7443		

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Michalada Federal #3D
Eddy County, New Mexico

21 South 24 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 25 East

6	5 348	4 97	3 65	2	1
7	8	9	10	11	12
18 80	17 220	16	15	14	13
19	20	21	22 260	23	24
30	29	28	27	26 90	25
31	32	33 60	34	35	36

21 South 26 East

6	5 65	4	3 140	2 120	1 89
7 66	8 170	9 150	10 115	11	12
18 150 240	17 174 178 35	16 139 65	15 93 65	14	13 76 170
19 254	20 210	21 70	22 55	23 36 34	24 50 43
30 115	29 220	28 75 190	27	26 40	25 41 40
31 200	32 164	33 45 120	34	35 90	36 23 26

22 South 24 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

22 South 25 East

6	5	4	3 SITE	2	1
7	8	9	10	11	12
18	17	16	15 150	14	13
19 60	20	21	22	23	24
30	29 60	28 52	27	26	25
31	32	33	34	35	36

22 South 26 East

6	5	4 68	3 140 135	2 105	1 32 41
7	8	9 73	10 95	11 60 60	12 32 45
18	17	16	15	14 68 30	13 45 60
19	20 180	21	22	23 78	24 85 108
30	29	28 140	27 96	26 71	25 96
31 105	32	33	34	35 150	36 115

23 South 24 East

6	5	4	3	2	1
7	8	9	10	11 238	12
18	17	16 175	15	14 18 20	13
19	20	21	22	23	24
30	29 170	28 663	27	26	25
31	32	33 90	34	35	36

23 South 25 East

6 485	5	4	3	2	1
7	8	9 593	10 75 55	11	12 90
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35 511	36

23 South 26 East

6	5	4	3 220	2	1
7	8 267	9	10	11	12
18	17	16	15	14	13
19	20	21	22 224	23	24
30 99	29	28	27	26	25
31	32 223	33	34	35	36

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)

Geology and Groundwater Resources of Eddy County, NM (Report 3)

34 NMOCD - Groundwater Data

123 Tetra Tech installed temporary wells and field water level

143 NMOCD Groundwater map well location

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	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
C 00959		C	ED	1	1	1	27	22S	25E	557349	3581495*			
C 00960		C	ED	3	1	2	28	22S	25E	556534	3581303*	69	52	17
C 00961		C	ED	4	1	2	19	22S	25E	553461	3582890*	80	60	20
C 00988		C	ED			4	01	22S	25E	561503	3586854*	55	20	35
C 01288		C	ED		1	4	20	22S	25E	554996	3582193*	800		
C 01492		C	ED	1	2	4	30	22S	25E	553689	3580659*			
C 01738		C	ED	4	2	3	16	22S	25E	556273	3583728*	204		
C 01758		C	ED	4	2	3	16	22S	25E	556273	3583728*			
C 01856		C	ED			4	09	22S	25E	556774	3585236*	460		
C 02362			ED	1	3	3	29	22S	25E	554108	3580247*	83	60	23
C 02874		C	ED	4	3	2	11	22S	25E	559796	3585738*	740	385	355
C 03552 POD1		C	ED	4	4	2	15	22S	25E	558548	3584192	250	150	100

Average Depth to Water: **121 feet**

Minimum Depth: **20 feet**

Maximum Depth: **385 feet**

Record Count: 12

PLSS Search:

Township: 22S **Range:** 25E

***UTM location was derived from PLSS - see Help**

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	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Twn	Rng	X	Y	Depth Well	Depth Water	Water Column
C 00107		CUB	ED	4	3	3	09	21S	25E	555822	3594647*	300		
C 00384		C	ED	1	4	1	17	21S	25E	554431	3593935	994	220	774
C 00384 CLW201180	O		ED	3	2	1	17	21S	25E	554411	3594236*	994	220	774
C 00384 CLW201207	O		ED	3	2	1	17	21S	25E	554411	3594236*	994	220	774
C 00550		C	ED	1	1	2	11	21S	25E	559689	3596136*	97		
C 00885		C	ED	3	4	2	05	21S	25E	555204	3597091*	348		
C 00885 POD2		C	ED	3	4	2	05	21S	25E	555204	3597091*	379	348	31
C 01041		C	ED	3	3	3	03	21S	25E	557260	3596343*	85	65	20
C 01166		C	ED		1	3	11	21S	25E	558976	3595176*	550		
C 01399		C	LE	3	3	2	15	21S	25E	558068	3593839*	200		
C 01451		C	ED		3	3	22	21S	25E	557373	3591507*	290	260	30
C 01455		C	ED		3	2	26	21S	25E	559780	3590713*	125	90	35
C 01456	R	C	ED		2	2	33	21S	25E	557012	3589339	60	17	43
C 01456 POD2		C	ED	4	2	2	33	21S	25E	557012	3589339	80	60	20
C 01470		C	ED		2	4	06	21S	25E	553698	3596774*	284	264	20
C 02066		C	ED	3	3	3	04	21S	25E	555616	3596280*	120	97	23
C 02268			ED	1	4	3	11	21S	25E	559277	3594853*	30	25	5
C 02643		C	ED		3	3	03	21S	25E	557361	3596444*	145	33	112
C 02731		C	ED	1	3	4	18	21S	25E	553218	3593208*	233	60	173
C 03618 POD1		C	ED	2	2	1	03	21S	25E	557943	3597754	160	80	80

