SITE INFORMATION

Report Type: Work Plan 2RP-4317

General Site Information:						
Site:	**USP Fee #2**					
Company:	**COG Operating LLC**					
Section, Township and Range	**Unit D**	**Sec. 16**	**T 23S**	**R 29E**		
Lease Number:	**API No. 30-015-34438**					
County:	**Eddy County**					
GPS:	**32.298937° N**			**103.973225° W**		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From the intersection of NM 31 (Potash Mines Rd) and CR 605 (Refinery Rd), travel northeast on NM 31 for 1.20 mi, turn southeast onto lease road and continue for approximately 3.20 miles to a 4-way intersection, turn left for 1.10 mi, turn east for 0.40 mi, turn north for 1.25 mi to location along the right-of-way to the west of the lease road.					

Release Data:	
Date Released:	7/10/2017
Type Release:	Produced Water
Source of Contamination:	Flowline
Fluid Released:	15 bbls
Fluids Recovered:	0 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***	*25'-50'*
50-99 ft	10	
>100 ft.	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:	***20***	

Acceptable Soil RRAL (mg/kg)		
Benzene	***Total BTEX***	***TPH***
10	50	100

TETRA TECH

September 25, 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., USP Fee #2, Unit D, Section 16, Township 23 South, Range 29 East, Eddy County, New Mexico. 2RP-4317.

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 USP Fee #2, Unit D, Section 16, Township 23 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.298937º, W 103.973225º. 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 July 10, 2017, and released approximately fifteen (15) barrels of produced water due to a damaged flowline. None of the fluids were recovered. The release occurred along a pipeline right-of-way and is located approximately 800' northeast of a salt lake. The primary impacted area measures approximately 65' x 20'. In addition, an area measuring 200' x 5' extended west of the release point along the right-of-way. The initial C-141 Form is included in Appendix A.

Site Setting

The release occurred in an area near the salt lake, which is the Salado formation. The Salado formation consists of mainly a halite formation and small amounts of anhydrites, polyhalites, and red sandy shale. The salt lake and mining operations are located immediately west of the site. According the aerials, the salt scaring appears to extend up to the release site.

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

Groundwater

No wells are listed within Section 16 in 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 25' and 50' below surface. The 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 100 mg/kg.

Soil Assessment and Analytical Results

On August 24, 2017, COG personnel were onsite to evaluate and sample the release area. One (1) trench (T-1) was installed in the release area to a depth of 12.0' below surface. The trench was installed in the primary release area (65' x 20') and no additional trenches were installed in area west (200' x 5') due the safety concerns related to the pipeline right-of-way. Additionally, one (1) background trench (T-2 BG) was installed approximately 75' south of 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, the areas of trenches (T-1 and T-2 BG) showed benzene, total BTEX, and TPH concentrations below the laboratory reporting limit in the shallow soils. The area of trench (T-1) showed minimal chloride concentrations at 1.0' below surface that increased with depth at 2.0' of 6,030 mg/kg and showed a chloride high of 8,380 mg/kg at 4.0' below surface. The chloride concentrations then declined with depth to <5.00 mg/kg at 8.0'. The bottom trench sample showed a chloride concentration of 262 mg/kg at 12.0' below surface.

The area of the background trench (T-2 BG) showed elevated chloride concentrations in the subsurface soils that increased with depth with a chloride high of 1,450 mg/kg at 10.0' below surface. The bottom trench sample collected at 14.0' below surface showed a chloride concentration of 812 mg/kg.

Based on the location of the release in relation to the nearby salt lake, which is located approximately 800' southwest of the site, the chloride concentrations detected at trench (T-2 BG) appear to be natural to the area.

Work Plan

Prior to the excavation, two (2) additional background trenches will be installed to the north and south of the release in order to verify the background chloride concentrations. If the chloride concentrations are comparable or exceeding the concentrations detected at trench (T-1), no additional remedial actions will be performed at the site.

However, based on the additional trenching results, COG proposes to remove the chloride concentrations that are above the background concentrations in the area of trench (T-1). The area of trench (T-1) will be excavated to between 2.0' and 4.0' below surface. Once the area 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.

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.

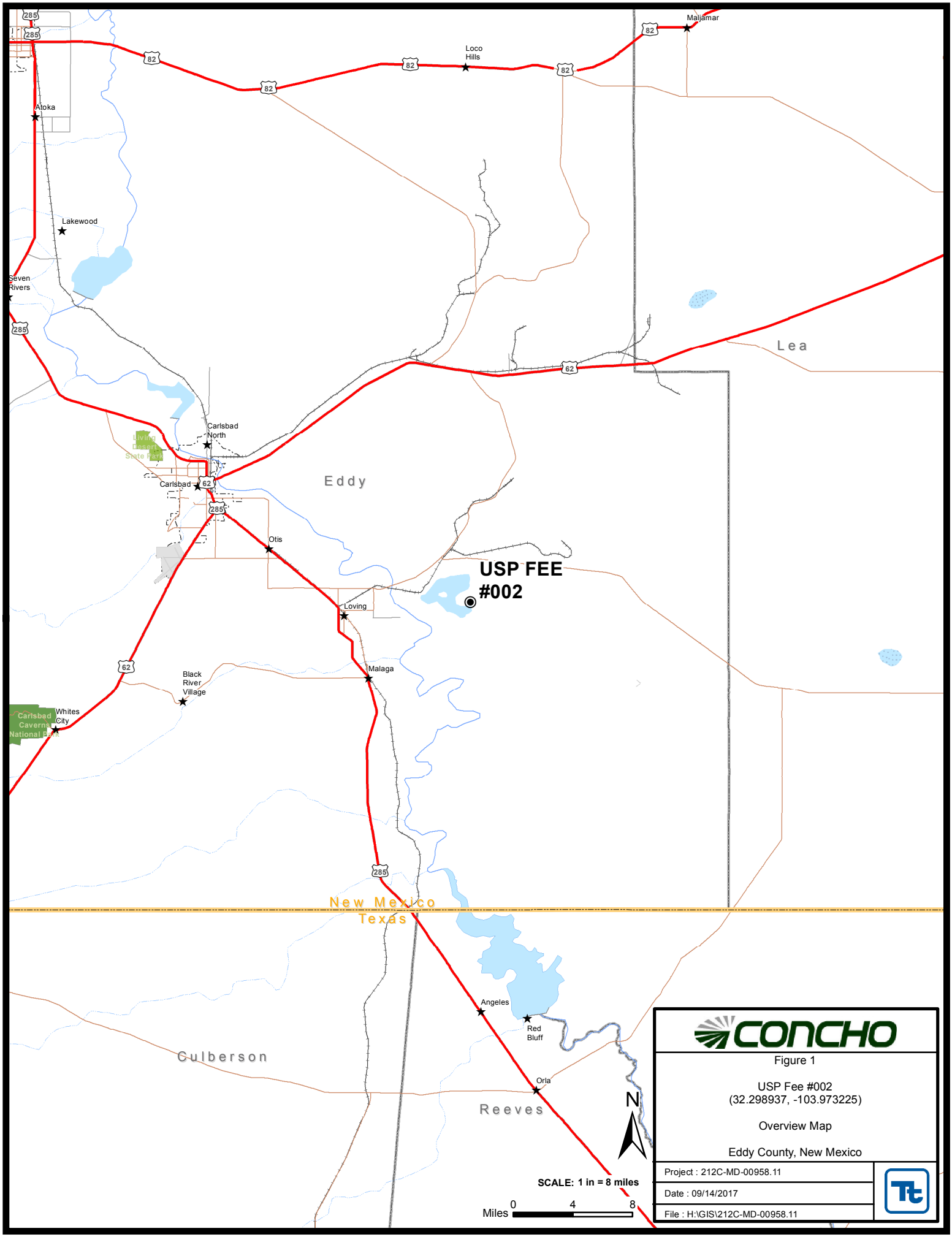
Respectfully submitted,
TETRA TECH

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



CONCHO

Figure 1

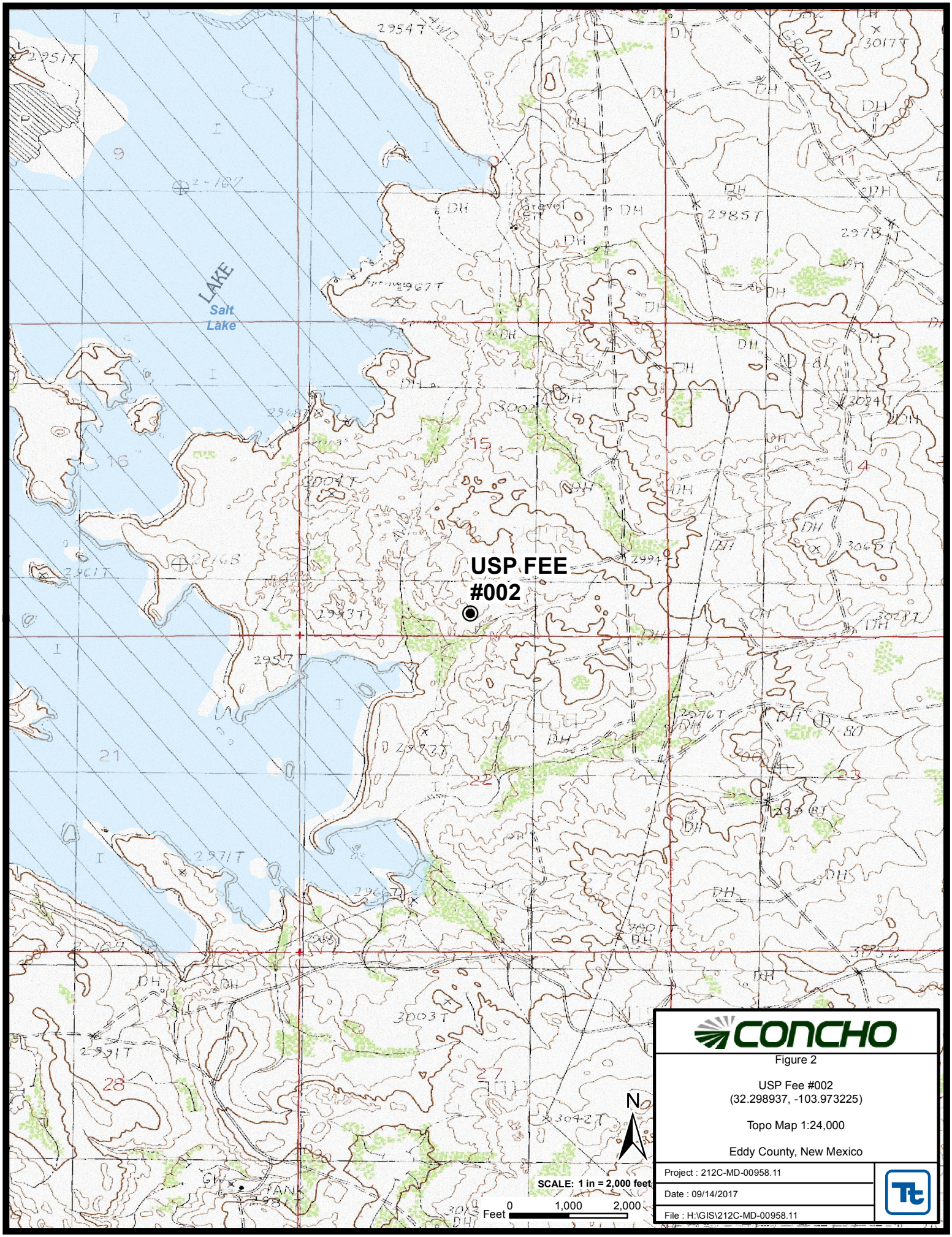
USP Fee #002
(32.298937, -103.973225)

Overview Map

Eddy County, New Mexico

Project : 212C-MD-00958.11	
Date : 09/14/2017	
File : H:\GIS\212C-MD-00958.11	

Mapped By: Isabel Marmolejo



CONCHO

Figure 2

USP Fee #002
(32.298937, -103.973225)

Topo Map 1:24,000

Eddy County, New Mexico

Project : 212C-MD-00958.11

Date : 09/14/2017

File : H:\GIS\212C-MD-00958.11

Mapped By: Isabel Marmolejo

CONCHO

Figure 3

USP Fee #002
(32.298937, -103.973225)

Spill Assessment Map

Eddy County, New Mexico

Project : 212C-MD-00958.11

Date : 09/14/2017

File : H:\GIS\212C-MD-00958.11

Mapped By: Isabel Marmolejo

CONCHO

Figure 4

USP Fee #002
(32.298937, -103.973225)

Proposed Excavation Areas & Depths Map

Eddy County, New Mexico

Project : 212C-MD-00958.11

Date : 09/14/2017

File : H:\GIS\212C-MD-00958.11

Mapped By: Isabel Marmolejo

Tables

Table 1
COG Operating LLC.
USP Fee #2
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	8/24/2017	Surface	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	41.7
	"	1	X		<15.0	<15.0	<15.0	<15.0	<0.00345	<0.00345	<0.00345	<0.00345	<0.00345	240
	"	2	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	**6030**
	"	3	X		-	-	-	-	-	-	-	-	-	**5680**
	"	4	X		-	-	-	-	-	-	-	-	-	**8380**
	"	6	X		-	-	-	-	-	-	-	-	-	**952**
	"	8	X		-	-	-	-	-	-	-	-	-	<5.00
	"	10	X		-	-	-	-	-	-	-	-	-	494
	"	12	X		-	-	-	-	-	-	-	-	-	262
T-2 BG	8/24/2017	Surface	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	9.89
	"	1	X		<14.9	<14.9	<14.9	<14.9	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<4.99
	"	2	X		<15.0	<15.0	<15.0	<15.0	<0.00345	<0.00345	<0.00345	<0.00345	<0.00345	**5.62**
	"	3	X		-	-	-	-	-	-	-	-	-	**205**
	"	4	X		-	-	-	-	-	-	-	-	-	**447**
	"	6	X		-	-	-	-	-	-	-	-	-	**1,350**
	"	8	X		-	-	-	-	-	-	-	-	-	**705**
	"	10	X		-	-	-	-	-	-	-	-	-	**1,450**
	"	12	X		-	-	-	-	-	-	-	-	-	**1,010**
	"	14	X		-	-	-	-	-	-	-	-	-	**812**

Proposed Excavation Depth

(-) Not Analyzed

Appendix A

NM OIL CONSERVATION
ARTESIA DISTRICT
JUL 17 2017
RECEIVED

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

nAB1721051816

OPERATOR

☒ Initial Report ☐ Final Report

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: USP Fee #002		Facility Type: Tank Battery	
Surface Owner: Federal	Mineral Owner: Federal		API No. 30-015-34438

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	16	23S	29E	319	North	946	West	Eddy

Latitude 32.298937 **Longitude** -103.973225

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 15 bbls	Volume Recovered: 0 bbls
Source of Release: Flowline	Date and Hour of Occurrence: July 10, 2017 10:00 AM	Date and Hour of Discovery: July 10, 2017 10:30 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 occurred from a damaged flowline. The damaged portion of the flowline was removed and replaced.