Average Depth to Water: **137 feet**

Minimum Depth: **17 feet**

Maximum Depth: **348 feet**

Record Count: 20

PLSS Search:

Township: 21S **Range:** 25E

***UTM location was derived from PLSS - see Help**

Appendix C

Certificate of Analysis Summary 552078

COG Operating LLC, Artesia, NM

Project Name: Michalada Federal #003D

Project Id:

Contact: Aaron Lieb

Project Location: Michalada Federal #003D

Date Received in Lab: Fri Apr-28-17 11:00 am

Report Date: 05-MAY-17

Project Manager: Liz Givens

Analysis Requested													
	Lab Id:	552078-001		552078-002		552078-003		552078-004		552078-005		552078-006	
	Field Id:	T1- Surface		T1- 1'		T1- 2'		T1- 3'		T1- 4'		T1- 6'	
	Depth:			1 ft		2 ft		3 ft		4 ft		6 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-26-17 09:30		Apr-26-17 09:35		Apr-26-17 09:40		Apr-26-17 09:45		Apr-26-17 09:47		Apr-26-17 10:00	
BTEX by EPA 8021B	***Extracted:***	May-03-17 09:00		May-03-17 09:00		May-03-17 09:00		May-03-17 09:00		May-04-17 11:55		May-03-17 16:00	
	Analyzed:	May-03-17 13:58		May-03-17 14:14		May-03-17 14:34		May-03-17 14:50		May-05-17 12:00		May-04-17 14:09	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		0.524	0.499	1.39	1.00	3.27	1.00	3.78	1.01	<0.00641	0.00641	<0.00357	0.00357
Toluene		9.53	0.499	38.2	1.00	74.6	1.00	67.5	1.01	<0.00641	0.00641	<0.00357	0.00357
Ethylbenzene		12.1	0.499	18.9	1.00	35.7	1.00	31.3	1.01	0.101	0.00641	<0.00357	0.00357
m,p-Xylenes		74.4	0.998	97.7	2.01	193	2.00	165	2.02	0.496	0.0128	<0.00714	0.00714
o-Xylene		24.7	0.499	32.0	1.00	51.4	1.00	44.2	1.01	0.217	0.00641	<0.00357	0.00357
Total Xylenes		99.1	0.499	130	1.00	244	1.00	209	1.01	0.713	0.00641	<0.00357	0.00357
Total BTEX		121	0.499	188	1.00	358	1.00	312	1.01	0.814	0.00641	<0.00357	0.00357
Inorganic Anions by EPA 300/300.1	***Extracted:***	May-03-17 16:00		May-03-17 16:00		May-03-17 16:00		May-03-17 16:00		May-03-17 16:00		May-03-17 16:00	
	Analyzed:	May-03-17 22:30		May-03-17 22:53		May-03-17 23:01		May-03-17 23:08		May-03-17 23:16		May-03-17 23:39	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		196	5.00	14.1	5.00	113	4.88	24.5	4.86	7.39	4.98	<4.97	4.97
TPH By SW8015 Mod	***Extracted:***	May-01-17 13:00		May-01-17 13:00		May-01-17 13:00		May-01-17 13:00		May-01-17 13:00		May-01-17 13:00	
	Analyzed:	May-01-17 20:02		May-01-17 20:21		May-01-17 20:41		May-01-17 20:59		May-01-17 21:18		May-01-17 21:38	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons		1830	150	3100	150	2740	149	4280	150	67.6	15.0	<15.0	15.0
C10-C28 Diesel Range Hydrocarbons		4090	150	2150	150	2090	149	3300	150	124	15.0	<15.0	15.0
C28-C35 Oil Range Hydrocarbons		288	150	<150	150	<149	149	268	150	<15.0	15.0	<15.0	15.0
Total TPH		6210	150	5250	150	4830	149	7850	150	192	15.0	<15.0	15.0

Brandi Ritcherson
Project Manager

Certificate of Analysis Summary 552078

COG Operating LLC, Artesia, NM

Project Name: Michalada Federal #003D

Project Id:

Contact: Aaron Lieb

Project Location: Michalada Federal #003D

Date Received in Lab: Fri Apr-28-17 11:00 am

Report Date: 05-MAY-17

Project Manager: Liz Givens

Analysis Requested									
	Lab Id:	552078-007		552078-008					
	Field Id:	T1- 8'		T1- 10'					
	Depth:	8 ft		10 ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Apr-26-17 10:05		Apr-26-17 10:10					
BTEX by EPA 8021B	***Extracted:***	May-03-17 16:00		May-03-17 09:00					
	Analyzed:	May-04-17 13:53		May-03-17 17:48					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		<0.00364	0.00364	<0.00200	0.00200				
Toluene		0.0178	0.00364	0.0130	0.00200				
Ethylbenzene		0.0433	0.00364	0.0418	0.00200				
m,p-Xylenes		0.163	0.00727	0.276	0.00399				
o-Xylene		0.148	0.00364	0.128	0.00200				
Total Xylenes		0.311	0.00364	0.404	0.00200				
Total BTEX		0.372	0.00364	0.459	0.00200				
Inorganic Anions by EPA 300/300.1	***Extracted:***	May-03-17 16:00		May-03-17 16:00					
	Analyzed:	May-03-17 23:46		May-03-17 23:54					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		16.0	4.93	22.2	4.88				
TPH By SW8015 Mod	***Extracted:***	May-01-17 13:00		May-01-17 13:00					
	Analyzed:	May-01-17 21:57		May-01-17 22:16					
	Units/RL:	mg/kg	RL	mg/kg	RL				
C6-C10 Gasoline Range Hydrocarbons		41.9	14.9	133	15.0				
C10-C28 Diesel Range Hydrocarbons		104	14.9	304	15.0				
C28-C35 Oil Range Hydrocarbons		<14.9	14.9	22.3	15.0				
Total TPH		146	14.9	459	15.0				

Brandi Ritcherson
Project Manager

Analytical Report 552078

for

COG Operating LLC

Project Manager: Aaron Lieb

Michalada Federal #003D

05-MAY-17

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

05-MAY-17

Project Manager: **Aaron Lieb**
COG Operating LLC
2407 Pecos Avenue
Artesia, NM 88210

Reference: XENCO Report No(s): **552078**
Michalada Federal #003D
Project Address: Michalada Federal #003D

Aaron Lieb:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 552078. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 552078 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Brandi Ritcherson
Project Manager

Sample Cross Reference 552078

COG Operating LLC, Artesia, NM

Michalada Federal #003D

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T1- Surface	S	04-26-17 09:30		552078-001
T1- 1'	S	04-26-17 09:35	- 1 ft	552078-002
T1- 2'	S	04-26-17 09:40	- 2 ft	552078-003
T1- 3'	S	04-26-17 09:45	- 3 ft	552078-004
T1- 4'	S	04-26-17 09:47	- 4 ft	552078-005
T1- 6'	S	04-26-17 10:00	- 6 ft	552078-006
T1- 8'	S	04-26-17 10:05	- 8 ft	552078-007
T1- 10'	S	04-26-17 10:10	- 10 ft	552078-008

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3016416 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3016591 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3016595 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results 552078

COG Operating LLC, Artesia, NM

Michalada Federal #003D

Sample Id:	**T1- Surface**	Matrix:	Soil	Date Received:	04.28.17 11.00
Lab Sample Id:	552078-001	Date Collected:	04.26.17 09.30		

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.03.17 16.00	Basis:	Wet Weight
Seq Number:	3016455				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**196**	5.00	mg/kg	05.03.17 22.30		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.01.17 13.00	Basis:	Wet Weight
Seq Number:	3016254				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**1830**	150	mg/kg	05.01.17 20.02		10
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	**4090**	150	mg/kg	05.01.17 20.02		10
C28-C35 Oil Range Hydrocarbons	PHCG2835	**288**	150	mg/kg	05.01.17 20.02		10
Total TPH	PHC635	**6210**	150	mg/kg	05.01.17 20.02		10

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	05.01.17 20.02	
o-Terphenyl	84-15-1	103	%	70-135	05.01.17 20.02	

Certificate of Analytical Results 552078

COG Operating LLC, Artesia, NM

Michalada Federal #003D

Sample Id:	**T1- Surface**	Matrix:	Soil	Date Received:	04.28.17 11.00
Lab Sample Id:	552078-001	Date Collected:	04.26.17 09.30		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	05.03.17 09.00	Basis:	Wet Weight
Seq Number:	3016416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.524**	0.499	mg/kg	05.03.17 13.58		250
Toluene	108-88-3	**9.53**	0.499	mg/kg	05.03.17 13.58		250
Ethylbenzene	100-41-4	**12.1**	0.499	mg/kg	05.03.17 13.58		250
m,p-Xylenes	179601-23-1	**74.4**	0.998	mg/kg	05.03.17 13.58		250
o-Xylene	95-47-6	**24.7**	0.499	mg/kg	05.03.17 13.58		250
Total Xylenes	1330-20-7	**99.1**	0.499	mg/kg	05.03.17 13.58		250
Total BTEX		**121**	0.499	mg/kg	05.03.17 13.58		250

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106	%	80-120	05.03.17 13.58	
4-Bromofluorobenzene	460-00-4	89	%	80-120	05.03.17 13.58	

Certificate of Analytical Results 552078

COG Operating LLC, Artesia, NM

Michalada Federal #003D

Sample Id:	**T1- 1'**	Matrix:	Soil	Date Received:	04.28.17 11.00
Lab Sample Id:	552078-002	Date Collected:	04.26.17 09.35	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.03.17 16.00	Basis:	Wet Weight
Seq Number:	3016455				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**14.1**	5.00	mg/kg	05.03.17 22.53		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.01.17 13.00	Basis:	Wet Weight
Seq Number:	3016254				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**3100**	150	mg/kg	05.01.17 20.21		10
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	**2150**	150	mg/kg	05.01.17 20.21		10
C28-C35 Oil Range Hydrocarbons	PHCG2835	<150	150	mg/kg	05.01.17 20.21	U	10
Total TPH	PHC635	**5250**	150	mg/kg	05.01.17 20.21		10