Describe Area Affected and Cleanup Action Taken.*

This release occurred in the along the road and in the pasture away from the well location. Concho will have the spill area evaluated for 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: Dakota Neel	OIL CONSERVATION DIVISION
Printed Name: Dakota Neel	Approved by Environmental Specialist: Crystal Weaver
Title: HSE Coordinator	Approval Date: 8/4/17 Expiration Date: N/A
E-mail Address: dneel2@concho.com	Conditions of Approval: See attached Attached ☐
Date: July 17, 2017 Phone: 575-746-2010	

* Attach Additional Sheets If Necessary

2RP-4317

7/31/17 AB

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - USP Fee #2H
Eddy County, New Mexico

22 South 28 East

6	5	4 131	3	2	1
7 Artesia	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30 12 10	29	28	27	26	25
31 42	32 35	33	34	35	36

22 South 29 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 30 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 256	23	24
30	29	28	27	26	25
31	32	33 155	34	35	36

23 South 28 East

6 16.5	5	4	3	2	1
7 26.5	8	9	10	11 30.5	12 20
18 63	17	16	15 14	14	13 12 33
19	20 56	21 Site	22 39	23	24 36
30	29 28.7	28 Loving	27	26	25 44
31	32	33	34	35	36

23 South 29 East

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

23 South 30 East

6 110	5	4	3	2 250	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	34 440	35	36

24 South 28 East

6 70	5 30	4 30	3	2 55	1 60
7	8 50	9	10 17	11 20	12 73
18	17 42	16 29	15 18	14 52	13 34
19	20 48	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

24 South 29 East

6	5	4	3	2	1
7 160	8	9	10	11	12
18	17 4	16 18	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

24 South 30 East

6	5	4	3	2	1
7	8 186	9	10	11	12
18	17	16	15	14	13
19 231 150	20	21	22	23 400	24
30	29	28	27	26	25
31	32	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 00571		C	ED	1	3	3	30	23S	29E	591241	3570957*	90	38	52
C 00571 CLW241602	O		ED	3	3	3	30	23S	29E	591241	3570757*	89	38	51
C 01217 S			ED	4	1	4	16	23S	29E	595413	3574403*	350		
C 01627		C	ED	1	4	4	28	23S	29E	595649	3570959*	170		
C 02182		C	ED			4	30	23S	29E	592328	3571048*	75	30	45
C 02608			ED	3	1	4	17	23S	29E	593598	3574387*	400		
C 02613			ED	4	4	2	20	23S	29E	594203	3573176*	400		
C 02704		C	ED			1	19	23S	29E	591531	3573493*	174		
C 02705		C	ED			2	17	23S	29E	593902	3575093*	68	28	40
C 02706		C	ED			4	18	23S	29E	592302	3574291*	17	10	7
C 02707		C	ED			2	28	23S	29E	595535	3571868*	40	18	22
C 02715			ED	4	1	3	15	23S	29E	596221	3574411*	400		
C 02716			ED	4	4	4	16	23S	29E	595818	3574002*	400		
C 02717			ED	4	2	4	16	23S	29E	595817	3574407*	400		
C 02718			ED	4	4	2	16	23S	29E	595816	3574812*	400		
C 02720			ED		2	1	21	23S	29E	594911	3573690*	150		
C 02721			ED		2	3	21	23S	29E	594915	3572879*	150		
C 02792			ED		4	3	04	23S	29E	594868	3577336*	200		
C 02793			ED		4	3	04	23S	29E	594868	3577336*	100		
C 02794			ED		4	3	10	23S	29E	596518	3575731*	100		
C 02795			ED		4	3	10	23S	29E	596518	3575731*	200		
C 02797			ED		2	3	22	23S	29E	596540	3572895*	200		
C 02804			ED		2	1	08	23S	29E	593262	3576905*	100		
C 02805			ED		2	1	08	23S	29E	593262	3576905*	100		
C 02806			ED		1	1	09	23S	29E	594473	3576927*	100		
C 02807			ED		1	1	09	23S	29E	594473	3576927*	100		
C 02808			ED		2	3	16	23S	29E	594909	3574501*	100		
C 02809			ED		2	3	16	23S	29E	594909	3574501*	100		
C 03057 EXPLORE			ED	4	1	1	21	23S	29E	594605	3573586*	150		
C 03058 EXPLORE			ED	4	1	1	16	23S	29E	594605	3575206*	150		
C 03059 EXPLORE			ED	4	1	3	17	23S	29E	592993	3574378*		65	
C 03587 POD1		CUB	ED	1	4	3	29	23S	29E	593338	3570754	99	44	55
C 03587 POD2		CUB	ED	1	2	4	19	23S	29E	592213	3572706	77	16	61

Average Depth to Water:	**31 feet**
Minimum Depth:	**10 feet**
Maximum Depth:	**65 feet**

Record Count: 33

PLSS Search:

Township: 23S **Range:** 29E

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

8/28/17 1:05 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER

Appendix C

Certificate of Analysis Summary 561418

COG Operating LLC, Artesia, NM

Project Name: USP Fee #2H

Project Id:
Contact: Aaron Lieb
Project Location: USP Fee #2H

Date Received in Lab: Sat Aug-26-17 02:00 pm
Report Date: 11-SEP-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	561418-001		561418-002		561418-003		561418-004		561418-005		561418-006	
	Field Id:	T2 BG		T2 BG		T2 BG		T2 BG		T2 BG		T2 BG	
	Depth:			1- ft		2- ft		3- ft		4- ft		6- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-24-17 12:00		Aug-24-17 12:00		Aug-24-17 12:00		Aug-24-17 12:00		Aug-24-17 12:00		Aug-24-17 12:00	
BTEX by EPA 8021B	***Extracted:***	Aug-30-17 16:50		Aug-30-17 16:50		Aug-31-17 16:40							
	Analyzed:	Aug-31-17 10:59		Aug-31-17 14:08		Sep-01-17 03:58							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Benzene		<0.00201	0.00201	<0.00202	0.00202	<0.00345	0.00345						
Toluene		<0.00201	0.00201	<0.00202	0.00202	<0.00345	0.00345						
Ethylbenzene		<0.00201	0.00201	<0.00202	0.00202	<0.00345	0.00345						
m,p-Xylenes		<0.00402	0.00402	<0.00404	0.00404	<0.00690	0.00690						
o-Xylene		<0.00201	0.00201	<0.00202	0.00202	<0.00345	0.00345						
Total Xylenes		<0.00201	0.00201	<0.00202	0.00202	<0.00345	0.00345						
Total BTEX		<0.00201	0.00201	<0.00202	0.00202	<0.00345	0.00345						
Inorganic Anions by EPA 300/300.1	***Extracted:***	Sep-06-17 15:25		Sep-06-17 15:25		Sep-06-17 15:25		Sep-06-17 15:25		Sep-06-17 15:25		Sep-06-17 15:25	
	Analyzed:	Sep-06-17 22:47		Sep-06-17 22:56		Sep-06-17 23:04		Sep-06-17 23:28		Sep-06-17 23:37		Sep-07-17 00:01	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		9.89	4.94	<4.99	4.99	5.62	4.94	205	4.90	447	5.00	1350	25.0
TPH By SW8015 Mod	***Extracted:***	Aug-29-17 16:00		Aug-29-17 16:00		Aug-29-17 16:00							
	Analyzed:	Aug-30-17 01:13		Aug-30-17 01:35		Aug-30-17 01:56							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0						
Diesel Range Organics (DRO)		<15.0	15.0	<14.9	14.9	<15.0	15.0						
Oil Range Hydrocarbons (ORO)		<15.0	15.0	<14.9	14.9	<15.0	15.0						
Total TPH		<15.0	15.0	<14.9	14.9	<15.0	15.0						

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 561418

COG Operating LLC, Artesia, NM

Project Name: USP Fee #2H

Project Id:
Contact: Aaron Lieb
Project Location: USP Fee #2H

Date Received in Lab: Sat Aug-26-17 02:00 pm
Report Date: 11-SEP-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	561418-007		561418-008		561418-009		561418-010					
	Field Id:	T2 BG		T2 BG		T2 BG		T2 BG					
	Depth:	8- ft		10- ft		12- ft		14- ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Aug-24-17 12:00		Aug-24-17 12:00		Aug-24-17 12:00		Aug-24-17 12:00					
Inorganic Anions by EPA 300/300.1	***Extracted:***	Sep-06-17 15:25		Sep-06-17 15:25		Sep-06-17 15:25		Sep-06-17 15:25					
	Analyzed:	Sep-07-17 00:09		Sep-07-17 00:17		Sep-07-17 00:26		Sep-07-17 00:34					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		705	49.3	1450	24.6	1010	24.5	812	49.8				

Kelsey Brooks
Project Manager

Analytical Report 561418

for

COG Operating LLC

Project Manager: Aaron Lieb

USP Fee #2H

11-SEP-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)

11-SEP-17

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

Reference: XENCO Report No(s): **561418**
USP Fee #2H
Project Address: USP Fee #2H

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) 561418. 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. 561418 will be filed for 45 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,

Kelsey Brooks
Project Manager

Sample Cross Reference 561418

COG Operating LLC, Artesia, NM

USP Fee #2H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T2 BG	S	08-24-17 12:00		561418-001
T2 BG	S	08-24-17 12:00	1 ft	561418-002
T2 BG	S	08-24-17 12:00	2 ft	561418-003
T2 BG	S	08-24-17 12:00	3 ft	561418-004
T2 BG	S	08-24-17 12:00	4 ft	561418-005
T2 BG	S	08-24-17 12:00	6 ft	561418-006
T2 BG	S	08-24-17 12:00	8 ft	561418-007
T2 BG	S	08-24-17 12:00	10 ft	561418-008
T2 BG	S	08-24-17 12:00	12 ft	561418-009
T2 BG	S	08-24-17 12:00	14 ft	561418-010

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3026349 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3026428 BTEX by EPA 8021B
Lab Sample ID 561418-003 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 561418-003.
The Laboratory Control Sample for Toluene, Benzene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3026948 Inorganic Anions by EPA 300/300.1
Lab Sample ID 561418-003 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 561418-001, -002, -003, -004, -005, -006, -007, -008, -009, -010.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analytical Results 561418

COG Operating LLC, Artesia, NM

USP Fee #2H

Sample Id:	**T2 BG**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561418-001	Date Collected:	08.24.17 12.00		

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	09.06.17 15.25	Basis:	Wet Weight
Seq Number:	3026948				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**9.89**	4.94	mg/kg	09.06.17 22.47		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	08.29.17 16.00	Basis:	Wet Weight
Seq Number:	3026605				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.30.17 01.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.30.17 01.13	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.30.17 01.13	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.30.17 01.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	08.30.17 01.13	
o-Terphenyl	84-15-1	111	%	70-135	08.30.17 01.13	

Certificate of Analytical Results 561418

COG Operating LLC, Artesia, NM

USP Fee #2H

Sample Id:	**T2 BG**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561418-001	Date Collected:	08.24.17 12.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	08.30.17 16.50	Basis:	Wet Weight
Seq Number:	3026349				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	08.31.17 10.59	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	08.31.17 10.59	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	08.31.17 10.59	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	08.31.17 10.59	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	08.31.17 10.59	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	08.31.17 10.59	U	1
Total BTEX		<0.00201	0.00201	mg/kg	08.31.17 10.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	85	%	80-120	08.31.17 10.59	
1,4-Difluorobenzene	540-36-3	93	%	80-120	08.31.17 10.59	

Certificate of Analytical Results 561418

COG Operating LLC, Artesia, NM

USP Fee #2H

Sample Id:	**T2 BG**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561418-002	Date Collected:	08.24.17 12.00	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	09.06.17 15.25	Basis:	Wet Weight
Seq Number:	3026948				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.99	4.99	mg/kg	09.06.17 22.56	U	1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	08.29.17 16.00	Basis:	Wet Weight
Seq Number:	3026605				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	08.30.17 01.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9	mg/kg	08.30.17 01.35	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<14.9	14.9	mg/kg	08.30.17 01.35	U	1
Total TPH	PHC635	<14.9	14.9	mg/kg	08.30.17 01.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	08.30.17 01.35	
o-Terphenyl	84-15-1	95	%	70-135	08.30.17 01.35	

Certificate of Analytical Results 561418

COG Operating LLC, Artesia, NM

USP Fee #2H

Sample Id:	**T2 BG**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561418-002	Date Collected:	08.24.17 12.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	08.30.17 16.50	Basis:	Wet Weight
Seq Number:	3026349				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	08.31.17 14.08	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	08.31.17 14.08	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	08.31.17 14.08	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	08.31.17 14.08	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	08.31.17 14.08	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	08.31.17 14.08	U	1
Total BTEX		<0.00202	0.00202	mg/kg	08.31.17 14.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	84	%	80-120	08.31.17 14.08	
1,4-Difluorobenzene	540-36-3	94	%	80-120	08.31.17 14.08	

Certificate of Analytical Results 561418

COG Operating LLC, Artesia, NM

USP Fee #2H

Sample Id:	**T2 BG**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561418-003	Date Collected:	08.24.17 12.00	Sample Depth:	2 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	09.06.17 15.25	Basis:	Wet Weight
Seq Number:	3026948				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5.62**	4.94	mg/kg	09.06.17 23.04		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	08.29.17 16.00	Basis:	Wet Weight
Seq Number:	3026605				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.30.17 01.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.30.17 01.56	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.30.17 01.56	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.30.17 01.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	08.30.17 01.56	
o-Terphenyl	84-15-1	101	%	70-135	08.30.17 01.56	

Certificate of Analytical Results 561418

COG Operating LLC, Artesia, NM

USP Fee #2H

Sample Id:	**T2 BG**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561418-003	Date Collected:	08.24.17 12.00	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	08.31.17 16.40	Basis:	Wet Weight
Seq Number:	3026428				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00345	0.00345	mg/kg	09.01.17 03.58	U	1
Toluene	108-88-3	<0.00345	0.00345	mg/kg	09.01.17 03.58	U	1
Ethylbenzene	100-41-4	<0.00345	0.00345	mg/kg	09.01.17 03.58	U	1
m,p-Xylenes	179601-23-1	<0.00690	0.00690	mg/kg	09.01.17 03.58	U	1
o-Xylene	95-47-6	<0.00345	0.00345	mg/kg	09.01.17 03.58	U	1
Total Xylenes	1330-20-7	<0.00345	0.00345	mg/kg	09.01.17 03.58	U	1
Total BTEX		<0.00345	0.00345	mg/kg	09.01.17 03.58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	86	%	80-120	09.01.17 03.58	
4-Bromofluorobenzene	460-00-4	87	%	80-120	09.01.17 03.58	

Certificate of Analytical Results 561418

COG Operating LLC, Artesia, NM

USP Fee #2H

Sample Id:	**T2 BG**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561418-004	Date Collected:	08.24.17 12.00	Sample Depth:	3 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	09.06.17 15.25	Basis:	Wet Weight
Seq Number:	3026948				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**205**	4.90	mg/kg	09.06.17 23.28		1

Certificate of Analytical Results 561418

COG Operating LLC, Artesia, NM

USP Fee #2H

Sample Id:	**T2 BG**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561418-005	Date Collected:	08.24.17 12.00	Sample Depth:	4 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	09.06.17 15.25	Basis:	Wet Weight
Seq Number:	3026948				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**447**	5.00	mg/kg	09.06.17 23.37		1