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	05.01.17 20.21	
o-Terphenyl	84-15-1	95	%	70-135	05.01.17 20.21	

Certificate of Analytical Results 552078

COG Operating LLC, Artesia, NM

Michalada Federal #003D

Sample Id:	**T1- 1'**	Matrix:	Soil	Date Received:	04.28.17 11.00
Lab Sample Id:	552078-002	Date Collected:	04.26.17 09.35	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	05.03.17 09.00	Basis:	Wet Weight
Seq Number:	3016416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**1.39**	1.00	mg/kg	05.03.17 14.14		500
Toluene	108-88-3	**38.2**	1.00	mg/kg	05.03.17 14.14		500
Ethylbenzene	100-41-4	**18.9**	1.00	mg/kg	05.03.17 14.14		500
m,p-Xylenes	179601-23-1	**97.7**	2.01	mg/kg	05.03.17 14.14		500
o-Xylene	95-47-6	**32.0**	1.00	mg/kg	05.03.17 14.14		500
Total Xylenes	1330-20-7	**130**	1.00	mg/kg	05.03.17 14.14		500
Total BTEX		**188**	1.00	mg/kg	05.03.17 14.14		500

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	81	%	80-120	05.03.17 14.14	
4-Bromofluorobenzene	460-00-4	81	%	80-120	05.03.17 14.14	

Certificate of Analytical Results 552078

COG Operating LLC, Artesia, NM

Michalada Federal #003D

Sample Id:	**T1- 2'**	Matrix:	Soil	Date Received:	04.28.17 11.00
Lab Sample Id:	552078-003	Date Collected:	04.26.17 09.40	Sample Depth:	2 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.03.17 16.00	Basis:	Wet Weight
Seq Number:	3016455				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**113**	4.88	mg/kg	05.03.17 23.01		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.01.17 13.00	Basis:	Wet Weight
Seq Number:	3016254				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**2740**	149	mg/kg	05.01.17 20.41		10
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	**2090**	149	mg/kg	05.01.17 20.41		10
C28-C35 Oil Range Hydrocarbons	PHCG2835	<149	149	mg/kg	05.01.17 20.41	U	10
Total TPH	PHC635	**4830**	149	mg/kg	05.01.17 20.41		10

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	05.01.17 20.41	
o-Terphenyl	84-15-1	107	%	70-135	05.01.17 20.41	

Certificate of Analytical Results 552078

COG Operating LLC, Artesia, NM

Michalada Federal #003D

Sample Id:	**T1- 2'**	Matrix:	Soil	Date Received:	04.28.17 11.00
Lab Sample Id:	552078-003	Date Collected:	04.26.17 09.40	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	05.03.17 09.00	Basis:	Wet Weight
Seq Number:	3016416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**3.27**	1.00	mg/kg	05.03.17 14.34		500
Toluene	108-88-3	**74.6**	1.00	mg/kg	05.03.17 14.34		500
Ethylbenzene	100-41-4	**35.7**	1.00	mg/kg	05.03.17 14.34		500
m,p-Xylenes	179601-23-1	**193**	2.00	mg/kg	05.03.17 14.34		500
o-Xylene	95-47-6	**51.4**	1.00	mg/kg	05.03.17 14.34		500
Total Xylenes	1330-20-7	**244**	1.00	mg/kg	05.03.17 14.34		500
Total BTEX		**358**	1.00	mg/kg	05.03.17 14.34		500

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	80-120	05.03.17 14.34	
1,4-Difluorobenzene	540-36-3	98	%	80-120	05.03.17 14.34	

Certificate of Analytical Results 552078

COG Operating LLC, Artesia, NM

Michalada Federal #003D

Sample Id:	**T1- 3'**	Matrix:	Soil	Date Received:	04.28.17 11.00
Lab Sample Id:	552078-004	Date Collected:	04.26.17 09.45	Sample Depth:	3 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.03.17 16.00	Basis:	Wet Weight
Seq Number:	3016455				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**24.5**	4.86	mg/kg	05.03.17 23.08		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.01.17 13.00	Basis:	Wet Weight
Seq Number:	3016254				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**4280**	150	mg/kg	05.01.17 20.59		10
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	**3300**	150	mg/kg	05.01.17 20.59		10
C28-C35 Oil Range Hydrocarbons	PHCG2835	**268**	150	mg/kg	05.01.17 20.59		10
Total TPH	PHC635	**7850**	150	mg/kg	05.01.17 20.59		10

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	05.01.17 20.59	
o-Terphenyl	84-15-1	105	%	70-135	05.01.17 20.59	

Certificate of Analytical Results 552078

COG Operating LLC, Artesia, NM

Michalada Federal #003D

Sample Id:	**T1- 3'**	Matrix:	Soil	Date Received:	04.28.17 11.00
Lab Sample Id:	552078-004	Date Collected:	04.26.17 09.45	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	05.03.17 09.00	Basis:	Wet Weight
Seq Number:	3016416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**3.78**	1.01	mg/kg	05.03.17 14.50		500
Toluene	108-88-3	**67.5**	1.01	mg/kg	05.03.17 14.50		500
Ethylbenzene	100-41-4	**31.3**	1.01	mg/kg	05.03.17 14.50		500
m,p-Xylenes	179601-23-1	**165**	2.02	mg/kg	05.03.17 14.50		500
o-Xylene	95-47-6	**44.2**	1.01	mg/kg	05.03.17 14.50		500
Total Xylenes	1330-20-7	**209**	1.01	mg/kg	05.03.17 14.50		500
Total BTEX		**312**	1.01	mg/kg	05.03.17 14.50		500