Certificate of Analytical Results 561418

COG Operating LLC, Artesia, NM

USP Fee #2H

Sample Id:	**T2 BG**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561418-006	Date Collected:	08.24.17 12.00	Sample Depth:	6 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	09.06.17 15.25	Basis:	Wet Weight
Seq Number:	3026948				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1350**	25.0	mg/kg	09.07.17 00.01		5

Certificate of Analytical Results 561418

COG Operating LLC, Artesia, NM

USP Fee #2H

Sample Id:	**T2 BG**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561418-007	Date Collected:	08.24.17 12.00	Sample Depth:	8 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	09.06.17 15.25	Basis:	Wet Weight
Seq Number:	3026948				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**705**	49.3	mg/kg	09.07.17 00.09		10

Certificate of Analytical Results 561418

COG Operating LLC, Artesia, NM

USP Fee #2H

Sample Id:	**T2 BG**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561418-008	Date Collected:	08.24.17 12.00	Sample Depth:	10 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	09.06.17 15.25	Basis:	Wet Weight
Seq Number:	3026948				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1450**	24.6	mg/kg	09.07.17 00.17		5

Certificate of Analytical Results 561418

COG Operating LLC, Artesia, NM

USP Fee #2H

Sample Id:	**T2 BG**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561418-009	Date Collected:	08.24.17 12.00	Sample Depth:	12 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	09.06.17 15.25	Basis:	Wet Weight
Seq Number:	3026948				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1010**	24.5	mg/kg	09.07.17 00.26		5

Certificate of Analytical Results 561418

COG Operating LLC, Artesia, NM

USP Fee #2H

Sample Id:	**T2 BG**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561418-010	Date Collected:	08.24.17 12.00	Sample Depth:	14 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	09.06.17 15.25	Basis:	Wet Weight
Seq Number:	3026948				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**812**	49.8	mg/kg	09.07.17 00.34		10

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 561418

COG Operating LLC

USP Fee #2H

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3026948 Matrix: Solid Date Prep: 09.06.17
MB Sample Id: 730456-1-BLK LCS Sample Id: 730456-1-BKS LCSD Sample Id: 730456-1-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	264	106	264	106	90-110	0	20	mg/kg	09.06.17 10:18	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3026948 Matrix: Soil Date Prep: 09.06.17
Parent Sample Id: 561417-001 MS Sample Id: 561417-001 S MSD Sample Id: 561417-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	77.8	248	355	112	354	111	90-110	0	20	mg/kg	09.06.17 21:17	X

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3026948 Matrix: Soil Date Prep: 09.06.17
Parent Sample Id: 561418-003 MS Sample Id: 561418-003 S MSD Sample Id: 561418-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5.62	247	292	116	293	116	90-110	0	20	mg/kg	09.06.17 23:12	X

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3026605 Matrix: Solid Date Prep: 08.29.17
MB Sample Id: 730143-1-BLK LCS Sample Id: 730143-1-BKS LCSD Sample Id: 730143-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	904	90	851	85	70-135	6	35	mg/kg	09.05.17 09:32	
Diesel Range Organics (DRO)	<15.0	1000	1140	114	1030	103	70-135	10	35	mg/kg	09.05.17 09:32	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		120		97		70-135	%	09.05.17 09:32
o-Terphenyl	109		108		100		70-135	%	09.05.17 09:32

QC Summary 561418

COG Operating LLC

USP Fee #2H

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3026605 Matrix: Soil Date Prep: 08.29.17
Parent Sample Id: 561417-006 MS Sample Id: 561417-006 S MSD Sample Id: 561417-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	889	89	886	89	70-135	0	35	mg/kg	09.05.17 09:32	
Diesel Range Organics (DRO)	<15.0	999	1100	110	1100	110	70-135	0	35	mg/kg	09.05.17 09:32	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		117		70-135	%	09.05.17 09:32
o-Terphenyl	103		107		70-135	%	09.05.17 09:32

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3026349 Matrix: Solid Date Prep: 08.30.17
MB Sample Id: 730163-1-BLK LCS Sample Id: 730163-1-BKS LCSD Sample Id: 730163-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.116	116	0.114	114	70-130	2	35	mg/kg	08.30.17 10:00	
Toluene	<0.00200	0.0998	0.114	114	0.112	112	70-130	2	35	mg/kg	08.30.17 10:00	
Ethylbenzene	<0.00200	0.0998	0.115	115	0.113	113	71-129	2	35	mg/kg	08.30.17 10:00	
m,p-Xylenes	<0.00399	0.200	0.225	113	0.221	110	70-135	2	35	mg/kg	08.30.17 10:00	
o-Xylene	<0.00200	0.0998	0.109	109	0.107	107	71-133	2	35	mg/kg	08.30.17 10:00	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		91		84		80-120	%	08.30.17 10:00
4-Bromofluorobenzene	84		87		80		80-120	%	08.30.17 10:00

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3026428 Matrix: Solid Date Prep: 08.31.17
MB Sample Id: 730213-1-BLK LCS Sample Id: 730213-1-BKS LCSD Sample Id: 730213-1-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	0.115	115	0.110	110	70-130	4	35	mg/kg	09.01.17 02:04	
Toluene	<0.00201	0.100	0.115	115	0.108	108	70-130	6	35	mg/kg	09.01.17 02:04	
Ethylbenzene	<0.00201	0.100	0.117	117	0.110	110	71-129	6	35	mg/kg	09.01.17 02:04	
m,p-Xylenes	<0.00402	0.201	0.227	113	0.213	107	70-135	6	35	mg/kg	09.01.17 02:04	
o-Xylene	<0.00201	0.100	0.111	111	0.105	105	71-133	6	35	mg/kg	09.01.17 02:04	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	82		93		93		80-120	%	09.01.17 02:04
4-Bromofluorobenzene	86		110		104		80-120	%	09.01.17 02:04

QC Summary 561418

COG Operating LLC

USP Fee #2H

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

Seq Number: 3026349 Matrix: Soil Date Prep: 08.30.17

Parent Sample Id: 561417-003 MS Sample Id: 561417-003 S MSD Sample Id: 561417-003 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	0.0991	98	0.0908	91	70-130	9	35	mg/kg	08.30.17 20:43	
Toluene	<0.00202	0.101	0.0940	93	0.0842	84	70-130	11	35	mg/kg	08.30.17 20:43	
Ethylbenzene	<0.00202	0.101	0.0858	85	0.0740	74	71-129	15	35	mg/kg	08.30.17 20:43	
m,p-Xylenes	<0.00404	0.202	0.166	82	0.142	71	70-135	16	35	mg/kg	08.30.17 20:43	
o-Xylene	<0.00202	0.101	0.0831	82	0.0719	72	71-133	14	35	mg/kg	08.30.17 20:43	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		102		80-120	%	08.30.17 20:43
4-Bromofluorobenzene	93		98		80-120	%	08.30.17 20:43

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

Seq Number: 3026428 Matrix: Soil Date Prep: 08.31.17

Parent Sample Id: 561418-003 MS Sample Id: 561418-003 S MSD Sample Id: 561418-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00353	0.177	0.0453	26	0.0419	24	70-130	8	35	mg/kg	09.01.17 02:42	X
Toluene	<0.00353	0.177	0.0705	40	0.0647	37	70-130	9	35	mg/kg	09.01.17 02:42	X
Ethylbenzene	<0.00353	0.177	0.101	57	0.0940	54	71-129	7	35	mg/kg	09.01.17 02:42	X
m,p-Xylenes	<0.00707	0.353	0.202	57	0.187	54	70-135	8	35	mg/kg	09.01.17 02:42	X
o-Xylene	<0.00353	0.177	0.116	66	0.109	63	71-133	6	35	mg/kg	09.01.17 02:42	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		92		80-120	%	09.01.17 02:42
4-Bromofluorobenzene	107		91		80-120	%	09.01.17 02:42

CHAIN OF CUSTODY

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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 # 561418

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: USP Fee #2H
Project Location: USP Fee #2H
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	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH/ EXTENDED	BTEX	Chloride								Field Comments
1	TZ BG	SURF	8-24-17	12:00PM											X	X	X								
2	TZ BG	1'													X	X	X								
3	TZ BG	2'													X	X	X								
4	TZ BG	3'															X								
5	TZ BG	4'															X								
6	TZ BG	6'															X								
7	TZ BG	8'															X								
8	TZ BG	10'															X								
9	TZ BG	12'															X								
10	TZ BG	14'	↓	↓													X								

Final 1.000

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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			1	2		2
3	Relinquished by: [signature]	Date Time: 8-25-17 13:01	Received By: 3 Sid Butler 8-25-17 1230p	Relinquished By: 4 Sid Butler 8-25-17 2:45p	Date Time:	Received By: 4
5	Relinquished by: ARCESIO	Date Time: 8-26-17 14:00	Received By: 5	Custody Seal #	Preserved where applicable ☐	On Ice ✓ Cooler Temp. 8.6° 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.

CHAIN OF CUSTODY

Page 2 / Of 2

XENCO LABORATORIES

Setting the Standard since 1990

Stafford,Texas (281-240-4200) | San Antonio, Texas (210-509-3334) | Phoenix, Arizona (480-355-0900)

Dallas Texas (214-902-0300) | Midland, Texas (432-704-5251)

www.xenco.com

Xenco Quote # | Xenco Job # 561418

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: USP Fee #2H

Project Location: USP Fee #2H

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	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH/ EXTENDED	BTEX	Chloride	Field Comments
1	TZ BG	SURF	8-24-17	12:00PM											X	X	X	
2	TZ BG	1'													X	X	X	
3	TZ BG	2'													X	X	X	
4	TZ BG	3'															X	
5	TZ BG	4'															X	
6	TZ BG	6'															X	
7	TZ BG	8'															X	
8	TZ BG	10'															X	
9	TZ BG	12'															X	
10	TZ BG	14'	↓	↓													X	

Final 1.000

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Turnaround Time (Business days) | Data Deliverable Information | Notes

- ☐ Same Day TAT
- ☐ 5 Day TAT
- ☐ Next Day EMERGENCY
- ☐ 7 Day TAT
- ☐ 2 Day EMERGENCY
- ☐ Contract TAT
- ☐ 3 Day EMERGENCY
- ☐ 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

Temp: 2.8 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 2.6

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

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						
2						
3		8-25-17 1330	Sid Butler 8-25-17 1230p	Sid Butler 8-25-17 2:45p		
4						
5	ARCESIO	8-26-17 14:00				

Custody Seal # | Preserved where applicable | On Ice ✓ | Cooler Temp. 8.6° | Thermo. Corr. Factor

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 08/26/2017 02:00:00 PM

Work Order #: 561418

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

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.6
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seal present on shipping container/ cooler?	**N/A**
#5 *Custody Seals intact on shipping container/ cooler?	**N/A**
#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**

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

Analyst:

PH Device/Lot#:

Checklist completed by: Shawnee Smith Date: 08/29/2017

Shawnee Smith

Checklist reviewed by: Kelsey Brooks Date: 08/29/2017

Kelsey Brooks

Certificate of Analysis Summary 561430

COG Operating LLC, Artesia, NM

Project Name: USP FEE #2 H

Project Id:
Contact: Aaron Lieb
Project Location: USP Fee #2 H

Date Received in Lab: Sat Aug-26-17 02:00 pm
Report Date: 11-SEP-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	561430-001		561430-002		561430-003		561430-004		561430-005		561430-006	
	Field Id:	T1		T1		T1		T1		T1		T1	
	Depth:			1- ft		2- ft		3- ft		4- ft		6- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-24-17 10:00		Aug-24-17 10:00		Aug-24-17 10:00		Aug-24-17 10:00		Aug-24-17 10:00		Aug-24-17 10:00	
BTEX by EPA 8021B	***Extracted:***	Sep-05-17 08:30		Sep-06-17 08:00		Sep-05-17 08:30							
	Analyzed:	Sep-05-17 16:23		Sep-06-17 10:50		Sep-05-17 16:23							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Benzene		<0.00199	0.00199	<0.00345	0.00345	<0.00201	0.00201						
Toluene		<0.00199	0.00199	<0.00345	0.00345	<0.00201	0.00201						
Ethylbenzene		<0.00199	0.00199	<0.00345	0.00345	<0.00201	0.00201						
m,p-Xylenes		<0.00398	0.00398	<0.00690	0.00690	<0.00402	0.00402						
o-Xylene		<0.00199	0.00199	<0.00345	0.00345	<0.00201	0.00201						
Total Xylenes		<0.00199	0.00199	<0.00345	0.00345	<0.00201	0.00201						
Total BTEX		<0.00199	0.00199	<0.00345	0.00345	<0.00201	0.00201						
Inorganic Anions by EPA 300/300.1	***Extracted:***	Sep-06-17 11:05		Sep-06-17 11:05		Sep-06-17 11:05		Sep-06-17 11:05		Sep-06-17 11:05		Sep-06-17 11:05	
	Analyzed:	Sep-06-17 12:06		Sep-06-17 12:21		Sep-06-17 12:14		Sep-06-17 12:44		Sep-06-17 12:52		Sep-06-17 13:15	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		41.7	4.92	240	4.97	6030	49.4	5680	49.6	8380	50.1	952	5.00
TPH By SW8015 Mod	***Extracted:***	Aug-29-17 16:00		Aug-29-17 16:00		Aug-29-17 16:00							
	Analyzed:	Aug-30-17 06:29		Aug-30-17 06:50		Aug-30-17 07:11							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0						
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0						
Oil Range Hydrocarbons (ORO)		<15.0	15.0	<15.0	15.0	<15.0	15.0						
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0						

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 561430

COG Operating LLC, Artesia, NM

Project Name: USP FEE #2 H

Project Id:
Contact: Aaron Lieb
Project Location: USP Fee #2 H

Date Received in Lab: Sat Aug-26-17 02:00 pm
Report Date: 11-SEP-17
Project Manager: Kelsey Brooks

Analysis Requested											
	Lab Id:	561430-007		561430-008		561430-009					
	Field Id:	T1		T1		T1					
	Depth:	8- ft		12- ft		12- ft					
	Matrix:	SOIL		SOIL		SOIL					
	Sampled:	Aug-24-17 10:00		Aug-24-17 10:00		Aug-24-17 10:00					
Inorganic Anions by EPA 300/300.1	***Extracted:***	Sep-06-17 11:05		Sep-06-17 15:25		Sep-06-17 15:25					
	Analyzed:	Sep-06-17 13:23		Sep-07-17 00:42		Sep-07-17 00:50					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		<5.00	5.00	494	4.97	262	4.99				

Kelsey Brooks
Project Manager

Analytical Report 561430

for

COG Operating LLC

Project Manager: Aaron Lieb

USP FEE #2 H

11-SEP-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)

11-SEP-17

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

Reference: XENCO Report No(s): **561430**
USP FEE #2 H
Project Address: USP Fee #2 H

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) 561430. 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. 561430 will be filed for 45 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,

Kelsey Brooks
Project Manager

Sample Cross Reference 561430

COG Operating LLC, Artesia, NM

USP FEE #2 H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
T1	S	08-24-17 10:00		561430-001
T1	S	08-24-17 10:00	1 ft	561430-002
T1	S	08-24-17 10:00	2 ft	561430-003
T1	S	08-24-17 10:00	3 ft	561430-004
T1	S	08-24-17 10:00	4 ft	561430-005
T1	S	08-24-17 10:00	6 ft	561430-006
T1	S	08-24-17 10:00	8 ft	561430-007
T1	S	08-24-17 10:00	12 ft	561430-008
T1	S	08-24-17 10:00	12 ft	561430-009