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	85	%	80-120	05.03.17 14.50	
1,4-Difluorobenzene	540-36-3	99	%	80-120	05.03.17 14.50	

Certificate of Analytical Results 552078

COG Operating LLC, Artesia, NM

Michalada Federal #003D

Sample Id:	**T1- 4'**	Matrix:	Soil	Date Received:	04.28.17 11.00
Lab Sample Id:	552078-005	Date Collected:	04.26.17 09.47	Sample Depth:	4 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.03.17 16.00	Basis:	Wet Weight
Seq Number:	3016455				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7.39**	4.98	mg/kg	05.03.17 23.16		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.01.17 13.00	Basis:	Wet Weight
Seq Number:	3016254				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**67.6**	15.0	mg/kg	05.01.17 21.18		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	**124**	15.0	mg/kg	05.01.17 21.18		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	05.01.17 21.18	U	1
Total TPH	PHC635	**192**	15.0	mg/kg	05.01.17 21.18		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	05.01.17 21.18	
o-Terphenyl	84-15-1	110	%	70-135	05.01.17 21.18	

Certificate of Analytical Results 552078

COG Operating LLC, Artesia, NM

Michalada Federal #003D

Sample Id:	**T1- 4'**	Matrix:	Soil	Date Received:	04.28.17 11.00
Lab Sample Id:	552078-005	Date Collected:	04.26.17 09.47	Sample Depth:	4 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	05.04.17 11.55	Basis:	Wet Weight
Seq Number:	3016595				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00641	0.00641	mg/kg	05.05.17 12.00	U	1
Toluene	108-88-3	<0.00641	0.00641	mg/kg	05.05.17 12.00	U	1
Ethylbenzene	100-41-4	**0.101**	0.00641	mg/kg	05.05.17 12.00		1
m,p-Xylenes	179601-23-1	**0.496**	0.0128	mg/kg	05.05.17 12.00		1
o-Xylene	95-47-6	**0.217**	0.00641	mg/kg	05.05.17 12.00		1
Total Xylenes	1330-20-7	**0.713**	0.00641	mg/kg	05.05.17 12.00		1
Total BTEX		**0.814**	0.00641	mg/kg	05.05.17 12.00		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	85	%	80-120	05.05.17 12.00	
4-Bromofluorobenzene	460-00-4	97	%	80-120	05.05.17 12.00	

Certificate of Analytical Results 552078

COG Operating LLC, Artesia, NM

Michalada Federal #003D

Sample Id:	**T1- 6'**	Matrix:	Soil	Date Received:	04.28.17 11.00
Lab Sample Id:	552078-006	Date Collected:	04.26.17 10.00	Sample Depth:	6 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.03.17 16.00	Basis:	Wet Weight
Seq Number:	3016455				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	05.03.17 23.39	U	1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.01.17 13.00	Basis:	Wet Weight
Seq Number:	3016254				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	<15.0	15.0	mg/kg	05.01.17 21.38	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	<15.0	15.0	mg/kg	05.01.17 21.38	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<15.0	15.0	mg/kg	05.01.17 21.38	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.01.17 21.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	05.01.17 21.38	
o-Terphenyl	84-15-1	106	%	70-135	05.01.17 21.38	

Certificate of Analytical Results 552078

COG Operating LLC, Artesia, NM

Michalada Federal #003D

Sample Id:	**T1- 6'**	Matrix:	Soil	Date Received:	04.28.17 11.00
Lab Sample Id:	552078-006	Date Collected:	04.26.17 10.00	Sample Depth:	6 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	05.03.17 16.00	Basis:	Wet Weight
Seq Number:	3016591				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00357	0.00357	mg/kg	05.04.17 14.09	U	1
Toluene	108-88-3	<0.00357	0.00357	mg/kg	05.04.17 14.09	U	1
Ethylbenzene	100-41-4	<0.00357	0.00357	mg/kg	05.04.17 14.09	U	1
m,p-Xylenes	179601-23-1	<0.00714	0.00714	mg/kg	05.04.17 14.09	U	1
o-Xylene	95-47-6	<0.00357	0.00357	mg/kg	05.04.17 14.09	U	1
Total Xylenes	1330-20-7	<0.00357	0.00357	mg/kg	05.04.17 14.09	U	1
Total BTEX		<0.00357	0.00357	mg/kg	05.04.17 14.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	91	%	80-120	05.04.17 14.09	
1,4-Difluorobenzene	540-36-3	107	%	80-120	05.04.17 14.09	