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3026700 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3026877 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results 561430

COG Operating LLC, Artesia, NM

USP FEE #2 H

Sample Id:	**T1**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561430-001	Date Collected:	08.24.17 10.00		

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	09.06.17 11.05	Basis:	Wet Weight
Seq Number:	3027144				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**41.7**	4.92	mg/kg	09.06.17 12.06		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	08.29.17 16.00	Basis:	Wet Weight
Seq Number:	3026605				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.30.17 06.29	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.30.17 06.29	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.30.17 06.29	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.30.17 06.29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	08.30.17 06.29	
o-Terphenyl	84-15-1	95	%	70-135	08.30.17 06.29	

Certificate of Analytical Results 561430

COG Operating LLC, Artesia, NM

USP FEE #2 H

Sample Id:	**T1**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561430-001	Date Collected:	08.24.17 10.00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.05.17 08.30	Basis:	Wet Weight
Seq Number:	3026700				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	09.05.17 16.23	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	09.05.17 16.23	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	09.05.17 16.23	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	09.05.17 16.23	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	09.05.17 16.23	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	09.05.17 16.23	U	1
Total BTEX		<0.00199	0.00199	mg/kg	09.05.17 16.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	91	%	80-120	09.05.17 16.23	
4-Bromofluorobenzene	460-00-4	102	%	80-120	09.05.17 16.23	

Certificate of Analytical Results 561430

COG Operating LLC, Artesia, NM

USP FEE #2 H

Sample Id:	**T1**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561430-002	Date Collected:	08.24.17 10.00	Sample Depth:	1 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	09.06.17 11.05	Basis:	Wet Weight
Seq Number:	3027144				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**240**	4.97	mg/kg	09.06.17 12.21		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	08.29.17 16.00	Basis:	Wet Weight
Seq Number:	3026605				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.30.17 06.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.30.17 06.50	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.30.17 06.50	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.30.17 06.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	08.30.17 06.50	
o-Terphenyl	84-15-1	107	%	70-135	08.30.17 06.50	

Certificate of Analytical Results 561430

COG Operating LLC, Artesia, NM

USP FEE #2 H

Sample Id:	**T1**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561430-002	Date Collected:	08.24.17 10.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.06.17 08.00	Basis:	Wet Weight
Seq Number:	3026877				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00345	0.00345	mg/kg	09.06.17 10.50	U	1
Toluene	108-88-3	<0.00345	0.00345	mg/kg	09.06.17 10.50	U	1
Ethylbenzene	100-41-4	<0.00345	0.00345	mg/kg	09.06.17 10.50	U	1
m,p-Xylenes	179601-23-1	<0.00690	0.00690	mg/kg	09.06.17 10.50	U	1
o-Xylene	95-47-6	<0.00345	0.00345	mg/kg	09.06.17 10.50	U	1
Total Xylenes	1330-20-7	<0.00345	0.00345	mg/kg	09.06.17 10.50	U	1
Total BTEX		<0.00345	0.00345	mg/kg	09.06.17 10.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	104	%	80-120	09.06.17 10.50	
1,4-Difluorobenzene	540-36-3	91	%	80-120	09.06.17 10.50	

Certificate of Analytical Results 561430

COG Operating LLC, Artesia, NM

USP FEE #2 H

Sample Id:	**T1**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561430-003	Date Collected:	08.24.17 10.00	Sample Depth:	2 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	09.06.17 11.05	Basis:	Wet Weight
Seq Number:	3027144				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**6030**	49.4	mg/kg	09.06.17 12.14		10

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	08.29.17 16.00	Basis:	Wet Weight
Seq Number:	3026605				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	08.30.17 07.11	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	08.30.17 07.11	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	08.30.17 07.11	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	08.30.17 07.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	08.30.17 07.11	
o-Terphenyl	84-15-1	106	%	70-135	08.30.17 07.11	

Certificate of Analytical Results 561430

COG Operating LLC, Artesia, NM

USP FEE #2 H

Sample Id:	**T1**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561430-003	Date Collected:	08.24.17 10.00	Sample Depth:	2 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	09.05.17 08.30	Basis:	Wet Weight
Seq Number:	3026700				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	09.05.17 16.23	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	09.05.17 16.23	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	09.05.17 16.23	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	09.05.17 16.23	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	09.05.17 16.23	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	09.05.17 16.23	U	1
Total BTEX		<0.00201	0.00201	mg/kg	09.05.17 16.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	91	%	80-120	09.05.17 16.23	
4-Bromofluorobenzene	460-00-4	87	%	80-120	09.05.17 16.23	

Certificate of Analytical Results 561430

COG Operating LLC, Artesia, NM

USP FEE #2 H

Sample Id:	**T1**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561430-004	Date Collected:	08.24.17 10.00	Sample Depth:	3 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	09.06.17 11.05	Basis:	Wet Weight
Seq Number:	3027144				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**5680**	49.6	mg/kg	09.06.17 12.44		10

Certificate of Analytical Results 561430

COG Operating LLC, Artesia, NM

USP FEE #2 H

Sample Id:	**T1**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561430-005	Date Collected:	08.24.17 10.00	Sample Depth:	4 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	09.06.17 11.05	Basis:	Wet Weight
Seq Number:	3027144				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**8380**	50.1	mg/kg	09.06.17 12.52		10

Certificate of Analytical Results 561430

COG Operating LLC, Artesia, NM

USP FEE #2 H

Sample Id:	**T1**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561430-006	Date Collected:	08.24.17 10.00	Sample Depth:	6 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	09.06.17 11.05	Basis:	Wet Weight
Seq Number:	3027144				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**952**	5.00	mg/kg	09.06.17 13.15		1

Certificate of Analytical Results 561430

COG Operating LLC, Artesia, NM

USP FEE #2 H

Sample Id:	**T1**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561430-007	Date Collected:	08.24.17 10.00	Sample Depth:	8 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	09.06.17 11.05	Basis:	Wet Weight
Seq Number:	3027144				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	09.06.17 13.23	U	1

Certificate of Analytical Results 561430

COG Operating LLC, Artesia, NM

USP FEE #2 H

Sample Id:	**T1**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561430-008	Date Collected:	08.24.17 10.00	Sample Depth:	12 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	09.06.17 15.25	Basis:	Wet Weight
Seq Number:	3026948				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**494**	4.97	mg/kg	09.07.17 00.42		1

Certificate of Analytical Results 561430

COG Operating LLC, Artesia, NM

USP FEE #2 H

Sample Id:	**T1**	Matrix:	Soil	Date Received:	08.26.17 14.00
Lab Sample Id:	561430-009	Date Collected:	08.24.17 10.00	Sample Depth:	12 ft
Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	09.06.17 15.25	Basis:	Wet Weight
Seq Number:	3026948				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**262**	4.99	mg/kg	09.07.17 00.50		1

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

COG Operating LLC

USP FEE #2 H

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3027144 Matrix: Solid Date Prep: 09.06.17
MB Sample Id: 730453-1-BLK LCS Sample Id: 730453-1-BKS LCSD Sample Id: 730453-1-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	264	106	264	106	90-110	0	20	mg/kg	09.06.17 10:18	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3026948 Matrix: Solid Date Prep: 09.06.17
MB Sample Id: 730456-1-BLK LCS Sample Id: 730456-1-BKS LCSD Sample Id: 730456-1-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	264	106	264	106	90-110	0	20	mg/kg	09.06.17 10:18	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3027144 Matrix: Soil Date Prep: 09.06.17
Parent Sample Id: 561430-002 MS Sample Id: 561430-002 S MSD Sample Id: 561430-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	240	249	489	100	499	104	90-110	2	20	mg/kg	09.06.17 12:29	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3027144 Matrix: Soil Date Prep: 09.06.17
Parent Sample Id: 561470-001 MS Sample Id: 561470-001 S MSD Sample Id: 561470-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	30.9	100	140	109	135	104	90-110	4	20	mg/kg	09.06.17 10:41	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3026948 Matrix: Soil Date Prep: 09.06.17
Parent Sample Id: 561417-001 MS Sample Id: 561417-001 S MSD Sample Id: 561417-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	77.8	248	355	112	354	111	90-110	0	20	mg/kg	09.06.17 21:17	X