COG Operating LLC, Artesia, NM

Michalada Federal #003D

Sample Id:	**T1- 8'**	Matrix:	Soil	Date Received:	04.28.17 11.00
Lab Sample Id:	552078-007	Date Collected:	04.26.17 10.05	Sample Depth:	8 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.03.17 16.00	Basis:	Wet Weight
Seq Number:	3016455				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**16.0**	4.93	mg/kg	05.03.17 23.46		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.01.17 13.00	Basis:	Wet Weight
Seq Number:	3016254				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**41.9**	14.9	mg/kg	05.01.17 21.57		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	**104**	14.9	mg/kg	05.01.17 21.57		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	<14.9	14.9	mg/kg	05.01.17 21.57	U	1
Total TPH	PHC635	**146**	14.9	mg/kg	05.01.17 21.57		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-135	05.01.17 21.57	
o-Terphenyl	84-15-1	108	%	70-135	05.01.17 21.57	

Certificate of Analytical Results 552078

COG Operating LLC, Artesia, NM

Michalada Federal #003D

Sample Id:	**T1- 8'**	Matrix:	Soil	Date Received:	04.28.17 11.00
Lab Sample Id:	552078-007	Date Collected:	04.26.17 10.05	Sample Depth:	8 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	05.03.17 16.00	Basis:	Wet Weight
Seq Number:	3016591				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00364	0.00364	mg/kg	05.04.17 13.53	U	1
Toluene	108-88-3	**0.0178**	0.00364	mg/kg	05.04.17 13.53		1
Ethylbenzene	100-41-4	**0.0433**	0.00364	mg/kg	05.04.17 13.53		1
m,p-Xylenes	179601-23-1	**0.163**	0.00727	mg/kg	05.04.17 13.53		1
o-Xylene	95-47-6	**0.148**	0.00364	mg/kg	05.04.17 13.53		1
Total Xylenes	1330-20-7	**0.311**	0.00364	mg/kg	05.04.17 13.53		1
Total BTEX		**0.372**	0.00364	mg/kg	05.04.17 13.53		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	111	%	80-120	05.04.17 13.53	
4-Bromofluorobenzene	460-00-4	87	%	80-120	05.04.17 13.53	

Certificate of Analytical Results 552078

COG Operating LLC, Artesia, NM

Michalada Federal #003D

Sample Id:	**T1- 10'**	Matrix:	Soil	Date Received:	04.28.17 11.00
Lab Sample Id:	552078-008	Date Collected:	04.26.17 10.10	Sample Depth:	10 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MGO			% Moisture:	
Analyst:	MGO	Date Prep:	05.03.17 16.00	Basis:	Wet Weight
Seq Number:	3016455				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**22.2**	4.88	mg/kg	05.03.17 23.54		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	05.01.17 13.00	Basis:	Wet Weight
Seq Number:	3016254				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	PHC610	**133**	15.0	mg/kg	05.01.17 22.16		1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	**304**	15.0	mg/kg	05.01.17 22.16		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	**22.3**	15.0	mg/kg	05.01.17 22.16		1
Total TPH	PHC635	**459**	15.0	mg/kg	05.01.17 22.16		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	123	%	70-135	05.01.17 22.16	
o-Terphenyl	84-15-1	127	%	70-135	05.01.17 22.16	

Certificate of Analytical Results 552078

COG Operating LLC, Artesia, NM

Michalada Federal #003D

Sample Id:	**T1- 10'**	Matrix:	Soil	Date Received:	04.28.17 11.00
Lab Sample Id:	552078-008	Date Collected:	04.26.17 10.10	Sample Depth:	10 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	05.03.17 09.00	Basis:	Wet Weight
Seq Number:	3016416				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	05.03.17 17.48	U	1
Toluene	108-88-3	**0.0130**	0.00200	mg/kg	05.03.17 17.48		1
Ethylbenzene	100-41-4	**0.0418**	0.00200	mg/kg	05.03.17 17.48		1
m,p-Xylenes	179601-23-1	**0.276**	0.00399	mg/kg	05.03.17 17.48		1
o-Xylene	95-47-6	**0.128**	0.00200	mg/kg	05.03.17 17.48		1
Total Xylenes	1330-20-7	**0.404**	0.00200	mg/kg	05.03.17 17.48		1
Total BTEX		**0.459**	0.00200	mg/kg	05.03.17 17.48		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	86	%	80-120	05.03.17 17.48	
1,4-Difluorobenzene	540-36-3	97	%	80-120	05.03.17 17.48	

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

QC Summary 552078

COG Operating LLC

Michalada Federal #003D

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3016455 Matrix: Solid Date Prep: 05.03.17
MB Sample Id: 724006-1-BLK LCS Sample Id: 724006-1-BKS LCSD Sample Id: 724006-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	254	102	257	103	90-110	1	20	mg/kg	05.03.17 22:15	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3016455 Matrix: Soil Date Prep: 05.03.17
Parent Sample Id: 552078-001 MS Sample Id: 552078-001 S MSD Sample Id: 552078-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	196	250	472	110	468	109	90-110	1	20	mg/kg	05.03.17 22:38	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3016455 Matrix: Soil Date Prep: 05.03.17
Parent Sample Id: 552079-003 MS Sample Id: 552079-003 S MSD Sample Id: 552079-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	65.7	249	384	128	379	126	90-110	1	20	mg/kg	05.04.17 00:24	X