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3026948 Matrix: Soil Date Prep: 09.06.17
Parent Sample Id: 561418-003 MS Sample Id: 561418-003 S MSD Sample Id: 561418-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5.62	247	292	116	293	116	90-110	0	20	mg/kg	09.06.17 23:12	X

QC Summary 561430

COG Operating LLC

USP FEE #2 H

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3026605 Matrix: Solid Date Prep: 08.29.17
MB Sample Id: 730143-1-BLK LCS Sample Id: 730143-1-BKS LCSD Sample Id: 730143-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	904	90	851	85	70-135	6	35	mg/kg	09.05.17 09:32	
Diesel Range Organics (DRO)	<15.0	1000	1140	114	1030	103	70-135	10	35	mg/kg	09.05.17 09:32	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		120		97		70-135	%	09.05.17 09:32
o-Terphenyl	109		108		100		70-135	%	09.05.17 09:32

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3026605 Matrix: Soil Date Prep: 08.29.17
Parent Sample Id: 561417-006 MS Sample Id: 561417-006 S MSD Sample Id: 561417-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	889	89	886	89	70-135	0	35	mg/kg	09.05.17 09:32	
Diesel Range Organics (DRO)	<15.0	999	1100	110	1100	110	70-135	0	35	mg/kg	09.05.17 09:32	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		117		70-135	%	09.05.17 09:32
o-Terphenyl	103		107		70-135	%	09.05.17 09:32

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3026700 Matrix: Solid Date Prep: 09.05.17
MB Sample Id: 730377-1-BLK LCS Sample Id: 730377-1-BKS LCSD Sample Id: 730377-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.104	104	0.103	103	70-130	1	35	mg/kg	09.05.17 07:57	
Toluene	<0.00200	0.100	0.102	102	0.101	101	70-130	1	35	mg/kg	09.05.17 07:57	
Ethylbenzene	<0.00200	0.100	0.101	101	0.100	100	71-129	1	35	mg/kg	09.05.17 07:57	
m,p-Xylenes	<0.00401	0.200	0.198	99	0.196	98	70-135	1	35	mg/kg	09.05.17 07:57	
o-Xylene	<0.00200	0.100	0.0952	95	0.0945	95	71-133	1	35	mg/kg	09.05.17 07:57	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	93		97		96		80-120	%	09.05.17 07:57
4-Bromofluorobenzene	99		105		103		80-120	%	09.05.17 07:57

QC Summary 561430

COG Operating LLC

USP FEE #2 H

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

Seq Number: 3026877 Matrix: Solid Date Prep: 09.06.17

MB Sample Id: 730477-1-BLK LCS Sample Id: 730477-1-BKS LCSD Sample Id: 730477-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.117	117	0.115	114	70-130	2	35	mg/kg	09.06.17 12:28	
Toluene	<0.00200	0.100	0.113	113	0.111	110	70-130	2	35	mg/kg	09.06.17 12:28	
Ethylbenzene	<0.00200	0.100	0.112	112	0.110	109	71-129	2	35	mg/kg	09.06.17 12:28	
m,p-Xylenes	<0.00401	0.200	0.219	110	0.214	106	70-135	2	35	mg/kg	09.06.17 12:28	
o-Xylene	<0.00200	0.100	0.105	105	0.103	102	71-133	2	35	mg/kg	09.06.17 12:28	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	96		98		95		80-120	%	09.06.17 12:28
4-Bromofluorobenzene	94		102		99		80-120	%	09.06.17 12:28

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

Seq Number: 3026700 Matrix: Soil Date Prep: 09.05.17

Parent Sample Id: 561383-008 MS Sample Id: 561383-008 S MSD Sample Id: 561383-008 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.103	103	0.104	104	70-130	1	35	mg/kg	09.05.17 16:23	
Toluene	<0.00200	0.0998	0.100	100	0.101	101	70-130	1	35	mg/kg	09.05.17 16:23	
Ethylbenzene	<0.00200	0.0998	0.0969	97	0.0982	98	71-129	1	35	mg/kg	09.05.17 16:23	
m,p-Xylenes	<0.00399	0.200	0.189	95	0.191	96	70-135	1	35	mg/kg	09.05.17 16:23	
o-Xylene	<0.00200	0.0998	0.0918	92	0.0932	93	71-133	2	35	mg/kg	09.05.17 16:23	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	106		106		80-120	%	09.05.17 16:23
4-Bromofluorobenzene	114		116		80-120	%	09.05.17 16:23

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

Seq Number: 3026877 Matrix: Soil Date Prep: 09.06.17

Parent Sample Id: 561742-001 MS Sample Id: 561742-001 S MSD Sample Id: 561742-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0756	75	0.0923	92	70-130	20	35	mg/kg	09.06.17 08:37	
Toluene	<0.00202	0.101	0.0635	63	0.0781	78	70-130	21	35	mg/kg	09.06.17 08:37	X
Ethylbenzene	<0.00202	0.101	0.0612	61	0.0761	76	71-129	22	35	mg/kg	09.06.17 08:37	X
m,p-Xylenes	<0.00403	0.202	0.116	57	0.144	72	70-135	22	35	mg/kg	09.06.17 08:37	X
o-Xylene	<0.00202	0.101	0.0594	59	0.0726	73	71-133	20	35	mg/kg	09.06.17 08:37	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		96		80-120	%	09.06.17 08:37
4-Bromofluorobenzene	114		104		80-120	%	09.06.17 08:37

CHAIN OF CUSTODY

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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)
www.xenco.com
Phoenix, Arizona (480-355-0900)

Xenco Quote # | Xenco Job # 561430

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: USP Fee #2H
Project Location: USP Fee #2H
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/ EXTENDED	BTEX	Chloride	Field Comments
1	T1	SURF	8-24-17	10:00AM											X	X	X	
2	T1	1'	8-24-17	10:00AM											X	X	X	
3	T1	2'													X	X	X	
4	T1	3'															X	
5	T1	4'															X	
6	T1	6'															X	
7	T1	8'															X	
8	T1	10'															X	
9	T1	12'															X	
10																	X	

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:

Temp: 2.8 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 2.6

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			1	2		2
3	Relinquished by:	Date Time: 8-25-17 12:30PM	Received By: Sid Butler 8-25-17 12:30p	Relinquished By: Sid Butler 8-25-17 2:45p	Date Time:	Received By: 4
5	Relinquished by: ARCESIO	Date Time: 8-26-17 10:00	Received By: 5	Custody Seal #	Preserved where applicable	On Ice ✓ Cooler Temp. 8.6 C Thermo. Corr. Factor

Final 1.000

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XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: COG Operating LLC

Date/ Time Received: 08/26/2017 02:00:00 PM

Work Order #: 561430

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

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.6
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seal present on shipping container/ cooler?	**N/A**
#5 *Custody Seals intact on shipping container/ cooler?	**N/A**
#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**

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

Analyst: PH Device/Lot#:

Checklist completed by: Shawnee Smith Date: 08/29/2017
Shawnee Smith

Checklist reviewed by: Kelsey Brooks Date: 08/29/2017
Kelsey Brooks