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3016254 Matrix: Solid Date Prep: 05.01.17
MB Sample Id: 723889-1-BLK LCS Sample Id: 723889-1-BKS LCSD Sample Id: 723889-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	983	98	999	100	70-135	2	35	mg/kg	05.01.17 13:42	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	988	99	1010	101	70-135	2	35	mg/kg	05.01.17 13:42	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		86		107		70-135	%	05.01.17 13:42
o-Terphenyl	105		83		106		70-135	%	05.01.17 13:42

QC Summary 552078

COG Operating LLC

Michalada Federal #003D

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3016254 Matrix: Soil Date Prep: 05.01.17
Parent Sample Id: 552075-001 MS Sample Id: 552075-001 S MSD Sample Id: 552075-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	999	908	91	912	91	70-135	0	35	mg/kg	05.01.17 15:42	
C10-C28 Diesel Range Hydrocarbons	<15.0	999	910	91	934	93	70-135	3	35	mg/kg	05.01.17 15:42	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	102		101		70-135	%	05.01.17 15:42
o-Terphenyl	104		100		70-135	%	05.01.17 15:42

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3016416 Matrix: Solid Date Prep: 05.03.17
MB Sample Id: 724012-1-BLK LCS Sample Id: 724012-1-BKS LCSD Sample Id: 724012-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.106	106	0.104	105	70-130	2	35	mg/kg	05.03.17 09:36	
Toluene	<0.00199	0.0996	0.103	103	0.0983	99	70-130	5	35	mg/kg	05.03.17 09:36	
Ethylbenzene	<0.00199	0.0996	0.114	114	0.119	120	71-129	4	35	mg/kg	05.03.17 09:36	
m,p-Xylenes	<0.00398	0.199	0.219	110	0.227	115	70-135	4	35	mg/kg	05.03.17 09:36	
o-Xylene	<0.00199	0.0996	0.116	116	0.111	112	71-133	4	35	mg/kg	05.03.17 09:36	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	103		106		91		80-120	%	05.03.17 09:36
4-Bromofluorobenzene	84		101		111		80-120	%	05.03.17 09:36

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3016591 Matrix: Solid Date Prep: 05.03.17
MB Sample Id: 724088-1-BLK LCS Sample Id: 724088-1-BKS LCSD Sample Id: 724088-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0990	99	0.0954	96	70-130	4	35	mg/kg	05.04.17 06:45	
Toluene	<0.00199	0.0996	0.101	101	0.0945	95	70-130	7	35	mg/kg	05.04.17 06:45	
Ethylbenzene	<0.00199	0.0996	0.114	114	0.106	106	71-129	7	35	mg/kg	05.04.17 06:45	
m,p-Xylenes	<0.00398	0.199	0.220	111	0.205	103	70-135	7	35	mg/kg	05.04.17 06:45	
o-Xylene	<0.00199	0.0996	0.104	104	0.109	109	71-133	5	35	mg/kg	05.04.17 06:45	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	101		93		100		80-120	%	05.04.17 06:45
4-Bromofluorobenzene	94		98		112		80-120	%	05.04.17 06:45

QC Summary 552078

COG Operating LLC

Michalada Federal #003D

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B

Seq Number: 3016595 | Matrix: Solid | Date Prep: 05.04.17

MB Sample Id: 724125-1-BLK | LCS Sample Id: 724125-1-BKS | LCSD Sample Id: 724125-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.101	101	0.0978	97	70-130	3	35	mg/kg	05.04.17 15:47	
Toluene	<0.00201	0.100	0.0980	98	0.103	102	70-130	5	35	mg/kg	05.04.17 15:47	
Ethylbenzene	<0.00201	0.100	0.111	111	0.120	119	71-129	8	35	mg/kg	05.04.17 15:47	
m,p-Xylenes	<0.00402	0.201	0.217	108	0.235	116	70-135	8	35	mg/kg	05.04.17 15:47	
o-Xylene	<0.00201	0.100	0.102	102	0.102	101	71-133	0	35	mg/kg	05.04.17 15:47	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	110		105		105		80-120	%	05.04.17 15:47
4-Bromofluorobenzene	96		102		96		80-120	%	05.04.17 15:47

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B

Seq Number: 3016416 | Matrix: Soil | Date Prep: 05.03.17

Parent Sample Id: 552077-033 | MS Sample Id: 552077-033 S | MSD Sample Id: 552077-033 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.00274	0.101	0.0803	77	0.0810	77	70-130	1	35	mg/kg	05.03.17 10:41	
Toluene	<0.00203	0.101	0.0740	73	0.0757	75	70-130	2	35	mg/kg	05.03.17 10:41	
Ethylbenzene	<0.00203	0.101	0.0747	74	0.0764	76	71-129	2	35	mg/kg	05.03.17 10:41	
m,p-Xylenes	0.0125	0.203	0.138	62	0.131	59	70-135	5	35	mg/kg	05.03.17 10:41	X
o-Xylene	<0.00203	0.101	0.0813	80	0.0776	77	71-133	5	35	mg/kg	05.03.17 10:41	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	117		117		80-120	%	05.03.17 10:41
4-Bromofluorobenzene	113		106		80-120	%	05.03.17 10:41

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B

Seq Number: 3016591 | Matrix: Soil | Date Prep: 05.03.17

Parent Sample Id: 552196-001 | MS Sample Id: 552196-001 S | MSD Sample Id: 552196-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00375	0.187	0.160	86	0.151	82	70-130	6	35	mg/kg	05.04.17 07:18	
Toluene	<0.00375	0.187	0.149	80	0.136	74	70-130	9	35	mg/kg	05.04.17 07:18	
Ethylbenzene	<0.00375	0.187	0.144	77	0.136	74	71-129	6	35	mg/kg	05.04.17 07:18	
m,p-Xylenes	<0.00749	0.375	0.280	75	0.252	68	70-135	11	35	mg/kg	05.04.17 07:18	X
o-Xylene	<0.00375	0.187	0.139	74	0.131	71	71-133	6	35	mg/kg	05.04.17 07:18	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	115		109		80-120	%	05.04.17 07:18
4-Bromofluorobenzene	113		112		80-120	%	05.04.17 07:18

QC Summary 552078

COG Operating LLC

Michalada Federal #003D

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3016595 Matrix: Soil Date Prep: 05.04.17

Parent Sample Id: 552076-014 MS Sample Id: 552076-014 S MSD Sample Id: 552076-014 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0819	81	0.0764	77	70-130	7	35	mg/kg	05.04.17 16:52	
Toluene	<0.00202	0.101	0.0843	83	0.0775	78	70-130	8	35	mg/kg	05.04.17 16:52	
Ethylbenzene	<0.00202	0.101	0.0923	91	0.0902	91	71-129	2	35	mg/kg	05.04.17 16:52	
m,p-Xylenes	<0.00403	0.202	0.178	88	0.172	86	70-135	3	35	mg/kg	05.04.17 16:52	
o-Xylene	<0.00202	0.101	0.0948	94	0.0887	89	71-133	7	35	mg/kg	05.04.17 16:52	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		104		80-120	%	05.04.17 16:52
4-Bromofluorobenzene	98		117		80-120	%	05.04.17 16:52

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

Setting the Standard since 1990

Stafford, Texas (281-240-4200)
Dallas Texas (214-902-0300)
San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

Xenco Quote #
Xenco Job # 552070

Client / Reporting Information

Company Name / Branch: COG Operating LLC
Company Address: 2407 PECOS Avenue Artesia NM 88210
Email: alieb@concho.com dneel2@concho.com rhaskell@concho.com
Phone No: 575-748-1553
Project Contact: Aaron Lieb
Samplers's Name- Aaron Lieb

Project Information

Project Name/Number: Michalada Federal #003D
Project Location: Michalada Federal
Invoice To: COG Operating LLC, Attn: Robert Mcneill, 600 W. Illinois, Midland TX 79701
PO Number:

Analytical Information

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
WI = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH	BTEX	Chloride	Field Comments
1	T1 - SURFACE	SURF	4/26/17	9:30 Am	S	1									X	X	X	
2	T1 - 1'	1		9:35 Am		1									X	X	X	
3	T1 - 2'	2		9:40 Am		1									X	X	X	
4	T1 - 3'	3		9:45 Am		1									X	X	X	
5	T1 - 4'	4		9:47 Am		1									X	X	X	
6	T1 - 6'	6		10:00 Am		1									X	X	X	
7	T1 - 8'	8		10:05 Am		1									X	X	X	
8	T1 - 10'	10		10:10 Am		1									X	X	X	
9																		
10																		

Turnaround Time (Business days)

- [ ] Same Day TAT
- [ ] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [ ] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		4-28-17 11Am	Sid Butler 11:00 A 4-28-17	2 ARCESIO	13:00 4-29-17	2
3	Relinquished by:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	On Ice ✓ Cooler Temp. 5°C Thermo. Corr. Factor

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such loses are due to circumstances beyond the control of Xenco. A minimum charge of $75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at $5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 04/28/2017 11:00:00 AM

Work Order #: 552078

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R9

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	5
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seal present on shipping container/ cooler?	**Yes**
#5 *Custody Seals intact on shipping container/ cooler?	**Yes**
#6 Custody Seals intact on sample bottles?	**N/A**
#7 *Custody Seals Signed and dated?	**N/A**
#8 *Chain of Custody present?	**Yes**
#9 Sample instructions complete on Chain of Custody?	**Yes**
#10 Any missing/extra samples?	**No**
#11 Chain of Custody signed when relinquished/ received?	**Yes**
#12 Chain of Custody agrees with sample label(s)?	**Yes**
#13 Container label(s) legible and intact?	**Yes**
#14 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#15 Samples in proper container/ bottle?	**Yes**
#16 Samples properly preserved?	**Yes**
#17 Sample container(s) intact?	**Yes**
#18 Sufficient sample amount for indicated test(s)?	**Yes**
#19 All samples received within hold time?	**Yes**
#20 Subcontract of sample(s)?	**No**
#21 VOC samples have zero headspace?	**N/A**
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**N/A**
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

Checklist completed by: Jessica Kramer
Jessica Kramer
Date: 05/01/2017

Checklist reviewed by: Brandi Ritcherson
Brandi Ritcherson
Date: 05/01/2017